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Indigenous Elder William Commanda, Cognitive Cartography and Cybercartography

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Abstract

William Commanda (1913 – 2011), Indigenous leader, recipient of two honorary doctorate degrees, and subject of a thesis on his environmental legacy (Thumbadoo 2017), was carrier of wampum shell belts of Algonquin heritage; these are ancient mnemonic conceptual devices of spiritual, historical, narrative and record-keeping importance that underlie his cognitive mapping practice.

Cognitive cartography is a relatively new field of inquiry in the social sciences, initiated via cognitive psychology, and today, multidisciplinary research is undertaken by neuroscientists, geographers, anthropologists, computer and information scientists as well as psychologists. Research is dominated by location-based theories that explore how we acquire, learn, code, process, store and decode information related to the geographic world and how we use this knowledge to make spatial choices and decisions. Yet Indigenous thinking suggests that geographical acuity requires the intersection and integration of cosmic, temporal and spatial knowledge, and further, that this is of critical importance in these times of dramatic earth and climate change.

William Commanda was a much-travelled and respected Indigenous leader and canoe-maker. He identified himself as Mamiwinini; he translated this to mean we travel every day; we always move. Thus, motion played a critical role in his cognitive map. During contemporary times, guided by the prophetic heritage of his ancestors, embedded in the concept Ginawaydaganuc, Everything is related, he mapped his traditional homeland of North America, known to his people as Turtle Island, through numerous journeys, social and political activism, language and cybernetic influential storytelling, demonstrating reflexivity, performance, agency and geo-narrative animation. This paper, following the trajectory of post-representational theory, examines the role that two contemporary spatial and temporal cartographic innovations, the cybercartographic digital atlas (Taylor et al) and social media, and cybernetics play in integrating place, time and movement on the land, concomitant with interrelationship with the sensory, observational and experiential, in William Commanda's cognitive mapping practice.

Key Words: Indigenous Cartography, Cybercartography, Cybernetics, Mamiwinini (Nomad) Ginawaydaganuc (All is Connected), Relationality, Space, Time, Movement

1. Introduction

Maminiwini – A Nomadic Heritage

I am in the earth, wind and waters:

I am as the bird flies and the wind blows and the water flows

This heritage signifies several things to Elder Commanda

A sacred connection with the land

A special responsibility as caretaker of Mother Earthⁱ

Over the past decade, research has focused on the discourse and legacy of late Indigenous elder, William Commanda (1913 – 2011) and the thesis, entitled *Ginawaydaganuc and the Circle of All Nations: The Remarkable Environmental Legacy of Elder William Commanda* addresses “his approach to Mother Earth, environment and relational matters. For forty years, he was the carrier of three Algonquin wampum belts, critically important sacred and historical mnemonic teaching and record keeping devices, and was the longest known guardian of such an iconic Indigenous heritage and responsibility. He was awarded two doctoral degrees, one (doctor of philosophy) by the University of Ottawa in 2006, and the other (doctorate honorifique causa) by l’université du Québec-Outaouais in 2011. He was appointed Officer of the Order of Canada in 2008, this country’s penultimate honour (Desiderantes Meliorem Patriam). Carleton University named the Aboriginal Resources Centre Ojigkwanong after him in 2013, and the University of Ottawa created the Dr. William Commanda Hall in 2014, in acknowledgment of his contributions to the academic world”ⁱⁱ

This paper examines William Commanda’s cognitive mapping practice in the context of two contemporary spatial and temporal cartographic innovations within the evolving domain of Cybercartography, consistent with the principles of cybernetics: the cybercartographic digital atlas (Taylor 1997, 2005, 2014, 2019) and Facebook social media. It also examines his integration of place, time, movement on the land and prophecy, concomitant with interrelationship with the sensory, observational and experiential, in concert with his wampum heritage and responsibilities, to animate his global eco-peace community, the *Circle of All Nations*, as a bridge-building mechanism and interface to speak to the incommensurability between Indigenous and non-Indigenous knowledge systems on environment, relationship, critical social justice and peace issues. “He sought to integrate Indigenous thinking, environmentalism, activism, social justice and peace building, in order to both challenge agendas of colonial domination and environmental degradation, and also advance dialogue, reconciliation, healing and social change engagement amongst diverse players. William Commanda remains very much present in cyberspace to this day, (nine) years after his death. Multiple diverse voices from Canada and abroad demonstrate ongoing commitment to ensuring that he remains encore vivant, through their inclusion of him in considerations of critical issues of the day, in academic research, activism and social media communications”ⁱⁱⁱ

Cognitive mapping is defined as “a process composed of a series of psychological transformation by which an individual acquires, stores, recalls, and decodes information about the relative locations and attributes of the phenomena in his everyday spatial environment”^{iv} and cognitive theory is embedded in a multidisciplinary research, emergent from psychology, but now studied by neuroscientists, geographers, anthropologists, computer and information scientists as well as psychologists. Research is dominated by location-based theories that explore how we acquire, learn, code, process, store and decode information related to the geographic world and how we use this knowledge to make spatial choices and decisions. Fascinating research of the hippocampus of the brain explores temporal/spatial/episodic memory, and offers powerful and provocative insights into cognitive mapping and wayfinding. In his study of the movement of rats, Tolman, in 1948, presented the idea of the cognitive map to describe navigation through spatial environments^v; his findings suggested that movement through a maze, and wayfinding, was negotiated by cognitive rather than behavioral responses.

However, contemporary cognitive cartography is reductionist and normative in character and leans almost exclusively on so called “hard” Western science. We suggest that the dominant approach has much to learn from an Indigenous lens on the topic, which the Commanda example provides.

Indigenous thinking insists that geographical acuity requires the intersection and integration of cosmic, temporal and spatial knowledge, that this is emergent from an integration of four primary learning spheres of human beings, the emotional, physical, spiritual and mental, and further, asserts also that this trajectory to scientific knowledge is of critical importance in these times of dramatic earth and climate change. Thus, many believe that they bring a whole new dimension to research into cognitive mapping. Consequently, while drawing insight from emerging brain and neurological research, this paper is more focussed on implications of the spatial, temporal environmental and social justice priorities of William Commanda, as contributing to an understanding of his cognitive mapping practice and intention.

This is of tremendous importance in the context also of his *Circle of All Nations* work; here we are interested in an number of issues: the nature of the discourse and his continued directional influence upon it; issues of individuality and individualism in social dynamics; the nature and implications institutional, behavioural, conforming practice; and the capacity for cognitive reflexivity. It is conjectured that William Commanda’s life time of movement, as body in constant motion, (quite different from the realities of many Indigenous peoples confined to reserves or reservations, or with limited opportunity to move or occupy space in rural and urban settings marked with systemic and overt racism in colonized lands), supported him in his retention of the wayfinding and problem solving capacity of his nomadic ancestors who cognitively mapped the entire continent of North America. Thus our interest in this topic relates to both his cognitive spatial mapping as well as his mapping of conceptual thinking for a huge diversity of people now occupying the continent, in order to align them to a multidimensional Law of Nature cognitive map and to contribute to both knowledge and knowledge generation.

While Indigenous knowledge is frequently relegated to the category of traditional or local knowledge, we argue that it is fundamentally scientific: as Reyes discusses in “Cybercartography from a Modeling Perspective^{vii}” (Reyes 2005), maps are visual models of the geographical landscape where a geometrical language has been used for centuries to represent geospatial information; referencing Lobachevsky who in 1829 demonstrated that the Euclidean axiomatic geometry could only be established by observation, not by reasoning, she affirms Russell’s associated statement that geometry is an “empirical science base on observations^{vii}” and concludes that “Once knowledge is formalized in either mathematical or other terms, a reader might deduce wrongly that the frameworks have emanated from pure reasoning processes, rather than from empirical observations^{viii}” (Reyes 2005).

The Commanda thesis articulates this vein of thinking: “It is interesting to note that in Germanic languages, science means literally, to create knowledge. In *Making Social Science Matter*, Flyvbjerg notes that the formal generalization with western scientific research is only one of many ways people create and accumulate knowledge^{ix} (Flyvbjerg 2011). There are also the approaches that inform Indigenous ways of knowing. They include, for example, the experiential and empirical, the individual and collective process of observation, knowledge accumulation, collaboration and confirmation, and the ceremonial and relational, all consistent with the Laws of Nature. Since such knowledge was wrestled by William Commanda’s ancestors from the harsh and changing conditions of Wisconsin glacial retreat, and critical to life and survival, it was meticulous, Indigenous Law of Nature science. However, the thinking, ontologies and epistemologies of Indigenous peoples on environment and related issues have not been effectively integrated into the academic discourse on these topics. Despite rhetoric to the contrary, Indigenous thinking exists largely outside the current dominant discourse for a number of reasons, including because of the complex semantics and interplay of language, symbols, dream and logic^x.

Equating the spiritual dimension with religion, as Europe moved out of the Dark Ages and into the Renaissance and then Age of Scientific Rationalism and existentialism and reductionism, engaged also in its global colonizing enterprise, western knowledge streams dismissed the knowledge acquisition practices of Indigenous Peoples, including the foundational knowledge of the wampum heritage of the peoples of the Eastern Seaboard (not to be confused with later colonial appropriation and reconfiguration or reconstitution of the same to serve land negotiations or expropriations in

North American), and complex ceremonial practices and communication technologies were forcibly obliterated or dismissed.

This paper explores implications of Indigenous cosmo-geographical elements of cosmic orientation, ceremonial research and reflexivity, motion and oral storytelling in the cognitive mapping practice of William Commanda, and its potential relevance in times of unprecedented and fast shifting extreme weather, climate change, environmental degradation and crisis, now compounded by the Coronavirus 19 global pandemic, and racism, violence, challenge of institutions and civil unrest, across his homeland and beyond.

2. William Commanda and a few Conceptual Cognitive Configurations

Cognition is commonly understood as the mental action or process of acquiring knowledge through thought, experience or the senses; it includes attentional, memory, comprehension, judgement, evaluation, reasoning, problems solving and decision-making intellectual functions, use existing knowledge and generating new knowledge, and each of the subsets noted are under intense investigation in a number of disciplines. William Commanda unambiguously identified himself as child of *Mother Earth*; he was also *Mamiviniwi*, and this relational interface informed his (w)holistic and integrated thinking at every turn. Entrenchment as human animal transforms the playing field, says Ian McCallum, who introduces this dimension of thought into philosophical contemplations, following his immersion into the lives of the San Indigenous Peoples of Southern Africa, and who positioned his findings as ecological intelligence (McCallum, 2008)^{xi}. This orientation challenges European notions of religiously inspired dominion over earth.

2.1 Ceremony as Reflexive Research into Cosmo-Geography

In *Research is Ceremony: Indigenous Research Methods*^{xiii} (Wilson, 2008), Shawn Wilson discusses relationality, respect, ceremony, reciprocity and storytelling and Indigenous research paradigms. We reframe the title of his book to *ceremony is research* to approximate William Commanda's approach; in a fundamental way, this constituted one critical component of his cognitive mapping practice. It is the zone of deep reflection, reflexivity and learning. Ceremonial practices were grounded entirely in the laws of nature and cosmo-geography. The Algonquian language reflected the cosmic locational and temporal orientation and prioritization as follows:

With respect to time, the three primary cosmic bodies, Moon, Sun and Earth are named as time markers in Algonquin and their names reveal the profound temporal knowledge of the people from ancient times. William Commanda's Algonquin word for Moon is *Tibi Kizis*; Sun is *Kitchi Tibi Kizis*. Moon demonstrates the smaller monthly time cycles in her being, thirteen of which constitute the big time cycle. Sun controls the big yearly time cycle. Sun takes identity from Moon and is the Big Moon. It is Moon's magnetic connection with Earth that renders interconnection with cosmic most significant, and it also informs the twenty-four hour time cycle. Earth manages the twenty-four hour cycle; Night was *Tibikut*, and Day, *Kijikut*. There are further refinements in the temporal knowledge, which simultaneously demonstrates cosmic spatial knowledge. For example, in the vast sea of stars, *Enogosuk*, some are the winter stars, *Adawomok*, only visible during specific months of the year. William Commanda's own name is linked with the planet, and reveals the ancient knowledge of the differences between planets and stars.

Likewise, constellations were studied, named and embedded in legends. The naming of the continent Turtle Island is a semiotic attestation of both spatial/temporal knowledge and of the relational associations of Turtle and Moon. As noted, Turtle is a powerful symbol that most tribes across North America use to associate with their homeland, and the image is included in rock art across the continent. Turtle's shell markings align relationally with the traditional Algonquin calendar of thirteen Moon cycles each year, and approximates the days of a moon cycle. Moon's magnetic powers impact Earth's magnetic core, the force of gravity, tidal movement, spawning of fish, plant growth cycles, and the migrational cycles of many creatures, including the Turtle. For a people whose lives were charted by water,

from the time of the retreat of the Wisconsin glacier and the formation of the Great Lakes and rivers, the Moon was a most significant cosmic entity^{xiii}.

The sacred axis iterated the core spatial and temporal tenets of geography as articulated and evidenced in the earliest of human spatial/temporal mapping artifacts from around the world^{xiv} (Laffon, 2010).

Without delving into the details of any particular ceremonial practice, it is clear that the cosmic bodies, solstice, equinox and eclipse, meteor showers, cardinal directions of east, south, west and north, key elements of fire, earth, water and wind, rock formation, plant and animal life, the seen and unseen elemental energies, are embedded in a deep relational knowledge web, articulated by William Commanda as *Ginawadaganuc – all is connected* and it was this foundation of life that was studied intensively. This focus, integrating time consciousness, drew in energies of ancestral bodies and future generations in the deliberations of people, both individually and collectively. The conceptual medicine wheel permitted varying degrees of access to such vast bodies of knowledge, and it demanded deep engagement of the emotional, physical, spiritual and mental. The knowledge and wisdom generation process was not doctrinal but experiential, motional and ephemeral.

It was also mathematical and numerical, and this is revealed in the knowledge of the Laws of Nature of William Commanda's father Alonzo Commanda, described, with good reason, as *The Best Guide in the World* by writer John Durant in the December 23, 1944 *The Saturday Evening Post* article^{xv}. Respect for his knowledge deepened for his son one January, when in the mid-winter cold, his father told him that if he had any cut wood in the bush, he should move it out, because the area would be flooded on February 24 (that would have constituted a very early spring thaw). To the day, his father was right. That precision of the prediction gave William Commanda great pause for reflection on his father's knowledge.

Others reflected on his knowledge more recently. The 2017 flooding throughout the Ottawa River Watershed immediately brought Grandpa Alonzo Commanda's prediction about the notable 1974 floods of the Gatineau River in Quebec to the minds of William Commanda's son-in-law, Tommy Dewache, and his daughter, Evelyn Commanda Dewache, and Grandpa Alonzo's granddaughter Daisy Mary Commanda Jacko, separately (Personal Conversations, Spring 2017). In the fall, he had said, next June, the lake will be flooded and you will be going around in canoe. He died in March. In June, the historical 1974 flood came. William Commanda's own log cabin meeting house was swept away and he did in fact canoe where his home now stands. It is interesting that the dams upstream had contributed to the flooding (somehow, Alonzo Commanda had also included their impact in his prediction). What are the implications of paying attention to this Indigenous way of understanding the Laws of Nature? The Government of Canada's website on Environment and Climate Change Canada notes the following: "The Gatineau River, a major tributary of the Ottawa, drains approximately 26,000 square kilometers of the Gatineau Hills lying north of Ottawa- Hull. It rises to an elevation of 490 meters above sea level and flows into the Ottawa River at Pointe-Gatineau. The river has been extensively developed for hydroelectric power and is also used in log driving operations. Between May 14 and July 2, 1974, the Gatineau River underwent its most serious flooding since the turn of the century"^{xvi}

Cybercartography, integral theory and social cybernetics provide an interface for the exploration of Indigenous approaches. In their paper entitled, *Exploring the Concept of Cybercartography*, (2005) Eddy and Taylor examine Integral Theory, as developed by Ken Wilber, and its relevance to understanding information, generally presented as data, knowledge, facts and interpretations, to determine their relative influence in the cybercartographic process. Following their analysis of Wilber's holonic whole/part relational projection, they suggest further that Integral Theory presents as a transdisciplinary framework for synthesis across disciplines^{xvii} (Taylor, 2005).

In addition, they note that information constitutes the content of the communications but it operates within a context that is ephemeral and is processed via an interface termed points of contact (Eddy 2002), Taylor (2003). Artifacts are created to extend function of communication, and, Eddy

and Taylor discuss further, information and communication media “from stone writings and pictures, development of languages as script, to books and libraries, to radio and television, to advanced computer network^{xviii}” (Eddy and Taylor, 2000) serve as the material holonic artifacts of human information processing and communications. Today, the online world is fast becoming the global digital connections lifeline, and there is an explosion in creation of new holonic artifacts to facilitate communications.

We suggest that the ancient wampum and other communications technology, including cyber, employed by William Commanda constitute complex holonic artifacts; while his communications repertoire has not been extensively analysed yet, it clearly occupies a unique bridge building space in the contemporary global *Circle of All Nations* informal eco-peace community, and is identified as a profoundly influential cybernetic directive communications device of our times.

2.2 Language, Orality, Semiotics, Storytelling and Pentimento

William Commanda’s understanding of land emerged from his orality and language emergent of his cosmic world. Language was critically important to him. Countless people have affirmed how seamlessly Algonquin, French and English languages were used by him and his wife in their daily communications. *Circle of All Nations* prepared a commemorative poster on his influence protection and preservation of Indigenous Language on the occasion of the United Nations 2019 Declaration on Indigenous Languages.

Algonquin is a land-based language, wherein, according to him in his analysis and articulation, the land itself, its sounds, its physical, geological and biological realities (rocks, stone, animal, plant and the elements) shaped and determined the evolution of the language. The generic language which emerged with the Algonquins of the Ottawa River Watershed was transmitted across the country by his nomadic ancestors, and he emphasized that there were 84 Algonquin Nations across North American that spoke dialects of the mother tongue. His Algonquin friend historian, researcher and writer, Evan Pritchard^{xix} drew him a map of North America identifying these tribes on paper. William Commanda was raised on the ancient Algonquin language. While confined to French and English in his communications with others, he nonetheless performance-communicated his own much vaster understandings of truth and meaning to complement his words. The import of his words and other dimensions of communications warrant careful examination to grasp an understanding of the depth of his thoughts and by extension, this applies to the understanding of Indigenous peoples and their communication styles. He, however, was a virtuoso performer and as is still evidenced in social media, drew a diversity of people into his “web” of communications^{xx}.

Language was one means of communication in William Commanda’s discourse; but he employed many more. These were discussed in the Commanda thesis:

The actants in his discursive repertoire that typically accompanied all his public communications reveal an agency of force beyond the acknowledged material world. Generally drum song, reflective of the heartbeat of Mother Earth, alerted visible and invisible beings to the activity on hand, and drew the attention of all to the focal point: the doorway into the moment, place and experience. For William Commanda, after the energetic awakening of the drum, the formal ceremony commenced with a smudging ceremony. Here, one of the four sacred herbs, for him generally sage, was burned in a shell, and his feather used to fan the smoke around a person. This gesture of cleansing, protecting, balancing, healing and focusing was accompanied by words in Algonquin. For podium type meetings, he smudged a group from afar. But he generally preferred to have people assembled

in a circle, and he liked to have them turn around in a full circle, following the direction of the Sun (east to south to west to north: the heliocentric directional spatial measure). He thereby encompassed them in a circle of groundedness that also emanated temporal, cosmic and intangible connection in the smoke fanned into space by the mobility and temporality of the feather. As individuals drew the smoke to their eyes, ears, mouths and limbs, they were reminded to focus their senses on the matter at hand; thus, intangible, physical, mental and cosmic lines of communication were threaded together in this initial energetic threshold into the communications. This resonated for individuals and groups, irrespective of background, attesting to a reach to some common denominator in the psyche; I have witnessed the impact of William Commanda's smudging ceremony thousands of times with multiple audiences. In addition, there was dress, sometimes traditional and iconic, sometimes not, but always, distinctively WC's. In particular I note his use of his headbands, perhaps implying an authority from above or beyond, and rings, perhaps denoting energetic inter-connections^{xxi}

A growing body of neurological and cognitive research aligns the storytelling trajectory with the evolution of the human being and suggests that the brain is hardwired to storytelling. (The research also suggests the brain is hardwired to movement).

Jamie Sams provides an Indigenous perspective on the importance of Storytelling in *Sacred Path Cards, The Discovery of Self Through Native Teachings* (1990), and we present the following statements to contextualize and accredit the Indigenous lens into storytelling, as articulated three decades ago. According to her,

"The Storytellers of Native America are the Guardians of our history and our Sacred Traditions. They ensure the future expansion our children will bring to the Earth by keeping our ancient knowledge alive ... The Storytellers are the bridge to other times and ancient teachings ... Medicine Stories are told and retold year after year to keep the teachings of the People alive. Every story has many meanings and relates to life in a multitude of ways. Each time a story is retold, the level of understanding grows and expands along with the maturity of the listener. The same events inside a story may be repeated many times in different ways to allow listeners to discern how the story applies to them. The Red People's way of thinking is very different from that of other races. We do not tell others what the true message is in our Medicine Stories but rather allow people to use their individual gifts of intuition and observation to discern what the true meaning is for them... (Further, she adds) Memory is a special part of our Native American Tradition. Since our histories are passed down orally, the remembering is an art. Every herb, plant, or flower used in healing must be remembered for future generations. Every dance, Ceremony, ritual, initiation, and teaching must be committed to memory. All Tribal Laws and prophecies must remain intact for future generations...Clans had historians who held the oral history of an area of expertise in their memory ... A Medicine Story that was told in a timely manner could end arguments, change the course of a life, bring courage in hard times, or encourage the youngsters to take on new responsibilities... Many lives are influenced by another's story... The wisdom of the storyteller is part of the art of remembering. The Storyteller is associated with the idea of expansion on multiple levels and the encompassing of new ideas^{xxii}" (Sams 1990).

Bridging cultural divides is extremely challenging and crucially important in a globalized reality. One needs to be concise and succinct to express complexity, and sometimes it can be helpful to use one word to express that complexity and then to deconstruct it. Pentimento is an Italian word that refers to a visible trace of earlier paintings beneath a layer or layers of paint on a canvas. It is the reemergence an older image that has been painted over; the bottommost layers can retain energetic presence and

agency comparable to the ones on top. An understanding of pentimento can contribute to an understanding of the vital presence of past in Indigenous oral knowledge structure and communications; this is an obvious challenge for many non-Indigenous thinkers. The pentimento idiom has been animated repeatedly in *Circle of All Nations* peace building workshops (and articulated, for example, as the FROG principle, in the book, *Learning from a Kindergarten Dropout*^{xxiii} (Thumbadoo 2005). Thus, in pentimento fashion, for example, one can see a layering of colonization leading to land and resource depletion, to water contamination and to health crises, with each of the preceding actions still performing and exercising agency. At this point, suffice it to present the concept of pentimento as layered visualization of the four segmented components of the *Circle of All Nations* medicine wheel conceptual tool. Further, while each component complements and builds on the others, each also holds an integrity that can function autonomously. Systemic constellation work, another cognitive interest of William Commanda's, reveals resonance, reverberation, layering and relationship in zones or systems of difference or conflict; the origins of this work emerges with Zulu Indigenous roots. These ideas illustrate the nature of the cognitive thinking of people like William Commanda.

2.3 Motion

The root of the *cyber* concept allows us to argue that the mapping/journeying/steering motif begins with William Commanda's birth, and key trails emerged years before he became embedded in the modern cyber world. His birth name, *Ojigkwanong, Morning Star*, aligns him with the cosmic cycle of movement, differentiating planets from stars, and references the primacy of the sky world in the ancestral knowledge generation process; from Lac des Etoiles in Quebec, they studied the star creation factory of the Orion's Belt Constellation of the Milky Way spiral, and observed the Perseid meteor showers annually. Motional spatial understanding was determined by and emergent from the name of his people, *Mamiwinini*, and his identity was commensurate with the idea of map in motion; nomad is a limited and circumscribed translation of the word. These were the people who were in motion, and who moved with great regularity; motional was inextricably intermeshed with the temporal. From cosmic, cyclical, spiralling orientation to identification of self as *Mamiwinini*, and to the iconic symbol of birch bark canoe, the inherent theme of movement is the life-breath of his discourse. His temporal and spatial embeddedness incorporated elemental and motional *Law of Nature* knowledge. His performance mapping was integrated in and emergent from motion, orality and narrative. Thumbadoo recently showed William Commanda's eighty two year old niece, Mary Daisy Commanda Jacko, a map from his files of Commanda Lake, (now Papineau Labelle) home of their maternal ancestor Pinokwe Commanda in the 1700s. She immediately saw a body in motion in the image, and said Mamiwinini is running; of note too is the fact that William Commanda said to Thumbadoo that his name was *Nincommanda, he speaks for the others* (personal conversation, 2009); the image shows human emergent from land as water, and the motional and storytelling elements are integrated in identity.

Over the past two decades, over the course of countless journeys and constant and exposure to oral and written materials, research has confirmed the very sophisticated and contemporarily relevant nature of William Commanda's spatial and temporal knowledge and thinking. The speech of oral traditions is quite different from the spoken language of literary traditions, and multiple elements besides words constitute language and meaning; it is also motional and can follow many side roads in journeying to a point. He lived over the course of a century of tremendous transition from the industrial age to the information age, and his spatial understanding incorporated elements of environmental knowledge, journey and transformation of self and others on the land. In this sense, then, his mapping was not merely traditional with associations of primitive performance mapping; in fact it resembles and reflects the emergent mapping of Turnbull's understanding of the cyberworld^{xxiv} (Turnbull 2007).

Motional spatial understanding was determined by and emergent from the name of William Commanda's people, Mamiwinini, and his identity was commensurate with the idea of map in motion. Nomad is a limited translation of the word. William Commanda's temporal and spatial understanding incorporated elemental and motional Law of Nature knowledge. His performance mapping was embedded in and emergent from orality and narrative. William Commanda's storytelling mapping included his wampum heritage and the Seven Fires Prophecy. The migration motif of the prophecy resembles and articulates the epic and odyssey. The prophecy traces the journey of his peoples over time and space, as charted in metaphor and physicality, and it also articulates connectivity at multiple levels, including with turtle shaped islands. This is consistent with Turnbull argument that "What nearly every culture seems to share, in one form or another, is the recognition and celebration of the hodological or topokinetic in their mythologies, ontologies or epistemologies, and especially in their stories, songs and maps. This commonality is based in the connectivity of trails – the creation of meaning through marking and linking^{xxv}" (Turnbull 2007).

Our imagistic spatial/temporal explorations reveal parallels with key Indigenous words and ideas pertaining to cosmic, evolutionary, ancestral, bio-diverse, trickster (chance/uncertainty) and motional themes in the production of his Indigenous Law of Nature discourse. Knowledge creation was sensory, experiential, experimental, observational, collaborative, cognitive and generative, and emergent from time/space, movement, language and the Laws of Nature. A joke that William Commanda liked to share can serve to transition us to an analysis of the empirical in his discourse. The tourist asked the guide, do you know where we are? No, said the guide. Well, you are no good, said the tourist. Well, I am not lost! replied the guide^{xxvi}.

2.4 Map Priests, Jessakids Shaman, Wampum, Prophecy and Syntropy

Crampton posits Geographical Visualization as a questioning or sense-making activity, as compared to the Map Communication Model that is answer-delivering. He illustrates this point by drawing on the concept of cartography cubed: wherein traditional cartography emphasizes public use, low interactivity and revealing knowns, while visualization emphasizes private use, high interactivity and exploring unknowns^{xxvii} (Crampton, 2009).

Following Crampton's discussion of the Map Communication Model, I note that in the context of doctrinal religions, the force-field out of which the map emerges is the ideological backdrop created by the god-cartographer; the god-cartographer authorizes the map-priest; the map-priest instructs the map-user; the map user will "get it" and be responsive depending on how well he is indoctrinated in the ideological force field; so who is the god-cartographer who creates the force-field? Who is the map-priest who interprets the force-field? Considerations along these lines, while not located in the theory discussed, nonetheless preoccupied William Commanda. Consider, for example, that the biblical creation story does not reflect accurate knowledge of the evolution of the earth, and that it is only within the past century that science has come to gestimate the age of the earth with accuracy. The three dominant and related religions, Christianity (including Catholicism and its post 1500s reactionary off-shoots of Protestantism, Calvinism, Presbyterianism, Puritanism, Lutheranism etc.), Islam and Judaism, are doctrinal. The god-cartographer grants man dominion over earth and the map-priest interprets what this means to the map-users.

Eddy and Taylor reference Wilber's vision-logic concept to denote higher and deeper level cognitive capacities that transcend (and include) rationalism and modernity into postmodern forms of representation, discourse, epistemology, expression, and being. This philosophical concept combines mindfulness (the non-judgmental review of personal actions) and introspection (review of personal values and beliefs) as a means of attempting to comprehend and integrate the fullness of the mind and the universe. Vision-logic is deemed essentially translational and seen as emerging as the next wave of human consciousness. They conclude that "This creates opportunity for Cybercartography to advance itself as an important tool for this vision-logic capacity, as a means to help integrate, synthesize, visualize, and communicate very complex information in ways that go much beyond the

conventional use of the geographic map, thereby giving maps and mapping a new level of application and meaning in the information era^{xviii}” (Eddy and Taylor, 2005).

In William Commanda’s Indigenous world, the cosmic force-field was accessed directly by individuals and communities as cosmic beings themselves. Further, in addition to knowledge about Earth, as children of Mother Earth, they were deeply and organically committed to her protection and preservation. The Jessakids were the ancient Algonquin shaman researchers who left records of their reflections on the natural world in their rock etchings and paintings (petroglyphs and pictographs); they were amongst William Commanda’s ancestors of the Ottawa River Watershed and influenced the thinking of both his maternal and paternal family lines directly.

William Commanda’s wampum heritage constitutes an ancient epistemology (living oral learning and teaching processual mechanism) in the language of the Sacred Wampum Shell Belts, ancient spiritual/sacred artifacts and mnemonic devices reconciling the invisible/intangible and material, prophecy and history, the temporal and spatial. The wampum heritage of William Commanda and his ancestors of the eastern seaboard was of critical importance because it relayed associated and abstracted information about interrelatedness, borderlessness, permeability, reciprocity, balance, and prophecy. Such information was also accessed by other Indigenous peoples across the world.

A close examination of William Commanda’s public practice, performance mapped at multiple levels, over the course of several decades, and more intensively over the past forty, reveals power generation via interaction with the unseen force. Here he asserts connection with the procreative, evolving, emergent, multidirectional and temporal dynamic. William Commanda became Keeper and Carrier of three sacred *wampum* belts of spiritual, historical and political significance in 1970, the Seven Fires Prophecy, Three Figure Welcoming and the Jay Treaty Border Crossing Belts. William Commanda is the last and longest known guardian of the ancient mnemonic *Wampum* prophetic oral storytelling and animative record keeping heritage of his *Mamivini*/Nomad Algonquian ancestors; he held the sacred *Wampum* Belts for 40 years. The following excerpt from the book, *Learning from a Kindergarten Dropout*, provides a contextual description:

From the earliest of times, William’s ancestors along the eastern seaboard of North America created belts woven with beads made of the purple and white shells of the marine sea creatures. The word *wampum* emerges from the Algonquin word *wampumpeage* which described white shells and or strings of shells; its roots link also with the words *waban* and *wabanpaog*, referring to the dawn or the first light of the east, and the eastern people, the Algonquians. The belts that William carries are predominantly purple; the beads were made from the shell of the quahog. It is not clear how they fashioned the thousands of tiny beads before the age of industrialization, but it is well known that they created many beautiful belts that served as devices to record their stories, legends, prophecies and agreements. These served both as a living record of a commitment and also a means to recall the messages^{xxix}.

The wampum belts were the mnemonic devices or memory awakeners, ideographic rather than phonetic. They complemented language and oral delivery in communications. Thus, it is suggested that Wampum was spirit text, only accessed and understood by certain people. It is interesting that the Seven Fires Prophecy itself warns about false prophets.

His wampum heritage provides a conceptual lens into the structure of William Commanda’s epistemological project, and, as discussed in the thesis, the trajectory of syntropy affirms the prophetic underpinnings and the motional generation of negentropy to counter entropy in a manner parallel to the law of life evident in water. In the language of syntropy, water absorbs syntropy from the quantum level and materializes it at the macro level, and that this critical law of the universe, the law of syntropy, a Law of Nature, can only be seen operational in the presence of water. It affirms retrocausality, the future to past cause of effects because it demonstrates life force energy in its complex, cohesive regenerative, organizing structure, quite different from the entropic, energetic dissipation of past to future, cause to effect, force of causality^{xxx}. However, if one is alien to this life force of nature, how can one then be impacted by this enigmatic cybernetic feedback loop? Alerted

by the Laws of Nature, articulated in wampum prophecy (what Zulu shaman, healer, writer artist and mapper, Credo Mutwa, described quite simply and brilliantly as early warning signals^{xxxii}), William Commanda was believed by many people of diverse backgrounds to be the Carrier of the Seven Fires Prophecy at the time of the unfolding of the Seventh Fire because of the authenticity of his voice as prophet. Given the escalating global crisis on every turn, more and more people believe this to be so today.

3. Cybercartography, the Cybercartographic Digital Atlas, Cybernetics and Social Media

3.1 Cybercartography

Cybercartography is one of the modern theoretical approach selected to examine the ongoing presence and relevance of William Commanda in knowledge generation in contemporary times. Cybercartography presents tools to explore the William Commanda cognitive mapping experience as a multi-dimensional/multileveled/multi-pronged, vibrant, cognitive and sensory interface, much more closely approximating the rhythms and rules of nature, as incorporated in the Indigenous animation of mapping. The cybercartographic digital atlas and the internet, and social media, in particular Facebook, constitute key technical and processual tools to interrogate William Commanda's timeless moccasin-telegraph performative mapping.

Fraser Taylor introduced the term Cybercartography at the 1997 International Cartographic conference in Stockholm^{xxxiii} (Taylor 1997) to describe the transformative innovations taking place in the field of cartography, stating Cybercartography will see cartography applied to a much wider range of topics than has traditionally been the case [...]. It will also utilize an increasing range of telecommunications networks such as the Internet and the World Wide Web. It will be multi-dimensional cartography using multimedia formats and is more likely to be an integral part of an information package than a stand-alone product. Cybercartography will also be highly interactive and will engage the user in new ways. In organizational terms, it will see new partnerships being created between national mapping organizations, the private sector and educational institutions and the products of Cybercartography are likely to be compiled by individuals from very different disciplines and professional perspectives working together.

By 2003, he had articulated Cybercartography as “the organization, presentation, analysis and communication of spatially referenced information on a wide variety of topics of interest and use to society in an interactive, dynamic, multimedia, multi-sensory format with the use of multimedia and multimodal interfaces”^{xxxiii} (Taylor 2003:404), with seven major elements: multimedia, using vision, hearing, touch and eventually smell and taste. Its use demands interactivity; online spaces are cyber spaces for a new kind of mapping, registering the shift from a publishing/presentation model in mapping to a participative/processual performative model, permitting multiple narratives. In 2014, *Developments in the Theory and Practice of Cybercartography*, (Taylor and Lauriault, 2014) was published, inclusive of much new material in the field; the subtitle, *Applications and Indigenous Mapping* is an affirmation of the statement that (t)his volume is based largely on an entirely new practice developed since 2007 in cooperation with Indigenous Groups in Canada^{xxxiv} (Taylor and Lauriault, 2014). Since that time both the theory and practice have evolved substantially, and much of this evolution has been the result of interactions with Indigenous communities.

In 2019, Cybercartography was redefined as “... a complex, holistic, user centred process which applies location-based technologies to the analysis of all types of topics of interest to society and the presentation of the results in innovative ways through cybercartographic atlases. A cybercartographic atlas is a metaphor for all kinds of qualitative and quantitative information linked by location and displayed in innovative, interactive multimodal and multisensory formats”^{xxxv} (Taylor, 2019)

3.2 Cybercartographic Digital Atlas

In the 2019 redefinition of Cybercartography^{xxxvi}, Taylor argues that the process, by which Cybercartographic atlases are produced are equally, if not more important, than the products and he notes that this evolved as the result of giving Indigenous mappers real power in the creation of atlas; very different perspectives emerged as they decided what was to be included in the atlases and how to tell their own stories. He points out that while some may have viewed Cybercartography as one form of web based cartography inclusive of critical cartography, crowd sourcing and volunteered geographic information, in fact from the outset, it has not been primarily a technology-based approach. Quite different from Geographic Information Systems and Geospatial Science, where the drive in geomatics is reductionist and normative, with Cybercartography, at least half of the central ideas are non-technical; interaction with Indigenous thinking and Indigenous knowledge have taken these non-technical elements to new and important levels and these new directions have also led to new theoretical thinking. The interactive archival functions of the atlases are also important ones, especially when dealing with the knowledge of elders and other aspects of Indigenous knowledge that are in danger of loss or erosion, since preservation and on-going reflection and research are possible with the community controlled direct source data. Cybercartography is evolving as a sophisticated integration of theory, practice and technological development with a wide range of partners comprising Indigenous, communities, organizations, academic researchers, governments and private sector.

Although the formal definition of Cybercartography has changed, the six central ideas which underpin atlas creation are still relevant. These are:

- Individuals use all of their senses when observing what is around them. Cybercartography is exploring the use of all five senses and is now moving into affective issues to include emotion. In Indigenous mapping where storytelling is of central importance, sound, especially narration, is being widely used, as well as is music.
- Individuals have different learning preferences and prefer teaching and learning materials in different formats. Cybercartographic atlases provide the same information in multiple formats. For Indigenous mapping, narration has proven to be the format best suited to the informal learning process of transmission of information from the elders, which is of central importance. For formal education in a school setting, vision and text are more popular although selective use of narration is still important. Educational theory suggests that individuals learn best when they are actively rather than passively involved. Cybercartography engages and facilitates interaction. Cybercartographic atlases include a wide variety of representations of Indigenous community life, including art, music, place names, photographs, videos, ceremony, and socioeconomic and cultural activities, both past and present. Special attention is given to the design of user interfaces to facilitate interaction.
- The social media revolution has given people the power to create their own maps and narratives. The Nunaliit cybercartographic atlas framework is a data management framework that allows Indigenous communities to enter the information they consider important from a community perspective, which is often quite different from that which outsiders would consider important. The framework is open source, provides a built-in meta data structure for the information and does not require special knowledge to enter the information. After a few hours training, community members can learn how to do this. Mastering Nunaliit is no more difficult than using the ubiquitous smart phones now common in Indigenous communities, especially with youth.
- Many topics of interest to society are complex, and the same set of “facts” on issues of interest to Indigenous communities such as environmental change and the health of species such as fish or caribou are open to a number of interpretations. Cybercartography allows the presentation of different ontologies and narratives on the same topics without privileging one over the other. Indigenous communities want their knowledge and experiences to be treated as equally important to that of western science, and Cybercartography allows this to happen. Traditionally, the map was an authoritative source of information, and what was mapped and

how that was represented lay in the hands of those producing the maps who were almost without exception from outside the community.

- As the above comment suggests, traditional cartography was supply driven. National mapping agencies supplied definitive and authoritative maps which decision makers and others used. Technological change has more recently allowed a demand approach. Cybercartography takes this one step further and empowers individuals and communities to create their own maps, including the choice of what to map or not map. Cybercartography is democratizing mapping in new ways. Indigenous peoples, until recently, have often been largely “invisible” on maps or have been represented by others. Cybercartography gives voice to Indigenous peoples and other community groups both literally and metaphorically^{xxxvii}
- The Cybercartographic digital atlas provides innovative technology for the place and space based presentation and examination of the multifaceted Commanda discourse, both the elements generated over the course of 98 years, and then their ongoing presence since his death in 2011, in particular his assertion of intangible, sacred relationship with land in his *Circle of All Nations Asinabka/Sacred Chaudiere Site Legacy Vision*, documented in detail in the archival repository in his website www.asinabka.com; here the specific approach involves a time-based lens scrutinizing aspects of his work. However, the digital atlas projects interactive multimedia dynamism with the locational storytelling nature of the archiving.

3.3 Cybernetics

While *cyber* is a word associated with a new phenomenon, the internet, it is actually derived of the ancient Greek roots of *I steer, drive, guide, act as a pilot*, implying being good at steering, being a good pilot, linked with notion of governing that Plato introduced in his discussions of the art of science and rearticulated in the 1830s with the French *cybernétique* as *the art of governing*.

In 1948 Norbert Wiener associated *cybernetics* with systems comprising structure, constraints and possibilities; these incorporate a closed signaling loop, originally referred to as a circular causal relationship, where action within the system generates change in its environment and that change is reflected in the system in some manner (feedback) that triggers a system change. Such feedback was as important for machines as people. It is this reflexivity and reiteration that is evident in both Indigenous petroglyphs, pictographs and stone tables, as in the cognitive mapping practice and wampum storytelling of William Commanda, as he engaged and integrated message, messenger, information, communications, listener and semiotic and actant elements in his *cyber* discourse. Norbert Wiener also anticipated the modern use of the word *cyber*, when, in 1950, he stated that “Society can only be understood through a study of the messages and communication facilities which belong to it; and that in the future development of these messages and communications facilities, messages between man and machines, between machines and man, and between machine and machine, are destined to play an ever increasing part (1950:25)^{xxxviii}. Wiener noted further that communications and language are inseparable, and the relevance of language issues in cybernetics are not only for people or living creatures but also for communication between human and machines or among machines themselves.

Carmen Reyes discusses geo cybernetics in the context of cybercartography (Reyes in *Cybercartography: Theory and Practice* Taylor Ed. 2005); cybernetics is relevant to mechanical, physical, biological, cognitive, and social systems. This is consistent with the pentimento concept and the entropic/syntropic/negentropic and systemic themes associated with William Commanda’s *Law of Nature/Wampum* agency and *Ginawaydaganuc* multi-dimensional relationality (Thumbadoo), and provide the theoretic framework to support examination of his work and thinking.

3.4 Social Media

In addition to his own organization of conferences and events to share his messages, William Commanda travelled globally extensively throughout his life, and with growing urgency towards the end of his life, to register his concerns and warnings about the looming environmental crisis. Social media has also been used extensively to animate the Commanda discourse. From the time of the creation of his first website in 2000 and the *Circle of All Nations* on-line blog posts, he has been known

as the dot.com techno elder, and from 2009, he was part of the emerging Facebook world. Since his death, and in the absence of the continuation of his land-based gatherings to build relationship and community, *Circle of All Nations* maintains several Facebook pages to inform the public of his environmental and peace building passions. It also hosts regular events aligned with cosmic cycles of the solstices and equinoxes. These activities are designed to reach a diversity of people, attract new people, profile co-created efforts, and articulate the relational priorities and potential of the *Circle of All Nations*.

The following ideas were presented in his thesis in 2017: this *cyber* domain permits a new means to scrutinize the ongoing relevance of the Commanda approach to art and creativity and the spiritual dimension, environment, peace and related social justice matters, and his teaching and knowledge sharing and knowledge generating capacity through exploration of:

- a) land based language and symbolic imagery (petroglyphs, pictographs, canoe motifs, as well as contemporary contributions of his *Circle of All Nations* community);
- b) William Commanda's use of the *Circle of All Nations* as a zone of encounter and permeability to address incommensurability and facilitate respectful dialogue on challenging matters of contemporary importance;
- c) photographic reflection on the intangible yet compelling voice of space and place, giving Laws of Nature their esoteric presence in academic study; and
- d) animated and constant contemporary social media engagement with William Commanda and his ideas^{xxxix}

Much has happened since then that confirms that William Commanda and the *Circle of All Nation* remain a live presence in social media, with significant memories, photographs, videos or report having the capacity to draw responses from hundreds or thousands of people, and via the technology, reach many others.

However, the current global Coronavirus 19 crises has extended its capacity, potential and reach tremendously in both dynamic and archival ways, and new outreach involving agency and deliberated outreach has included an informal but focused educational component. The cybernetic steering elements of his discourse and legacy are visible here and will be examined in the outcomes segment of the paper.

4. Cognitive Cartography and Syntropic Animation: *We Make the Road By Walking It*

William Commanda travelled widely across the continent and globe, visited and named sacred sites, and this work, together with an exploration of his canoe heritage as master builder, will be the subject of a more intense study of his cognitive mapping discourse, which will complement this paper. At this point, we conclude the paper with an outline of recent work as evidentiary data reach of his cognitive mapping practice and strategy. Just once, he stated to Thumbadoo, *I master mind the work I* (personal conversation).

Since the death of William Commanda in 2001, there have been many activities commemorating his work and legacy, and he is also increasingly the subject of academic research. He also remains a significant presence in the *cyber* world. A brief outline of key *cyber* mapping activities of spatial and temporal significance is presented below as preliminary evidence of the on-going effectiveness of his singular cognitive mapping practice; in this regard, it is important to remember that this is the work of one Indigenous man and a very small unfunded team.

1. William Commanda was a central website presence in the International Anthropology Conference hosted by Canadian Anthropology Society and International Union of Anthropological and Ethnological Sciences at the University of Ottawa in May 2017 (<http://nomadit.co.uk/cascaiuaes2017/en/index>). Representatives from both University of Ottawa and Carleton University participated in the organization of the conference, convened under the leadership of Professor Scott Simon, who had visited William Commanda and participated in a few

Circle of All Nations gatherings; Thumbadoo, as coordinator of *Circle of All Nations*, played an active role in the conference, inclusive of inputting into the development of the conference theme, *Movement*, arranging Indigenous participation, coordinating a special workshop with academic and grassroots participants, and coordinating a field trip for 50 international delegates to Kitigan Zibi Anishinabeg community and William Commanda's home and teaching lodge in Quebec.

The following quotation is from the conference website, which reached eight hundred participants globally, endorsed the theme of borderlessness and integration:

In celebration

We remember and celebrate the life of Algonquin elder and spiritual leader, Dr. William Commanda, OC (1913-2011), honoured at University of Ottawa with the presentation of his first Honorary Doctorate Degree, and the creation of the William Commanda Hall. He commenced his *Circle of All Nations* work and gatherings formally in 1967, to promote protection of Mother Earth, respect for Indigenous wisdom, racial harmony and peace building, locally, nationally and internationally. Fifty years later, his legacy continues to inspire. Describing himself as Mamiwinini, a nomad, he said "I am in the earth, wind and waters; I am as the bird flies and the wind blows and the water flows - Ginawaydaganuc - We Are All Connected" – a fitting epithet for a conference on Mo(u)vement.

CASCA/IUAES2017 Conference in Ottawa; International Union of Anthropological and Ethnological Sciences (IUAES) and Canadian Anthropology Society (CASCA)

2. Work has commenced on a William Commanda/*Circle of All Nations* Cybercartographic Atlas; four students are supporting archival research.

3. A series of field trips along the Ottawa River Watershed were conducted in 2019, to support research on the physical mapping, reflexivity and retrospective components.

4. Innovative cybernetic animation of *Circle of All Nations* Work, including Two Innovative On-Line Live Facebook Conferences:

a. Several *Circle of All Nations* events and activities, on a range of Indigenous and social justice themes, including one formal conference with postgraduate academic, Indigenous and grassroots presentations ([.CIRCLEOFALLNATIONS/2019 CAN Sept Equinox Event Report.pdf](https://www.circlofallnations.com/2019-CAN-Sept-Equinox-Event-Report.pdf)).

b. In view of the COVID 19 Crisis, a special social media event was hosted on May 22, 2000 in the form of an all day live on-line global public gathering, likely the only one of its kind to date, to celebrate the 20th Anniversary of the *Circle of All Nations* Millennium Peace gathering; it incorporated the temporal and spatial dimensions of the *Circle of All Nations* use of digital and telecommunications technology, connecting people over time and space. As the itemization of activities reveals, it included live presentations from Taiwan, South Africa, United States, and Canada, inclusive of academics and grassroots thinkers:

Pre-event presentation from Taiwan by Dr. Scott Simon, (University of Ottawa) and participants in a SSHRC project with Indigenous Peoples in Taiwan on Decolonizing History;

Part I. Opening Prayer and Introductions, Mother Earth and Environmental (Special Presentation by Steven McFadden, Nebraska, writer, on the Sunbow Five Walk across N. America, 25th Anniversary: Odyssey of the 8th Fire; Deep Agroecology: Farms, Food and our Future

Part II. Child and Youth Care and Social Justice (with special interview with Zeni Thumbadoo, Deputy Director, National Association of Child and Youth Care Workers, South Africa – www.naccw.org.za);

Part III. Criminal Justice and Indigenous Justice (Special presentation on *Horizon to Horizon – The Wet’suwet’en Title Disputed and Associated Conflicts* - by Andrew Costa, Carleton University PhD Legal Studies)

Part IV. Racial Harmony and Peace Building (Special presentations on Donald Marshall Junior and the Wolf Project Award)

Part V. Canoe, Art, Creativity and the Journey On (Special guest, musician Wayquay, who sang about the Sunbow Five Walk at the Millennium Gathering)

Post Event. Interview with Adrian Esposito, Circle of All Nations Asperger Syndrome colleague, Documentary Producer espocinema@rochester.rr.com

A special musical video was co-created pro bono with Karen Bisson, President Turtle Lodge Trading Post and volunteer designer and administer of Circle of All Nations project website (www.asinabka.com): [Circle of All Nations Commemorative Video](#) The 6 live videos are online under Videos on the Circle of All Nations Facebook Page and on a new Circle of All Nations Utube Channel. A special report is being prepared on the event.

c. On June 21, 2020, a second 2.30 hour online *Circle of All Nations* Solstice event was hosted on Facebook. For the second event, global telecommunications were handled with greater efficiency, and consistent with Norbert Wiener’s prediction, even machines learned to improve their language of communication, with the impetus of Coronavirus 19. An academic from Algeria, an Indigenous educator from Manitoba and a student from Carleton University made presentations. (See Agenda here: [Circle of All Nations CAN 2020 June 21 Solstice Event Fnl.docx](#) and the Powerpoint Presentation here: [CIRCLEOFALLNATIONS/2020 PPP CAN ONLINE SOLSTICE GATHERING red.pptx](#))

The Live Facebook Videos reached 5,000 people, and the videos remain available for new viewers on the video tab of the Circle of All Nations Facebook page: <https://www.facebook.com/circleofallnations/>

This event profiled the 25th Anniversary of the Sunbow Five Walk that William Commanda had guided from First Encounter Bay, Massachusetts, to Santa Barbara, California. A researched presentation was made by a student, who noted the relevance of the police killing of George Floyd in Minneapolis to the objectives of the original walk, and this also serves to demonstrate animative capacity of William Commanda’s mapping.

d. Seven students, including foreign students, have been formally involved with the work and are sharing information with families abroad.

e. In view of the Covid 19/isolation restrictions, an informal course based on the *Learning from a Kindergarten Dropout* book about Elder Commanda is being offered online.

5. Conclusion

The fast paced facebook time/space integrated digital information/communication trajectory permits not only a spontaneous and free flowing, immediately responsive, and even anticipatory, lens to affirm, reiterate and generate response to William Commanda’s *Circle of All Nations* discourse from the global public at large, but also permits its ongoing cyber steering to a new platform of cybernetic analysis in these times of global crisis and isolation. The cybercartographic atlas serves as an innovative and live archive and repository for his remarkable legacy and lends itself for live chat space for policy and program contemplations. From rootedness in the geographical cosmic time/space field, to cartographic motion, to animation in the domain of Cybercartography, with facebook hosting the temporal and atlas hosting the spatial elements of his discourse, it appears that William Commanda’s cognitive mapping practice has anticipated these *cyber* times, consistent with his prophecies.

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