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Relational Systems Thinking:

The Dibaajimowin (Story) of Re-Theorizing "Systems Thinking" and "Complexity Science"

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Abstract
This paper extends the analysis begun in Goodchild (2021), with suggestions for engaging with the spirit of *relational systems thinking* as a dynamic interface theoretical model. It is a perspective offered to help systems change practitioners and scholars transcend binary and hierarchical thinking, in the sacred space between worldviews, to embrace a complexity mindset informed by Indigenous wisdom. It is not about the *what* of deep systems awareness, but the *how*.

Keywords
Indigenous; systems thinking; relational

Introduction *Gidinawendimin*

Anishinaabekwe indaaw (I am an Anishinaabe/Ojibway woman). *Waabishki Ogichidaakwenz-anang* and *Waaba-anang Ikwe indigoo Anishinabemong idash* (is what am I am known by the spirits in Ojibway). Melanie Goodchild *indizhinikaaz zhaaganaashiiong/ingikeniogoo gaye* (is what I am called in

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English/is what I am also known by). *Mooz indoodem* (I am moose clan). I am the daughter of the late Delaney Goodchild from Biigtigong Nishnaabeg First Nation (Anishinaabe) on the shores of Lake Superior and Melinda Jones from Ketegaunseebee/Garden River First Nation (Anishinaabe) on the shores of the St. Mary's River.

I honor the lands where I am currently writing, my mother's traditional territory at Ketegaunseebee (Garden River) First Nation. It is in accordance with Anishinaabe protocol that I introduce myself this way, so you know "who I am, to whom I am connected, and where I come from so that those listening to me will know the origin of my teachings (Geniusz, 2009, p. xv). I am descended from peoples and lands that were colonized by the French and British empires to build the imperial Nation now called Canada. The relationship between Indigenous peoples and the state has "remained *colonial* to its foundation" [emphasis in original] (Coulthard, 2014, p. 6) and so I have been engaged in a process of *decolonization* (see Smith, 2012) since I was 13 years old to pursue *Anishinaabe Mino-Bimaadiziwin* (the good life), "a unifying and transcendent concept that, when activated, contains the past, present and future of Good and respectful approaches to life" (see Debassige, 2010, p. 16). Settler-colonialism "fractured the bonds" that tied me and other Anishinaabeg "to tradition and culture and language and spirituality" (Wagamese, 2008, p. 18). This was accomplished through dispossession of our homelands and justified by the Doctrine of Discovery[7] and Terra Nullius and subsequent assimilationist policies, such as Indian Residential Schooling. My father attended residential school in Spanish and my mother attended Roman Catholic Indian day school in Garden River. Decolonization for me then is an ongoing process of *healing the fracture*.

In this introduction I have respectfully acknowledged the land where I live and work, told you of my ancestry that positions me as an Anishinaabe person, Indigenous to Turtle Island (North America), claimed my genealogy to locate me within my family, and situated myself as a member of a colonized Nation (Parter & Wilson, 2021, p. 1085). I also have privilege and wealth as a member of a first world country. These "obligatory accountabilities" begin to establish the elements of an Indigenous research paradigm and 'relationality' requires that you know about me before you can begin to understand my work (Wilson, 2008). My positioning as an AnishinaabeKwe (Ojibway woman) as shared above is the foundation of my "relationally responsive standpoint" with *ethical*, *relational*, *intellectual*, and *operational processes* (Yunkaporta & Shillingsworth, 2020) drawing upon my "unique spiritual makeup" as an Ojibway woman to fulfill my obligations and accountabilities as a researcher, knowing and respectfully reinforcing "that all things are related and connected" (Wilson, 2003, p. 175). In *Anishinaabemowi*n (our original way of speaking) we say *Gidinawendimin* (we

[7] See more about the Doctrine at https://www.afn.ca/wp-content/uploads/2018/02/18-01-22-Dismantling-the-Doctrine-of-Discovery-EN.pdf

are all related to each other). While I introduce myself as an individual, my individuation is relational, the story of my journey as a scholar arises from how I explore "what it means to be in relation with others. Knowing how to be in good relations – to be a good relative to all that is" (Cajete, 2015, p. 151). In this essay I am in relationship with the spirit of an evolving Indigenous standpoint theoretical framework called *relational systems thinking*, and my methodology is the *dibaajimowin* (story) of my current understanding. It is a perspective to help systems change practitioners and scholars transcend binary and hierarchical thinking, to embrace a complexity mindset, informed by Indigenous wisdom traditions.

Relationality

As Dr. Gregory Cajete (2015), a Tewa Indian from Santa Clara Pueblo, eloquently explains:

> Because Indigenous views of the nature of reality build on relationships – reality is wholly interrelated – knowledge emanating from an Indigenous worldview has to be understood relationally. Nothing exists in isolation or can be understood apart from all its relationships. Here is where the metaphors come in: they help us talk about intricate and complex relationships – things we simply cannot convey through linear, verbal expressions. Organizing and using Indigenous knowledge requires that we understand the metaphorical world and hot is shows up or manifests in many settings. (p. 207)

And Opaskwayak Cree scholar Shawn Wilson writes extensively about *relationality* and *relational accountability* in his seminal work, *Research is Ceremony: Indigenous Research Methods* (2008). He says that there is a common thread linking Western research paradigms, which is that knowledge is "seen as being *individual* [emphasis in original] in nature," which is vastly different from the view within Indigenous paradigms where knowledge is seen as "belonging to the cosmos" and we humans are only the "interpreters" of that knowledge (p. 38). We individual humans then do not own or possess knowledge. Instead, in the Anishinaabe philosophy of coming to know, knowledge resides in the land and knowledge is progressively revealed through experience on the land (Davidson-Hunt & Berkes, 2003). "An Indigenous paradigm comes from the foundational belief that knowledge is relational.

"Knowledge is shared with all creation" (Steinhauer, 2002, as cited in Wilson, 2008, p. 56). It is not just a relationship between humans, which is anthropocentric, but a relationship with all of creation, "with the cosmos; it is with the animals, with the plants, with the earth that we share this knowledge. It goes beyond the idea of individual knowledge to the concept of relational knowledge …you are answerable to all your relations when you are doing research (p. 57). Indigenous research paradigms are then "clearly a more-than-

human practice" (Bawaka Country et al., 2015, p. 274) and "we relate to animals, plants, weather, geology, songs, dances as kin. They make us who we are, just as we make them who they are" (p. 275).

So ultimately, relationality is also about our relationship to the land and all our kin, a spiritual connection. To hear the messages of Country, of *Shkaakaamikwe* (our earth mother), we "need to attend with great care to the world," for "to hear these messages, you have to be attentive and open. You need to be alert to the world in all its complexity. The messages that animals, plants, winds send may be heard by humans or they may not" (Bawaka Country, et al., 2015, p. 275). Wilson's (2008) friend Peter talks about taking people out onto the land so they can experience this connection themselves, to tap into the frequencies of the land as some Elders I know describe it. Speaking about the idea of 'space', Peter says, space is a distance or relationship between people. So, his friend who is Tongan and grew up in New Zealand says the Maori, "when they do ceremonies, it's to eliminate the space between people." And the space between people "is Kapu, is sacred, and you go through a ceremony and respect each other's space." Peter goes on to say that he thinks the Indigenous concept of place is that there is that same kind of relation between humans and our environment. "So the distance or relationship between ourselves and the environment is sacred, and so you do ceremonies to bridge that space or distance" (Wilson, 2008, p. 87). That is how *relational systems thinking*, the focus of this essay, is explored, as a model for *bridging the distance* in the sacred space between worldviews. It also builds upon the notion of *ethical space* (see Ermine, 2007). In my doctoral dissertation (forthcoming), I explore more in-depth Nakata's (2010) *cultural interface* and *research at the interface* (Durie, 2005, p. 306) to harness the energy from two systems of understanding to create new knowledge that can then be used to advance understanding in two worlds.

> By reducing the space between things, we are strengthening the relationship that they share. And this bringing things together so that they share the same space is what ceremony is all about. This is why research itself is a sacred ceremony within an Indigenous research paradigm, as it is all about building relationships and bridging this sacred space… there is no distinction made between relationships that are made with other people and those that are made with our environment. Both are equally sacred. (Wilson, 2008, p. 87)

Wilson (2008) draws attention to the work of Ray Barnhart and Oscar Kawagley who talk about 'complexity theory.' It is what most Indigenous scholars go through all the time notes Wilson. Complexity theory "provides an emergent system that melds the 'formal' and Indigenous knowledge systems" (p. 44). One of the great strengths that Indigenous scholars bring with them is "the ability to see and work within both the Indigenous and dominant worldviews" (p. 44). This complexity mindset is what *relational systems thinking* (see Goodchild, 2021) taps into. My *Indigenist research* (see Wilson & Hughes, 2019, p. 7) on

decolonizing systems and complexity science led to a unique Indigenous "complexity pattern of thinking" (Wulun, 2007, p. 395), an innovative pathway to challenge and perhaps change the narrow paradigmatic assumptions of the conventional, or Western, approach to systems thinking and complexity.

Wilson (2008) says that as part of their white privilege, dominant system academics are usually not bicultural. There is "no requirement for them to be able to see other ways of being and doing, or even to recognize that they exist. Oftentimes then, ideas coming from a different worldview are outside of their entire mindset and way of thinking" (p. 44). Wilson concludes, "the ability to bridge this gap becomes important in order to ease the tension that it creates" (p. 44). Bridging the gap in a good way, in the sacred space between worldviews, and the sacred space between human beings and the land, is the purpose of *relational systems thinking* as an Indigenous standpoint theory.

> I can say that the wisdom of the Elders and our natural surroundings is looked upon as a living teacher and life itself… Our people have used these since time immemorial which is why it is understood as a living culture. In our modern times the people must learn how to apply and use these teachings, how to live them in the midst of all the distractions of the modern culture. (Nabigon, 2014, p. 34)

What Is "Systems Thinking"?

> Any discussion of Indigenous Knowledge systems is always a polite acknowledgement of connection to the land rather than true engagement. It is always about the *what*, and never about the *how* [original emphasis]. (Yunkaporta, 2020, p. 17)

While many studies and papers explore or critique the how and why of engaging with multiple ways of knowing, this paper presents *relational systems thinking* as a theoretical model to address the *how*, as lamented by Tyson Yunkaporta (2020). *Relational systems thinking* (see Goodchild, 2021), is a stance, a complexity-relationality mindset or complexity pattern of thinking, anchored in Indigenous worldviews, that can aid scholars and practitioners in generating the conditions for innovation and systems transformation. My dear friend and colleague Peter Senge often says to me, we should be able to explain 'systems thinking' without using the word 'systems'. Systems thinking is a lens on the world that understands natural and human endeavours are bound together "by invisible fabrics of interrelated actions" (Senge, 2006, p. 7). The Elders might say those invisible fabrics and interrelated actions are spiritual energies. Is there a song instead, a poem, a piece of art, a landscape perhaps I wonder, that teaches us the principles of complexity and systems thinking? This has been the focus of my scholarship in studying *complex adaptive systems* (see Zimmerman et al., 1998) from an Indigenous perspective.

The term 'systems' was initially associated with operations research and optimisation techniques, says Dias (2008). These techniques embodied the ideas of interconnected entities and their interactions, and also the notion of system boundary, which provides limits and constraints. These approaches were "strongly computational in nature and hence highly reductionist" (p. 202). Systems thinking evolved and broadened, to include areas not covered by reductionist approaches, which are now called 'hard' systems methods. New systems approaches have been called 'soft' and are not intellectually easier than those of the 'hard' variety, says Dias. On the contrary, "they are seen as tackling important problems that defy facile quantification rather than using well defined methods to solve relatively trivial problems" and further they recognize "the *socio-technical* [emphasis in original] nature of systems, with human involvement being taken into account of, not only within the problem being studied, but also in the qualities of the problem solver and his or her interaction with the problem" (p. 202). Thus, "everything needs to be seen as a *process* [emphasis in original] involving its environment rather than as merely an isolated product" and "closely associated is the phenomenon of temporality, because all processes take place in time and involve *feedback* [emphasis in original]" (pp. 202–203). Dias argues that soft systems are important to engineering, because while engineering is based on science, "it is practiced in society, with sociological considerations crucial for design and decision-making" (p. 203). When I first encountered both hard and soft systems thinking, the underlying holistic principle resonated with me; it was familiar.

The biochemist Lawrence Henderson (1878 – 1942) was influential through his early use, says Capra & Luisi (2014), of the term 'system' to denote both living organisms and social systems. From that time on, "a system came to mean an integrated whole whose essential properties arise from the relationships between its parts, and 'systems thinking' the understanding of phenomenon within the context of the larger whole" (p. 64). The root meaning of the word 'system' derives from the Greek *syn* + *histanai* ('to place together'). So, to understand things systemically "means literally to put them into context, to establish the nature of their relationships" (p. 64). Hence the notion of *relational systems thinking* is re-prioritizing the relational aspects of doing systems awareness work. "The emergence of systems thinking was a profound revolution in the history of Western scientific thought" says Capra & Luisi (2014, p. 65), however the principle of *irreducible wholeness* (p. 10) has for generations been reflected in the ceremonies, languages, customs, cultures, stories, and teachings of Indigenous peoples across Turtle Island (North America), and around the world. This "new way of thinking" (p. 65) in the West is in fact a very old, ancient, and wise way of thinking that has been protected and nurtured by Indigenous peoples despite cultural genocide and assimilationist policies that forbade speaking the very languages that encode our complexity pattern of thinking and systems awareness.

Quantum theory was formulated during the first three decades of the twentieth century by an international group of physicists who realized that their

basic concepts, their language, and their whole way of thinking were inadequate to describe atomic phenomena. The paradoxes these scientists encountered "are an essential aspect of atomic physics" and they had to realize that "they arise whenever one tries to describe atomic phenomena in terms of classical concepts" (Capra & Luisi, 2014, p. 69). Once this was perceived, "the physicists began to learn to ask the right questions and to avoid contradictions, and finally they found the precise and consistent mathematical formulation known as quantum theory, or quantum mechanics" (p. 70). The coherent worldview that emerged from this revolutionary change in Western concepts of reality is called "the systemic view of life" by Capra & Luisi (2014), who also conclude that this "ecological view" is grounded in spiritual awareness – connectedness, relationship, community, and belonging as the essence of spiritual experience. "Thus it is not surprising that the emerging systemic and ecological paradigm is in harmony with many ideas in spiritual traditions" (Capra & Luisi, 2014, p. 70) they conclude. In chapter 13 of their book, the authors discuss the parallels between the basic concepts and ideas of physicists and Eastern mystics arguing that various spiritual traditions provide "a consistent philosophical background to our contemporary scientific theories" (Capra & Luisi, 2014, p. 70). Is it any wonder then that Western physicists F. David Peat and David Bohm became friends with Indigenous thinkers Leroy Little Bear and Sa'ke'j Henderson or that I, a systems geek, have become friends with Peter Senge and Otto Scharmer? David Bohm, says physicist F. David Peat (2005), began to develop what he called the implicate (or unfolded order). Bohm (1981) argued that while the classical physics of Newton described what could be called the surface of reality, by contrast, quantum mechanics "has forced us to move to deeper levels of perception of the world" (Peat, 2005, p. 140). Reality according to Bohm, in its deepest essence, is not a collection of material objects in interaction, but a process or a movement, which he called "the *holomovement* [emphasis in original] – the movement of the whole" (Peat, 2005, p. 140).

So, the stable forms we see around us are not primary in themselves but only the temporary unfolding of the underlying implicate order. "To take rocks, trees, planets, or stars as the primary reality would be like assuming that the vortices in a river exist in their own right and are totally independent of the flowing river itself" (Peat, 2005, p. 140). My colleague, Blackfoot scholar Leroy Little Bear often says the only permanence is change, or constant flux. Energy waves are spirit. Nothing is inanimate so we say, all my relations. In this worldview everything is related, and kin, holistic, not reductionist. The problem I have found with conventional Western-based hard and soft systems thinking is that systemic processes are often seen/sensed and then described in English, the language of the colonizer. English is noun-based and therefore has an anthropocentric bias, a tree is a thing, not a relation. My friend and colleague Tiokasin Ghosthorse (Lakota) and I have recorded radio shows and webinars speaking of this 'nounification' of our thinking by English. Indigenous languages are process, context, land and verb based. As Leroy has often said, in English it's like one picture frame of 35mm film, while in his language Blackfoot, the show

goes on (Arizona State University, 2011). With its heavy emphasis on nouns, English creates dichotomous thinking, and that has led to hierarchical thinking that has historically positioned science as good/superior and Indigenous wisdom traditions as bad/inferior. In fact, mainstream science throughout its modern history, since its formation in the 16th century, marginalized different ways of knowing, labeled various types of knowledge systems as folk wisdom – becoming a "sworn enemy" of all superstition, including shamanism, holism, sacral phenomena, spirituality, occultism, etc., says Wräkberg & Granqvist (2014, p. 91). They conclude that many surely find "reflection on the incongruity of holism and reductionism a waste of time" instead preferring to spend their time conducting "normal science" (p. 92). This compartmentalization of knowledge and disciplines still goes on in universities like mine so I must navigate that terrain. Like generations of Indigenous scholars before me, my work has been an effort to revitalize *Anishinaabe gikendaasowin* (our original ways of knowing) and *Anishinaabemowin* (our original ways of speaking) so that I can progress Indigenous, holistic ways of seeking wisdom.

Relational Systems Thinking

A central insight of systems theory is that once we see the relationship between structure and behaviour, we can begin to understand how systems work (Meadows, 2008). According to Meadows, a 'system' is a set of things – people, cells, molecules, or whatever – interconnected in such a way that they produce their own pattern of behaviour over time. We human beings are complex systems – our own bodies "are magnificent examples of integrated, interconnected, self-maintaining complexity (Meadows, 2008, p. 3). Meadows concluded that modern systems theory, bound up with computers and equations, hides the fact that "it traffics in truths known at some level by everyone. It is often possible, therefore, to make a direct translation from systems jargon to traditional wisdom" (p. 3). With a systems perspective "one enjoys the multi-dimensional dynamic flow of circumstances and comes to accept, if not enjoy, paradox" (Anderen & Björkman, 2017, p. 51).

> We have people now who are very clearly among the best scientists who are willing to agree that there are limits to the knowledge that science can have about nature. We're reaching a place in which there's ever wider agreement that poetry gives us as much information about our relationship with the universe as telescopes do, and that those two strains can live together and complement one another harmoniously. Those two things can happen, and that's actually not dissimilar to my culture, which asserts that on the one hand there are dreams and visions and on the other hand there's a responsibility to maintain a clear vision of reality. Those two streams of thoughts and reactions have to live cooperatively together. (Mohawk, 2008, p. 49)

Indigenous community is a 'complex adaptive system' that has 'emergent properties' that form an Indigenous community's social, cultural, and ecological expressions in unique ways. And Indigenous communities are 'human living systems' (Cajete, 2015). In 2021 we (me along with Diane Longboat, Dan Longboat, Kevin Deer, Rick Hill, Peter Senge and Otto Scharmer) co-wrote and published "Relational Systems Thinking: That's How Change is Going to Come, from Our Earth Mother" (Goodchild, 2021) in the inaugural issue of the Journal of Awareness-Based Systems Change. The article was an attempt by me as an Anishinaabe doctoral candidate in Social & Ecological Sustainability at the University of Waterloo to "negotiate the politics of knowledge construction" (Bishop et al., 2021, p. 197) and walk my talk. Writing the article was a project of "discovering the beauty of our knowledge" (Smith, 2012, p. 161) undertaken to decolonize systems thinking and awareness-based systems change. In 'delinking' from a typical trajectory for writing an academic paper, using a Haudenosaunee two-row visual code (see Figure 1), I took up a 'decolonial path' (Mignolo, 2011, cited in Bishop, Vass & Thompson, 2021, p. 195). The two-row visual code demonstrates how "Indigenous epistemology is all about ideas developing through the formation of relationships" (Wilson, 2008, p. 8). It was a rhetorical device for me to invite readers into a space and place where two streams of thought live cooperatively together, as the late John Mohawk, Turtle Clan of the Seneca Nation, described.



Indigenous Knowledges, decolonizing, mother earth, healing

Kevin Deer: I was at a conference in Montreal because it was dealing with soils, which is an extension of Mother Earth. I talked to them about my experiences of fasts and vision quests, and about the personal healing that I had to do. Before that, I believed that babies cry, weaklings cry, but real, as a real man, I don't cry. Anyway, through the *Midewiwin* Lodge teachings when they put you out, it's usually before the sun sets. So, in that lodge, I'm asking myself, if this lodge represents my life, so I have to go back to my earliest recollection, where there was pain and hurt. If there's hurt and pain then I have to go back and give this pain back to my first mother, which is Mother Earth. In the construction of my lodge, there is one sapling in the ribs of my lodge that represents my life's journey. I ask in Onkwehonwehneha "Mother how can you heal me?" Because my biological

Peter Senge: We once had a meeting in South Central Colorado, 200 miles north of Taos, New Mexico. There's beautiful land there, used for thousands of years for spiritual retreat, anyhow we had a small group there. And there was one woman from China, 35 years old or so, a skillful facilitator, I've worked with her in China, but she grew up as a modern young Chinese person, which means she had like zero contact with the natural world. So, there was the opportunity for people to sleep on the land, they didn't have to, but there was that opportunity. We had organized it so they could get sleeping bags and tents. It was a pretty chilly time of year, early October, so it was cold enough that it was a little daunting. And this young Chinese woman had never slept outside in her life. But two people who had spent a lot time camping outside said they

Figure 1: Two-row visual code, featured in Goodchild (2021)

This paper extends the analysis begun in Goodchild (2021), with suggestions for engaging with the spirit of *relational systems thinking* as a *dynamic interface theoretical model* (Yunkaporta & McGinty, 2009). Universities are elite institutions which reproduce themselves "through various systems of privilege" (Smith, 2012, p. 132) and many Indigenous scholars feel the pressure to "comply or leave" (Bishop, 2021, p. 370) rather than doing battle with the "repressive character of methodologies" in the "western scientific establishment" (Matsinhe, 2007, p. 840). In Goodchild (2021) I did the hard work of finding and then sharing the Haudenosaunee two-row visual code "as an act of defiance" and "to increase complexity" (Bishop, 2021, p. 368). Encountering the disenchantment of the world in the academy, I was "pushing back" with the enchantment of Indigenous ways of knowing (Herman, 2016; Matsinhe, 2007). Rather than exploring a Western notion of systems awareness and complexity, the rationale for *relational systems thinking* as a model comes from Indigenous knowledges, Haudenosaunee and Anishinaabe, a process of decolonial knowledge-making (Nakata et al., 2012, p. 124). I am practicing cultural fluency as Dr. Dan Longboat calls it, as I am not Haudenosaunee.

To embrace "sophisticated Indigenous ways of knowing," (Yunkaporta & McGinty, 2009, p. 55) scholars and practitioners need a complexity mindset and *relational systems thinking*, as a dynamic interface and theoretical model for reasoning in the *sacred space* between ways of knowing. This is not the *what* of deep systems awareness, but the *how*. The interface is dynamic because it situates "the life worlds of contemporary Indigenous people in the dynamic space between ancestral and western realities" (Yunkaporta & McGinty, p. 58).

> We, as Indigenous academics, need to have a long think about our position at the intersection between Indigenous and Western systems of knowledge, and about the intersection itself as it is constituted in the academy, and as it emerges in conditions on the ground in communities. There is much work ahead to conceptualize the intersections differently, to re-theorise them in all their complexity, and to find better methodological approaches for negotiating them. (Nakata, 2006, p. 274)

Is it possible that *relational systems thinking* offers a relational, methodological approach for negotiating these intersections? Based upon various talks and presentations inspired by the initial article, I began to develop a theoretical model and visualization of the *relational systems thinking* standpoint for deep systems awareness (see figure 2).

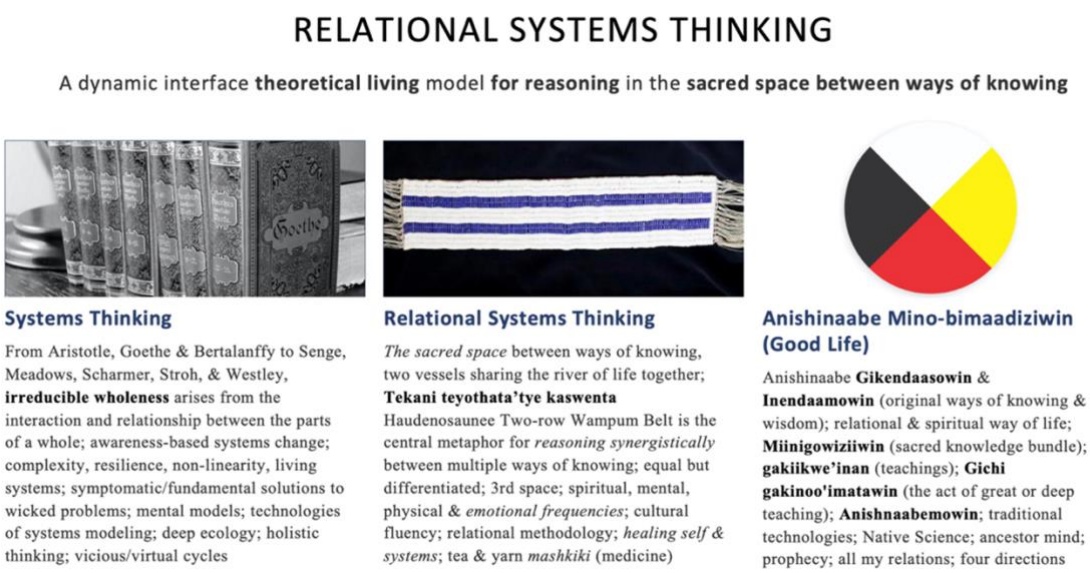


Figure 2: Relational Systems Thinking Theoretical Model.

This visual representation of *relational systems thinking* as a dynamic interface living model, represents the most current version which will continue to evolve as a living model that comes from living cultures. This model privileges Indigenous and local place-based knowledge (Yunkaporta & McGinty, 2009). I offered this diagram in various presentations to introduce *relational systems thinking* as a model for systems awareness in the third space. The two-row wampum is a living treaty, a way for distinct peoples to live together in peace, that each nation will respect the ways of the other. The central metaphor of *relational systems thinking* is the two-row wampum belt. It is a Haudenosaunee teaching and metaphor of "relatedness" (Yunkaporta & Shillingsworth, 2020, p. 8). The third space is the sacred space between the two vessels of the wampum belt. "Your intellectual process in relationally responsive standpoints," says Yunkaporta & Shillingsworth (2020), involves "engaging with and negotiating cultural metaphors that can express, structure and inspire thinking and learning processes" (p. 7). The river of life nourishes all of life, and the two strains of thought that Mohawk (2008) spoke of earlier, is represented here in the two-row wampum belt. This model invites scholars and practitioners to inhabit the space between, to take *relational systems thinking* beyond an intellectual exercise, to inform practice and "open up and celebrate third spaces in our everyday lives" (Dudgeon & Fielder, 2006, p. 405). This model was developed through collective wisdom as I shared versions with many different audiences throughout 2021 and often in response to clarifying questions, I edited elements.

Since the publication of the paper, there has been significant uptake of the idea of *relational systems thinking* and I have been immersed in an embodied experience of 'sensing from the field' (Scharmer, 2016). In fact, I can identify the first moment in which I sensed that the spirit of *relational systems thinking* was about accessing optimal flow states for reasoning with a *relationally responsive standpoint* (Yunkaporta & Shillingsworth, 2020) in the space between

worldviews. A colleague gifted me a copy of a beautiful book called *Deer & Thunder: Indigenous Ways of Restoring the World* by Andean Elder Arkan Lushwala (2017). In it, Lushwala explains how ancient peoples understood the importance of having an inclusive mind and how they trained themselves to combine feminine and masculine ways of interpreting reality:

> … which allowed them to follow their heads and their hearts simultaneously. Like any other common man, for many years I used reason to eliminate contradictions, to protect others and myself from the unpredictable wildness of our world, from how dangerous it felt that much of reality seemed different from how I was or how I believed the world should be. But through a life of ceremony my eyes have been washed into a deeper vision, and I can now practice a way of reasoning that does not take sides but instead allows two opposites to dance together until the face of a third presence starts showing up. Today I engage my heart to feel into what wants to be born from the union of the opposites and stand at its service, like a midwife, ready to catch and hold the future with respect. (p. 104)

A "relationally responsive approach seeks dialogue, synergy and innovation in the respectful interaction of diverse systems" (Yunkaporta & Shillingsworth, 2020, p. 10). I was invited to be the keynote speaker at a 50/150 Legacy Event for the federal department of Environment and Climate Change Canada. I offered a talk on *relational systems thinking* as a theoretical model to help bridge the gap between Western science and 'Native Science' (see Cajete, 2000). The event was very well attended and well received. The analytic reports of the webinar showed that there were 1,026 unique page views of the live event, from three countries in 72 cities. Afterwards, in a debrief with core Indigenous staff who initially invited me to speak, they thanked me for offering them and their colleagues a way to *ethically navigate* the intersection of different worldviews. This they said, would help them to do their jobs, of addressing environmental issues such as climate change within a system that may contain elements of cross-cultural misunderstanding. In that moment, I sensed a shift in my relationship to the spirit of *relational systems thinking*; it offers a way of reasoning that taps into, rather than denies, the "tension and creative synergy" (Coates et al., 2006, p. 395) at the intersection of foundational beliefs.

For the past year and half, I have been in deep relationship with the teachings offered by my co-authors, human and non-human, including the idea of sacred space, that our relationship together, between Indigenous peoples and others, exists in the *space in between*, talked about by my Uncle Dan Longboat[8].

[8] Dan Longboat from Six Nations of the Grand River, is my spiritually adopted Rakenonhá:a (Uncle, my). He is a dear friend and brother of my Uncle Blaine Loft of Tyendinaga Mohawk

This current essay, a *bagijigan* (offering) (Doerfler et al., 2013, p. xv) is my *dibaajimowin*, my story of being in relationship with the spirit of *relational systems thinking* and exploring the patterns of its teachings. This story is my birthright so no-one has authority over how I work with stories. This is an important teaching taught to Leanne Betasamosake Simpson by Stó:lō author and poet, the late Lee Maracle (Simpson, 2017). "Words carry the power of creation – we create ourselves with stories" says Anishinaabe scholar Jill Doerfler (Doerfler et al., 2013, p. xx). *Dibaajimowin* is my methodology for searching for knowledge, and it embodies my own "learning and healing," and this knowledge is "transferable" (Absolon, 2011, p. 105) as my writing aims to "transform systems of knowledge production" (p. 106). This is a significant departure from conventional scholarship in that *dibaajimowin* represents *Anishinaabe gikendaasowin* (our original ways of knowing) thus "does not need to be defended – it just *is*" [original emphasis] as Herb Nabigon, brother of my late Uncle Lambert Nabigon, asserts (Nabigon, 2014, p. 33). It is through living our teachings that we become who we are, and each person's path will be different says Herb, and "it is not our job to judge another person on their path, but to try to be helpful and loving to them in all ways. Even if that means there are times of confusion. We learn from those teachers also" (Nabigon, 2014, p. 34).

Dibaajimowin: Decolonial Knowledge-Making

Let me tell you a story. *Aadizookaan* are traditional legends, ceremonies, sacred stories. *Dibaajimowin* are ordinary stories, personal stories, and histories. Each type of story is grounded in *Anishinaaba-izhitwaawin*, our Anishinaabe (Ojibway) culture, teachings, customs, and history (Geniusz, 2009, p. 10). Within these stories are *gakiikwe'inan* (teachings) (Eleanor Skead, personal communication, January 2020) that come from a place of spirt, offered to us from the land, the sentient landscape where we live. This entire essay is the *dibaajimowin* of my evolving relationship with the spirit of the teachings offered in "Relational Systems Thinking" (Goodchild, 2021). I extend my gratitude to you if you entered a relationship with that paper already. My dear friend and colleague Tyson Yunkaporta, who belongs to the Apalech clan in far north Queensland, Australia, says in his brilliant book *Sand Talk: How Indigenous Thinking Can Save the World* (2020), that the stories shared about Indigenous knowledge in settings like conferences or journal articles must offer insights into the problems we are experiencing in the world today, not merely "formulaic self-

Territory. Blaine was a dear friend and brother of my late father Delaney Goodchild, and after my father passed to the spirit world, many years later Blaine and I connected through Dan. As a brother to my dad, Blaine became my Uncle, and as a brother to Blaine, Dan became my Uncle. In the Mohawk language Uncle means 'he who looks after my mind.' That is the brief dibaajimowin of how this AnishinaabeKwe (Ojibway woman) has the honour of kinship with two Mohawk Uncles. In Anishinaabemowin they are Nimishoomeyag (my father's brothers).

narratives and cultural artifacts as a window for outsiders to see into a carefully narrated version of their past, and the view is one-way" (p. 16). Tyson and I have recorded several podcasts and webinars of our *yarns* (see Barlo et al., 2020; Barlo et al., 2021; Hughes & Barlo, 2021) on yarning as relational methodology. When the Haudenosaunee knowledge keepers, Diane Longboat, Dan Longboat, Kevin Deer and Rick Hill, and Western systems thinkers Peter Senge and Otto Scharmer shared their teachings with me to write an article, it was a process of *bagijige* (making an offering) (Doerfler et al., 2013) to contribute to the field of systems awareness and transformation. The transformation needed is nothing less than saving Mother Earth from anthropogenic destruction. As Uncle Dan stated:

> Now looking at prophecy, we talk about this idea of the two-row wampum belt, the Europeans and Indigenous peoples, or how any people that come to North America, and our relationship together exists in the space in between. It is the sacred space, those principles of peace, friendship, and respect, that becomes the sacred way that we work towards one another, but the idea behind it is that we are both sailing down the river of life together. And our responsibility it to help one another, but more specifically, the river of life is in danger right now and there will be no more river of life. So, it behooves us now to utilize our knowledge together to work to sustain, to perpetuate, to strengthen the river of life. Why? So that all life will continue. And at the end of the day any social innovation or systems stuff should be all about the continuation of life and however we understand it to be – not just human life but all of it, for this generation right to the end of time. (Goodchild, 2021, p. 84)

I first met Peter Senge during a convening of the Academy for Systems Change in Whistler, BC in April of 2019. I first met Otto Scharmer during the Executive Champions Workshop (ECW) in Stowe, VT in August of 2019. During that workshop Otto presented a model he created about the civilizational shift from ego to eco, on upgrading society's operating systems (see Scharmer & Kaufer, 2013; Scharmer, 2018). The model analyzes evolutionary societal change from operating systems (OS) 1.0 to 4.0. At that time, I was not familiar with Theory U or that model, however something struck me as he presented it, on a few flip charts under the meeting tent in the field in Vermont. Operating systems are reflected across several systems, health, learning, farm/food, finance, and governance. OS 1.0 is characterized as input and authority-centric, 2.0 is output and efficiency-centric, 3.0 is stakeholder and customer centric, and 4.0 is generative eco-system centric. To illustrate from the model for instance, the health system under OS 1.0 is traditional doctor/centric medicine while under OS 4.0 is salutogenesis: strengthening sources of wellbeing. As I listened to Otto explain the model, it occurred to me that the descriptors of the various systems described as OS 4.0 accurately described our ancient Anishinaabeg systems. I

worked up the courage to raise my hand and offer this observation, "Otto, it seems to me that what you describe in this model, for OS 4.0, that's what we Indigenous peoples had here on Turtle Island (North America) before contact. We already had those until they were disrupted at contact [by settler colonialism]". At the break after that session Otto approached me and asked if we could connect and have a cup of tea/coffee later to chat about this reflection. And then Peter approached me and suggested that we three might wish to "write a paper together." As a junior scholar in Western systems theory, I was honored. I found my mob, kindred spirits who were as interested in 'decolonizing' systems thinking as I was. Immediately, both Peter and Otto accepted the *gift* (Kuokkanen, 2008) of Indigenous wisdom that I offered.

The relational process provides built-in mechanisms for increasing connectedness and responding to authentic relationships (Yunkaporta & Shillingsworth, 2020). As I wrote the first article (Goodchild, 2021), I was in relationship with the sentient landscape of the thundering waters, now called Niagara Falls. As a visitor to that territory, I asked my Uncle Dan for assistance, to join my doctoral committee as an external advisor. When he heard I was writing a paper with two systems thinkers, Peter and Otto, he said "well you better talk to our systems thinkers too" (personal communication, October 2019). "Wisdom awaits those who walk with their Elders. Our Teachings, our Ceremonies, and our Elders are the repositories of this knowledge, which has been with us since the First Sunrise" (Anderson, 2002, p. 304). And so, we had tea together, the Haundenosaunee Intelligentsia and me, at the Gathering Place in Six Nations on December 23, 2019. Peter and Otto had never met Diane, Dan, Kevin, or Rick when the article was published. I sat in dialogue with Peter and Otto on various occasions at MIT in October of 2019 and then with the Haudenosaunee Elders in Six Nations. As I read my notes from these series of conversations, I began to sense something special, that they were all talking about the river of life and that the river is now in jeopardy, only they were using different ontologies and epistemologies, different worldviews to tell their stories. I was positioned, to listen to their stories, stemming from their respective sophisticated systems of knowledge (Yunkaporta & McGinty, 2009), at the cultural interface, a "complex knowledge interface" (Nakata et al., 2012, p. 124) and share those stories via the two-row visual code, a form of praxis for inhabiting the space between.

Battiste & Youngblood Henderson (2009) describe the relationship between Eurocentric knowledge systems (EK) and Indigenous knowledge systems (IK) arguing that IK is "more than the binary opposite of EK" (p. 7). I concur, that is why *relational systems thinking* builds upon the notion of the space between epistemologies, or the *cultural interface* (Nakata, 2010), the *dynamic interface* (which builds on Nakata's notion of the cultural interface) between Western curriculum knowledge and Indigenous knowledge (Yunkaporta & McGinty, 2009), or the third way, to focus on the *interface* between Indigenous knowledge and other knowledge systems to generate new insights, built from two systems (Durie, 2005). It is a matter of 'space' rather than 'place'. Building on cultural

theorist de Certeau, the third space that *relational systems thinking* opens up, may be described in the colonial context - "where the dispossessed have no choice other than making some 'space' in a 'place' now owned and controlled by colonizers" (Dudgeon & Fielder, 2006, p. 399), in this case Universities. Building further on Bhabha's 'third space,' it is in essence, "the fissure between ostensibly seamless and stable places" (p. 400). What is key here is that "Everything happens in between" (p. 400) and the third space is "a radically hybrid space" (p. 401). Bhabha "shifts away from conceptualizing cultures as binary or dualistic and he is interested in what is created in between the coloniser and the colonized… hybridity is the third space that enables a new position or expression to emerge" (p. 404). The third space unsettles, to use Bhabha's terms (1993, cited in Dudgeon & Fielder, 2006, p. 407) is "neither one nor the other."

Australian Aboriginal scholar Martin Nakata (2006), who writes about the discipline of Indigenous Studies and whose work I have referenced throughout this essay, approaches the concept of intersections between different knowledge systems as an opportunity to "pursue inter-subjective mapping of our many relationships" (p. 267), as opposed to interrogating sites of apparent intersection. Nakata[9] is Pro Vice-Chancellor Indigenous Education and Strategy at James Cook University. He is a Torres Strait Islander, holds a PhD in Education, and is recognized internationally as one of the leading Indigenous academics in Australia. He points out the limitations of "Indigenisation" in the academy, "which has concentrated on carving out a separate domain" which in some ways is "antithetical" to our own traditions which are holistic. Our traditions he observes, "have not been closed systems" (p. 269). "Indigenisation" as a strategy is "flawed thinking" (p. 270):

> What is needed is consideration of a different conceptualization of the cross-cultural space, not as a clash of opposites and differences but as a layered and very complex entanglement of concepts, theories and sets of meanings of a knowledge system. (Nakata, 2006, p. 272)

Too often Nakata (2010) says, the interface between Indigenous knowledge systems and Western scientific knowledge systems (Islander and scientific in his case) is a "contested space where the difficult dialogue between us and them is often reduced to a position of taking sides" (p. 53).

> Let me be clear about this. In universities, the great mediator between Indigenous and non-Indigenous understanding is not us, is not Indigenous people or academics, but the ontology of Western

[9] The asteroid 7547 Martinnakata is named for Professor Martin Nakata in recognition of his role promoting and sharing knowledge of Indigenous astronomy. He was the first Torres Strait Islander to complete a PhD in Australia. Learn more here https://www.abc.net.au/radionational/programs/sundayextra/the-year-that-made-me:-martin-nakata,-1980/12599062

> knowledge systems. It is the established disciplines, their knowledges and practices that mediate meaning, which interpret the Indigenous world to both Indigenous and non-Indigenous students… All knowledge that is produced about us and all knowledge that we produce ourselves is added to the Western corpus, and thereby gets reorganized and studied via the disciplines of Western knowledge. (Nakata, 2006, p. 271)

Like Arkan Lushwala (2017) Nakata (2006) does not advocate choosing sides, instead he says that explorations at the interface of different knowledge systems is much more representative, "a tangled web of where we are caught up …than the constant reduction of complexity to simple oppositions that posit us in ways that confine us to either/or options" (p. 272). His thinking is like *relational systems thinking*. And the goal of Indigenous Studies, he concludes, is "one that generates knowledge for us" (p. 273). And that is a key difference between 'indigenizing' scholarship for Westerners and generating knowledge for us: we have deep intellectual traditions but given the current state of the planet, "We do not presume that our knowledge practices can deal with the complex effects of inter-related practices occurring at a global scale" (Nakata, 2010, p. 55). We also need to jump into the river, the space between the ship and the canoe, to address the unsustainable practices of our time at a global scale. It is worth quoting Nakata (2010) at length here as the content is crucial to my story:

> Like me two generations ago, Islander children growing up in the Strait today are the inheritors of tradition and inheritors of a world greatly changed over the last few generations. As I was, so they are witnesses to ongoing change. Their identification as Torres Strait Islanders is multiple, often tied to more than one place, group, time and to nation. Historical accounts tell them of disruption and change; academic analysis tells them of boundaries, dissonance, and loss. Island stories and the way they deploy traditional knowledge concepts and language, tell them of continuity with old knowledge and practice in changing times and tell them something of their history that may not appear in others' accounts of us.
>
> For children to confidently know their marine environment and take charge of their futures requires knowing and working with two knowledge systems. These knowledge systems can be viewed as irreconcilable on cosmological, epistemological or ontological grounds as they are most often described through the international discourse on Indigenous knowledge. Or they can be viewed in terms of their entanglements, synergies, and the shared conversations that can occur around the common interests explored through them. [emphasis in original] (Nakata, 2010, p. 55)

Science, says Nakata, "can be used as another weapon for Islanders to wield in our own interests" (2010, p. 56). And that is precisely how I view conventional systems thinking re-theorized through this and other Indigenous standpoints, as tools that we can use to uplift our communities. It is up to us Indigenous scholars, says Nakata, to "develop a wider discourse that relates these two knowledge traditions for our own purposes" because as he points outs so clearly, we live "at the interface of different knowledge systems" (2010, p. 56). Whenever we fall back into an us/them logic, argue Carey & Prince (2015), we risk an "unwitting re-inscription of the binary logic that the cultural interface should help us overcome" (p. 274) which they argue McGloin (2009) sometimes does in her analysis of the cultural interface. The labeling of 'whiteness' for instance actually teaches "what amounts to a rejection of self – a self that only exists in its imperialist inflection" which is "irresponsible" (Carey & Prince, 2015, p. 275). I concur, the end point of decolonizing work is not to make white people aware of their 'whiteness' and its privileged social location, that is not an end-point in itself. It's about their healing too.

Conclusion: Complexity

> What's needed are
> eyes that focus with the soul.
> What's needed are spirits open
> to everything. What's needed
> are the belief that wonder is
> the glue of the universe and
> the desire to seek more of it.
> Be filled with wonder
> (the late Anishinaabe writer Richard Wagamese, 2016, p. 105).

Soon after the first article was published, I was invited to share it with a Systems, Sustainability and Social Justice class at Presidio Graduate School in California. The class was assigned the article to read, and students prepared a haiku based on its content. Here are a few of those poems:

Two boats, one river
Teachings on the way forward
Lie within, the past
– Corinne

Decolonizing
These systems, maps, and language
To see we are one
– Will

So much to unlearn
What a brutal path we took
Thanks for publishing
– Jacqueline

Wisdom in action
Mother Earth healing spirit
Help us change the world
– Justine

Interconnected,
Indigenous practices,
Unite all beings
– Haley H

Two-column approach
Confronting my habit of thought
in the concrete
– Spencer M

Presencing, the state we experience when we operate from our minds, our hearts, and our will fully opened, may result in us connecting to reality from a much deeper place, from the source of emergence says my dear friend Otto Scharmer (2016). *Relational systems thinking* Indigenous standpoint theory proposes that that emergence is *mashkiki* (medicine) and that inviting the medicine to flow in the space between worldviews is healing. It is letting the medicine flow at the interface where two bodies of water come together. It's the interaction of opposite systems such as fresh and salt water, seen as "a magical source of creation" (Yunupingu et al., 1993, cited in Yunkaporta & McGinty, 2009, p. 58). Thus, I would characterize presencing and emergence as a magical source of creation, a space and place where poetry and telescopes (Mohawk, 2008) nourish our sense of wonder.

Complexity science challenged the Newtonian perspective in the West that all can be explained by the careful examination of the parts. Complexity science is not a single theory – it is the study of complex adaptive systems, the patterns within them, how they are sustained, how they self-organize and how outcomes emerge (Zimmerman et al., 1998). *Relational systems thinking* is an Indigenous standpoint theoretical framework that may enhance the many other theories and concepts within the highly interdisciplinary field of complexity science. Complexity science resonates deeply with many of the Elders, knowledge keepers and language speakers I work with, because it seems to resonate with our holistic ontologies, epistemologies, and cosmologies. Within systems thinking and complexity science, the West revitalized for itself what we have practiced intuitively for generations: relationality. We have a kinship system that is not human-centric. As Potawatami scholar Robin Wall Kimmerer wrote, "we don't have to figure out everything by ourselves: there are intelligences other than our own, teachers all around us" (2013, p. 58).

To practice *relational systems thinking* and tap into our sense of wonder and our complexity mindset, to transcend narrow self-interest, involves a tremendous amount of "inner work" (LaFever, 2016, p. 418) to release mental models (Senge, 2006) that no longer serve us.

> The one overall phenomenon that leads to an increase in mental complexity is when our existing assumptions about the world turn out to be insufficient or wrong. As long as our assumptions, our mental models of the world, our world view or epistemology is confirmed, there is no need to change it or make it larger and we do not grow much. But when we have to reconfigure our model, our world view to match reality, we grow. Especially, if we have to revise several assumptions at once and the pain causes us to thoroughly deal with ourselves and why we held a wrong or too simplistic assumption. (Andersen & Björkman, 2017, pp. 53–54)

My recommendation to you as you do this inner work is to ask your "invisible helpers" (Nabigon, 2014, p. 29) to interpret your dreams and your visions, to help you understand whatever emerges on this inner journey. "The inner environment is sacred because it owes its existence to an environment that is not physical in nature" (Stonechild, 2016, p. 73). Ask the *manidoog* (spirits) to guide you. Go out onto the land. "Ceremony is not just a ritual: it is a living encounter with Creator and the Spirit. All the rituals in the world will not take a person to ceremony because we need to go to ceremony through the heart" (Nabigon, 2014, p. 33).

> Even if at times one might be tempted to side with the more pessimistic view of the incommensurability of modern, Western, and Indigenous epistemes, I am convinced that the first step in encountering this complex question must consist of a willingness for transformation… this would inevitably bring with it the need for critically examining our current assumptions and presuppositions. (Kuokkanen, 2003, p. 270)

In common with the 'soft systems' described earlier by Dias (2008), *relational systems thinking*, helps us "*reflect on* [emphasis in original] the world in an integrated, systemic way" (Dias, 2008, p. 212). Be filled with wonder, make room for telescopes and poetry to dance together as you sense into the emerging future. Returning to relational accountability (Wilson, 2008) as a researcher, the importance of relationship must take precedence. In this essay I am in relationship with the spirit of an evolving Indigenous standpoint theoretical framework, and my methodology is the *dibaajimowin* of my current understanding. From a Western perspective my analysis would have broken everything down into its smallest pieces, a linear logic, but in that you are "destroying all of the relationships around it" (Wilson, 2008, p. 119). In contrast, I presented here an analysis of the whole, an intuitive logic, my journey of coming to know. It is a *harmonizing* account of the relational lessons I have learned (Bishop et al., 2021). Within Indigenous ways of knowing, we do not differentiate among the sciences, to separate history or mathematics or complexity science, "nor to take the physical away from the mental. The Anishinabe world is a unity of all things. We acquire knowledge from many sources: dreams, visions, the natural world, listening, observing and feeling the world around us" (Anderson, 2002, p. 304).

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