8 Sustaining Indigenous knowledge as renewable “resources”

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Introduction

The objective of this chapter is to contribute to an understanding of Indigenous-led research processes which embrace Indigenous research agendas for the express purpose of sustaining Indigenous knowledge through Indigenous research, Indigenous philosophies, Indigenous methods, and Indigenous healing. As a curriculum developer, a scholar, and teacher of Tlingit constructs at Yukon University and privately, the researcher is Tlingit. The researcher's affiliation is to Tlingit people; this affiliation assists with international work which seeks to define Indigenous engagements and practices. Burdened with trauma from contact and colonisation, the researcher grew up believing that Tlingit stories were myth, that there was little or no value in understanding Tlingit history or language. These kinds of ideas are remnants of Canada's Indian Act policies; these policies shaped the researcher's educational pathway to the point of near amnesia on who are the Tlingit of Alaska, British Columbia, and the Yukon. Teaching Tlingit constructs in institutions of higher learning has led the researcher to realise that Tlingit people, like many other Indigenous Peoples in the Arctic and across the world, are healing and decolonising from contact and historical discrimination. For the Tlingit, the act of decolonisation is achieved through the Indigenization of their worldviews: speaking and thinking in Tlingit to each other; by hosting ceremonies and groups where there is clan balance so that speaking protocols are adhered to; by ensuring there are Tlingit-led enquiries and processes for Tlingit-led answers; by holding up Tlingit-led participation and assessments; and more. Tlingit Elders who are fluent in their Tlingit languages are the key to ensuring cultural ethics and protocols are adhered to (Dauenhauer N. & Dauenhauer R. 1987, 1990, 1994). Looking back, it is extraordinary what the Tlingit have endured: Boarding Schools, Indian Ceremonies Removal Acts, Indian Land Removal Acts, Indian Languages Removal Acts, the installation of International Borders, ad nauseum. Amongst many Tlingit Elders, the impacts of past government policies have laid an undeniable trajectory

which is struck with grief, sorrow, and general social unease and unrest due to loss of land, language, family, and culture.

Background

The day is done (November 5, 2017). The lead instructor/researcher closes the chapter on the boarding school curriculum she was asked to write by her employer in 2015. What resulted was pages and pages of notes, a draft curriculum framework, over one hundred hours of videotape, place-based curricula for Kindergarten to Grade 12 Social Studies for Juneau School District, and a YouTube (Sharing Our Knowledge Conference, 2016) Elders' presentation on boarding school at a Sharing Our Knowledge Tlingit Clan Conference. At the beginning of the Tlingit Elders' workshops, English was the dominant language being spoken and written. As time progressed, Tlingit became the dominant language, spoken and written. Together, over a two-year period, Tlingit Elders sat and discussed the impact boarding school and other Bureau of Indian Affairs' policies continue to have on Tlingit people. The lead instructor/researcher led the Elders through a series of focused and grant-supported workshops, which resulted in the application of Tlingit thinking, Tlingit language, Tlingit philosophies, Tlingit fluency, the articulation of Tlingit learning and teaching methods, and so much more. The method of data collection included the lead instructor/researcher being a learner, a teacher, and a facilitator. The focused discussion topics were for the express purpose of revitalising Indigenous languages, literacies, knowledge, and histories amongst Tlingit peoples.

Tlingit Elders and the lead instructor/researcher were paid for their participation by the employer, Goldbelt Heritage Foundation. Goldbelt Heritage Foundation is a non-profit organisation in Juneau, Alaska, and is dedicated to the revitalisation of the Tlingit language and culture. From the onset, the grant recipients and participants of the circle were the providers of traditional knowledge and traditional foods. The circle worked towards obtaining and recording Tlingit knowledge; the circle welcomed dynamic and responsive agendas; the circle encouraged the use of microphones and speakers; the circle enjoyed comfortable chairs, tables, and good light; the circle mandated an open-door policy for their families and youth; the circle made room for young and emerging Tlingit culture and language experts, for non-native Tlingit cultural experts, and literature on the Tlingit.

As part of a larger team of educators, Alaska and Yukon Elders and Knowledge Bearers worked on Indigenous knowledge inclusion in several meaningful and significant ways. The Elders recognised that the Alaska and Yukon border is a colonial construct. From the onset, the grant recipients and Elders and Knowledge Bearers were part of the planning team, laying foundations, planning language focus and culture activities, ensuring jurisdiction over the Tlingit place and Tlingit values, and cultural

appropriateness. As the Elders embraced ideas, programs, and implementation concerning language and culture, the Elders focused on life before contact as a way to articulate and define foundational aspects to life in the past, today, and life in the future. To the Tlingit, perseverance is the key: “Before the great floods, we had already been through a lot” (Goldbelt Heritage Foundation Elders, Boarding School discussion, 2017). In rebuilding who are the Tlingit peoples of Alaska, British Columbia, and the Yukon, participating Tlingit Elders, parents, and youth determined what is healing to them. In developing place-based scholarship, Tlingit constructs and languages must be intact. Researchers and scholars of Tlingit knowledge must adhere to Tlingit ethics and protocols. This is especially true if the goal is to sustain Tlingit knowledge processes for the purpose of living and sustaining Tlingit knowledge in the context of social justice and other ideas such as renewable resource economies.

Sustaining Tlingit knowledge

Given the issues arising from contact and colonisation, how do Tlingit sustain their knowledge in the area of renewable economies in the Arctic? What do Tlingit think about solar energy, wind energy, geothermal pressure, wood, water, oxygen, fish, and precious metals? Tlingit concepts about solar energy are found in ancient stories, such as Raven giving birth to the sun, moon, and stars. That is, Raven’s demand for the sun, moon, and stars produced the sun, moon, and stars, and provided for an ever-increasing population. Once Raven freed the sun, moon, and stars, Raven fixed man and woman. The Raven story also tells listeners how long the Tlingit have been in the area—since the beginning of time. In applying a Tlingit lens to precious metals, Tlingit value copper and historically went to any length to obtain it. Copper is dáanaa (currency, status, wealth) and receiving copper at a Ku.éex is a high honor. One of the trail networks inland is named by scholars and researchers as the Kohklux trail. This trail is known by Athabaskans and Tlingit as the “Grease Trail”. This trail is one of many trade trails between Tlingit and Yukon First Nations. One route of this trail extends from Haines, Alaska to Skagway, Alaska then onto the Yukon and another route of this trail extends from Klukwan, Alaska to Haines Junction then onto Yakutat, Alaska and/or White River, Yukon for copper (de Laguna, 1972, p. 88 [citing Davidson 1901 who published the trail that Kohklux and his wives drew out]). After Alaska was sold to the USA, portions of the Kohklux trail on the Chilkoot (Skagway, Alaska) side were documented by US Army Lieutenant Schwatka in the summer of 1883. In 2020, the Grease Trails inland form the basis of our Alaska, Klondike, and Yukon highways. At the time of the Gold Rush in the Yukon, 1896, many Tlingit were hired as packers because of their strength and expertise. In our institutions of higher learning and in history, the focus when we talk about Yukon and precious metals is gold. Today, in the time of COVID-19,

studies are suggesting that germs have a shorter life span on copper. Since the time of written history, Tlingit languages, histories, and methods have been overshadowed and diminished by “settler” histories and ideas. In the not-so-distant past, Tlingit knowledge had to fit into western frameworks in order to be understood.

An Alaska, British Columbia, and Yukon research example which highlights local Indigenous knowledge sustainability, local agreements, and treaties, and international research conventions is the Kwäday Dän Ts’ínchi archeological find. The finding of the Long-Ago Man in the Ice, also known as Kwäday Dän Ts’ínchi led to comanaged science and culture tables (Royal British Columbia Museum et al., 2017). Kwäday Dän Ts’ínchi was found in ice near the Ruby Mountain Range (Champagne and Aishihik First Nations, 2009). Shortly after Kwäday Dän Ts’ínchi was found, he not only received a proper burial, but he also received a forty-day smoking party (Klukwan) and a one-year memorial party (Champagne and Aishihik), also known as Ku.éex. Kwäday Dän Ts’ínchi was cremated. This reveals Athabaskan and Tlingit law for the treatment of human remains. Based on Kwäday Dän Ts’ínchi’s clothing and stomach contents, he was traveling inland from the coast of Alaska. Kwäday Dän Ts’ínchi was probably travelling at the same time that Columbus “discovered” the Americas. Athabaskan, Tlingit, and Western researchers determined that Kwäday Dän Ts’ínchi was on one of the well-used Grease Trails between Klukwan, Alaska and/or Yakutat, Alaska and/or Copper River, Alaska (Royal British Columbia Museum et al., 2017).

The coproduction and comanagement of Southern Tutchone, Tlingit, and Western research revealed pathways to understanding Indigenous clan identity with respect to mitochondrial DNA markers (Monsalve, 2017). Most Alaska and Yukon First Nations communities are matrilineal. This means that Indigenous identity is set through the female line. Indigenous knowledge systems, including heritage language, thinking, objects, properties, families, ancestors, histories, songs, and values, are transmitted through matrilineal lines. Modern science has found that sperm carries its DNA markers in their tails and necks and is left behind during fertilisation (Monsalve, 2017). Kwäday Dän Ts’ínchi DNA supports what Southern Tutchone and Tlingit ancestors inherently knew about DNA markers (S. Adamson, personal communication, 2019).

Today, many Alaska and Yukon First Nations people and Elders work with appropriate agencies to develop meaningful and relevant engagement connections regarding Indigenous finds and collections (Royal British Columbia Museum et al., 2017). Tlingit investigation and science is tied to balance, to ownership, to spirit, to the seen, to the unseen, to the known, and to the unknown (Goldbelt Heritage Foundation Elders, Tlingit Science Framework discussions, 2017). As seen in recent Kwäday Dän Ts’ínchi publications, comanaged research tables can reveal Indigenous and western ways of knowing (Royal British Columbia Museum et al., 2017).

To coproduce and learn or teach Indigenous languages and knowledge is to address systemic discrimination in Alaska and Yukon public institutions. Discussions that embrace culture, language, and policy will bring up dialogue and memories concerning past and current treatment of Indigenous Peoples and equity and equality in public institutions, communities, and societies. Sustaining Indigenous knowledge means that modern research processes must allow for time and resources for Indigenous Peoples to reconcile their histories and languages amongst themselves. The coproduction of knowledge with other knowledge occurs after Indigenous Peoples have had time to go away and discuss matters at hand. Through this process of internal dialogue, Indigenous learning frameworks will form the basis for further work in articulating what is Indigenous knowledge for the purpose of influencing Indigenous lives, cultural endeavors, public and post-secondary schooling, and further research (Goldbelt Heritage Foundation Elders, Tlingit Science Framework discussions, 2016). Indigenous knowledge are collective and are often clan-based. At the practitioner stage, the researcher is a facilitator of knowledge as opposed to a gatekeeper of knowledge.

Indigenous knowledge-gathering activities and research must be seasonal to honor the various harvesting events. This was heard at various Social Economic and Culture Expert Group events in Finland and virtually.

Using Indigenous ways of recording events with history, art forms, face paints, and oratory, most Indigenous Peoples know that Indigenous stories are true (Shorty, 2015). Systemic discrimination and powerful English constructs surrounding the word “story” tend to ignore the history in the story and many believe that Indigenous stories are myth. Unpacking Indigenous stories brings forward ancestors’ knowledge and wisdom, the strength of Elders, ideas of land, and working together (Sealaska Heritage Foundation, Core Cultural Values Poster). Dialogue and research amongst Indigenous Peoples must allow time for healing (Goldbelt Heritage Foundation Elders, Native American Graves Repatriation Act, 1990, discussions, 2017 for Native American Graves Repatriation Act 1990 due to the unearthing of unmarked graves in 2012 at an elementary school in Douglas, Alaska).

To engage with Indigenous Elders at the local level will produce new knowledge, research tools, and processes, on what is Indigenous thinking on Indigenous learning frameworks about the ancestors, the values, the land, the environment, the foods, the non-tangible, the tangible, and the history.

For many Indigenous Elders, Indigenous Peoples need to teach Indigenous constructs, especially if Indigenous Peoples are reconciling and sustaining Indigenous knowledge and languages which are based on the past and for the purpose of future children and grandchildren (Tlingit Elders, Boarding School discussions, 2015-2017). Protocols and laws on the handling of Indigenous knowledge and languages for public institution use by Indigenous and non-Indigenous educators is an area that will need exploration and definition. Perhaps Indigenous Peoples prefer to keep this area grey, perhaps due to ideas about power in the unknown.

Haa Kusteeyi¹ (Way of Life) and Dooli² (Law) sum up the ideas which govern Alaska and Yukon philosophies and views on sovereignty, spirituality, and stewardship of land, air, water, and the unseen. The idea is that Alaska and Yukon First Nations enjoy specific environments and territories, have clan crests, have ancestors, have a collective good, have history, sacred places, stories, songs, dances, symbols, law, respect for the land and her resources, traditional practices, knowledge, and an identity. Alaska and Yukon Elders say that the way they pass on Haa Kusteeyi and Dooli must be the foundation to the development and implementation of traditional/contemporary practices and knowledge (Sealaska language proficiency meeting, September 24, 2010).

Using Indigenous constructs, the highest level of authority is reserved for Haa Shageinyaa (Our Heavenly Father). This reverence for a higher order of things is the first and most important idea of all (Goldbelt Heritage Foundation Elders, Tlingit Science Framework discussions, 2016). Everything has a spirit yet, very little research time is devoted to discussions on sacred spaces for sacred learning (Goldbelt Heritage Foundation Elders, Tlingit Science Framework discussions, March 2016). Indigenous Peoples in Alaska and Yukon are discussing and implementing “reconciliation” so there is a real need for Arctic research projects to embody Indigenous research agendas. Without prejudice, Indigenous Peoples need research support and space to explore and teach Indigenous constructs amongst themselves in order to collectively reconnect and/or reconcile with their heritage ancestors, land, languages, methods, and philosophies. Research agendas need to include space for Indigenous identity building, Indigenous culture sharing, Indigenous language renewal, Indigenous methods renewal, and healing amongst themselves. Throughout the teaching, learning, and research processes, Indigenous Peoples follow their protocols and their laws while demonstrating care for the continuation of language and culture by speaking and thinking in their languages together and with their children, adults, and youth.

At Arctic Council meetings, Arctic Indigenous Peoples still report that some researchers come to the villages and are sometimes disruptive and want to conduct research on the knowledge that is specific to “science” or to projects outside of what the villages want or feel is important. In other words, Indigenous Peoples are asked to participate and to fit their thinking into a western research paradigm. Not only is this “fitting” unethical, it is morally wrong considering concepts of cultural genocide through Indian Acts, policies, relocations, nationality, and land reassignments. To be clear, *Arctic Council is a high-level interagency that facilitates “soft law” arrangements for participating members on issues pertaining to Arctic issues. While the deliberations of the Arctic Council are not legally binding, the conversations of the Arctic Council do force consideration to Indigenous matters* (Amanda Graham, personal communication, August 26, 2020). Indigenous Peoples are Permanent Participants of Arctic Council. In this light, Arctic Council

facilitates and promotes full consultation rights on negotiations and decisions which impact Arctic Indigenous Peoples through participation from the Permanent Participants. It is important to note that, most often, the results of Arctic Council deliberations do serve as a “moral guide” (term coined by Amanda Graham, personal communication, August 26, 2020) for participating countries on research issues impacting Arctic regions. How does the circumpolar research region engage with Indigenous Peoples and humans from the Alaska and Yukon region in areas such as sustainable development and environmental protections? Western research has provided many publications on Indigenous history, cosmology, epistemologies, and stories. With respect to decolonising the institution of Arctic Council towards the inclusion of Indigenous research methodologies, how do Indigenous Peoples define social, economic, and culture laws of engagement for issues of arising out of Arctic Council research?

As stated, Arctic Council does provide a permanent forum for Arctic Indigenous research concerns and, in this light, can advance Indigenous research for participating countries. Permanent Participants are part of the Arctic Council table and are given voice and time in Arctic Council roundtables and discussions. Arctic Council and Permanent Participant deliberations and declarations do influence local, regional, and federal research initiatives, policies, and programs such as the International Arctic Science Committee and the International Arctic Social Science Association (IASSA), as well as local and community-based research entities such as the independent Arctic Institute of Community-Based Research out of Whitehorse, Yukon Territory, Canada. In light of all this, the National Research Council of Canada calls for rigor regarding research standards and here is where the contact and colonisation history of Indigenous Peoples comes into play. Without repeating historical injustices such as land displacement, language loss, children and family connections severed, cultural ceremonies severed, recall that Goldbelt Heritage Foundation Elders collectively found their way through the tough conversations as they spoke to each other in their languages, using their ceremonies, and living their culture. Through this process, Tlingit knowledge was expressed in the Tlingit language, using Tlingit methods towards sustaining Tlingit knowledge. Collectively, and in their heritage languages, the Tlingit found their way back to their ancestors and were able to state that: “Before the great floods they’d already been through a lot” (Goldbelt Heritage Foundation Elders, Boarding School deliberations, 2016). In moments of despair, the Elders recalled what their ancestors endured over ten thousand years ago. Tlingit had been written out of history and what replaced Tlingit history was dominant culture history (English). Historically, Tlingit have been in this place since Raven released the sun, moon, and stars because Raven wanted the sun, moon, and stars. Tlingit use repetition as a way to teach values; Tlingit worldview is circular; advancing, going back, ebbing, flowing, dynamically, and in spirals. *The difference is between inductive and deductive reasoning. Indigenous thought*

is inductive, from the earth, sky, the unseen, the unknown (Bernie Johnson, personal communication, August 16, 2020). Bernie Johnson is 75 and a deep Southern Tutchone thinker—Bernie has chosen not to live conventionally—he is a drifter. Bernie also noted that western thinking is in blocks, squares—Indigenous thought is in circles, spirals—the circle can fit in the square, but there are still the unknown parts. The square cannot fit in the circle (when it comes to translating Indigenous knowledge for science, research, writing). As declared in Canada, Indigenous research engagement protocols *are intended to support, not replace a direct relationship with Indigenous Peoples* (Assembly of First Nations, 2009).

Hence, what does this mean with respect to how public and research institutions display and use Indigenous knowledge? Often outside authors are celebrated for what they publish on local Indigenous experiences, history, peoples, and politics. At the public institution level, it should be the local history that is displayed, and the resources developed around those local experiences should be viewed as supports, not as replacements of local Indigenous knowledge. Using modern research methods, the author and/or researcher is celebrated, and the multitudes of Indigenous Elders and knowledge bearers remain unnamed in author bylines.

In the application of an Indigenous research paradigm, the research question must involve the community right from the start. Research questions must place equal research value on Indigenous knowledge, languages, histories, and philosophies and engage with local Indigenous Peoples, especially when it comes to the formation and plans towards the research question itself. Research needs to be authenticated by Indigenous Peoples themselves (time to go away and discuss the research question, as well to define Indigenous enquiry and levels of research involvement). Most often, when there are research gaps with local Elders or traditional teachings, the research solution is to oversimplify or generalise specific and place-based knowledge. One of the current solutions to overcome this scenario is to ask a First Nation individual who is willing to volunteer time to come forward and address the issue. The term “volunteer” is used as the rate of honoraria for Indigenous knowledge inclusion is often not on par with modern expert inclusion.

Given new research on Indigenous Peoples by Indigenous Peoples what do Indigenous research instruments and research analysis look like today? There are now a growing number of Indigenous Peoples holding doctoral degrees, which could potentially level the research playing field as these doctoral degree holders can apply for research dollars and be Principal Investigators in matters which pertain to Indigenous Peoples. Past research has really paved the way to help develop and review how Indigenous researchers think today. In 1999, Indigenous researcher and author, Linda Smith recommended that Indigenous Peoples decolonise their methodologies.

Against today’s social climate, Indigenous Peoples are still finding themselves being *othered* (Smith, 1999) in constructs and trade fields which clearly

are the intellectual and cultural property of Indigenous Peoples. In 2000, Shawn Wilson said that Indigenous research paradigms include building respectful relationships, being responsible, and giving back. In 2005, Ray Barnhardt and Oscar Kawagley brought our attention to ideas of deep culture. In 2007, Beth Leonard wrote that the Indigenous research paradigms need to incorporate those elements not seen (intangible power); and Leonard further states, that the English language does not do an adequate job of translating intangible power as expressed through Indigenous histories, stories, oratories, medicine, and more. From 2015 to 2017, coastal Tlingit Elders wanted to set the stage on what is important to them; and to research and analyse elements of culture that will help boarding and mission school survivors and those that have been impacted by elements of contact and colonisation to relearn Tlingit dialects and language, know the Tlingit culture and history stories, and know deeply who are the Tlingit people. Tlingit people want to invest in research projects which build on their individual and collective identities while articulating and using cultural constructs that are based on their deep cultural values (Shorty, 2016). Tlingit people are seeking to heal themselves with their ancestors, lands, histories, heritage languages, cultures, worldviews, politics, learning and teaching methods, research, and data collection (Goldbelt Heritage Foundation Elders, personal communications, 2015-2017).

Sustainable Indigenous methods that plan forward by looking back include heritage language, include Youth and Elders to ensure that the “words of the Elders do not fall upon the ground” (G. Davis in Dauenhauer & Dauenhauer, 1981), and a time for healing (Goldbelt Heritage Foundation, NAGPRA discussions, 2017). Sustaining Indigenous knowledge methodologies allows for time on the land or sea with Indigenous adults, youth, Elders, and knowledge bearers. As demonstrated through Indigenous Peoples histories, acceptance is key to moving on. When Indigenous Peoples speak their language with one another, they are sustaining Indigenous knowledge and are working collaboratively and in their traditional ways. Land and food sovereignty reveal place-based research, ceremonies, philosophies, methodologies, and subject matter experts. In order to heal the impact of colonisation, Indigenous Peoples must be able to speak and think in their heritage languages and to make a life as an expert in their fields of study. As exemplified by the researcher’s primary Indigenous research experiences, reconciliation of Indigenous Peoples to their culture, language, and traditions through public institutions can occur with careful, mindful, inclusive planning and dialogue lasting for more than two years.

When public school teachers of science sat with Tlingit Elders to coproduce knowledge on Kindergarten to Grade Twelve science, the center of the dialogue was worldview. Western or modern science at the public-school level addressed learning points that are not typically included in Tlingit “scientific” learning situations. One example was with hot rocks. Tlingit used rocks to cook their foods, when they cooked in wood or willow vessels.

The lesson was a chemistry lesson on specific-heat capacity: focusing on the types of woods or barks needed to make food containers, the kinds of weave to make the vessels watertight, the types of hot rocks needed to withstand cold to gradually cooking water. The science lesson asked the learners to make deductions on how the cooking rocks are formed, the heat transfer, the heat density (S.T., 2017, rough notes for Food Tools of Our Ancestors). Indigenous science brought forward clan-owned stories which were related to “hot rocks” and demonstrated how long this particular Tlingit clan have been in this particular area. As can be seen from the hot rock exercise, the coproduction of knowledge between schoolteachers and Elders can provide full circle, progressive, thinking on trends, solutions or recommendations with respect to Indigenous knowledge sustainability in a public-school context. Elders are utilised for sharing their knowledge on cooking rocks and food sovereignty and for their proficiency with philosophies, relevant cultural activities, language, and long-ago land connections. What is not written are the spaces for this lesson to occur. This lesson would take place outside with parents, children, youth, Elders, and teachers, including community specialists, all working together to co-produce knowledge in the area of fire rock cooking.

The coproduction of knowledge in curriculum writing processes can provide vital cultural and scientific knowledge which can inform contemporary Indigenous challenges such as wind energy, food sustainability, and mineral extraction.

Discussion

A glimpse at Canadian policies on Indigenous Peoples reveals laws that greatly disrupted Indigenous connections to family, heritage languages, history, land, oratory, place names, philosophies, and values. Contact and colonisation have negatively impacted many Indigenous Peoples through loss of heritage languages, through the lack of public space for cultural practices, through the loss of families, and identities. Because Indigenous knowledge, culture, and language have been lost through laws, boarding schools, and genocide, Indigenous philosophies, and worldviews may be incomplete: if one believes that culture is in understanding the context and details of Indigenous languages and thoughts.

Indigenous culture specialists, Elders, and non-Indigenous subject experts have tried to Indigenous science constructs and have found that through this process Indigenous constructs tend to remain subordinate to modern subject ideals and constructs (Goldbelt Heritage Foundation Elders, Hero’s Journey with public schoolteachers’ discussions, 2017). The attempt to make Indigenous knowledge fit into western research constructs for the purpose of the scholarship process often highlights what is present in literature and what is absent in the process. For instance, some course objectives have learning outcomes which include Indigenous focuses, and these outcomes

remain silent on the laws and protocols that Indigenous Peoples follow when they are working with their culture. This lack of direction for working with culture, laws, protocols, and language processes in a modern context is quite concerning, especially when researchers come to Arctic communities with their research guidelines already set out.

Tlingit people, through their own research process, ensure that there are clan-balanced Elder and knowledge bearer tables formed specifically to “unpack” the task at hand. Collectively, Tlingit informs Tlingit thought, meaning no one person speaks for all. Tlingit speaking protocols ensure validation of what is being said. Clans speak to each other, weaving in history, land, oratory, and sacredness in their speeches. Research tables and discussions lasting more than two years often lead to Indigenous languages and thought application, deeper personal and professional understandings, values application, ancient and modern oratory, history, and social justice (Goldbelt Heritage Foundation Elders, Tlingit Boarding School discussions, 2015-2017). Dedicated research time and funds ensure that Indigenous and western research processes, which are often in opposition to one another, co-exist. Indigenous culture is oral. Written and non-written forms of Alaska and Yukon First Nations do record history through clan emblems, totem poles, personal names, place names. Without fluent Elder leadership or place-based significance, it is easy to teach Indigenous subject matter out of sequence or as myth. Indigenous Peoples pass on culture and knowledge through their clans and tribes, languages and lived experiences, place, and now through schools, both public and higher learning. Indigenous knowledge are collective and are often clan-owned and operated. Indigenous Peoples are actively teaching themselves about who they are on their own terms, with their own timelines. Alaska and Yukon Peoples continue to trace the development of their worldviews through their communication with each other, about past, present, and future times. In each of these contexts, Indigenous history and oratory, which have been constructed since time immemorial, are drawn upon in relation to the cultural context in which history and oratory is situated.

Those Elders who are fluent in their Indigenous languages and thoughts and who have been raised by their grandparents carry with them an authentic worldview which is based on the authentic teachings of their ancestors in their languages and with its culture. This authentic worldview embedded in Tlingit methods does contribute to an understanding of Indigenous-led research processes which embrace Indigenous research agendas for the express purpose of sustaining Indigenous knowledge through Indigenous research, Indigenous philosophies, Indigenous methods, and Indigenous healing. Indigenous Elders know that Indigenous knowledge must stand on its own because everything is interconnected. Indigenous knowledge is tied to Indigenous languages and is place-based and eco-specific (Barnhardt & Kawagley, 2005; Leonard, 2007; Topkok, 2015). Indigenous Peoples want time and resources to reconcile with their language, culture, and

philosophies (Elders Boarding School Dialogue, Tlingit Clan Conference, September 2019). Public dedicated space and time for Elders and Indigenous languages will assist Indigenous Peoples methodologies on healing and reconciling who are Indigenous Peoples in light of what has happened to them (Goldbelt Heritage Foundation, Youth and Elders dialogue, 2017). Using an Indigenous research lens, Indigenous women recognise that gendered discussions include girls, women; men and boys; babies, and Elders (Empowering Indigenous Women Workshop, March 2018). Indigenous women want to have their voices include men and boys as Indigenous constructs are balanced. Co-constructed research agendas, including the preparation for the collaboration itself, will ensure the growth and sustainability of Indigenous knowledge and heritage languages at all research and implementation levels. Based on the presentation of Indigenous research practice, it is noted that Indigenous research methods deviate from western research practices because most often, Indigenous knowledge databases are formed at the time of needing the Indigenous data. Modern research processes uphold the literature and peer review processes. The Indigenous scholarship process requires local and place-based rigor with regard to how Indigenous knowledge is presented (Empowering Indigenous Women Workshop, March 2018). Researchers need to meet on Indigenous homelands where the topics being researched are located. Researchers must respect the interplay between Indigenous Peoples, lands, and Indigenous foods (Snowchange Cooperative, 2017).

With respect to engagement and co-production of Indigenous knowledge, there is a need for co-operation and a deeper analysis of what collaboration and coproduction looks like. In the area of food, plants, medicines, arts, culture, peoples, and knowledge, local Indigenous knowledge cannot be replaced with secondary resources.

Many Arctic Indigenous Peoples are recognising that knowledge and product appropriation continues to occur at alarming rates. For instance, Indigenous medicines such as willow bark are being marketed for profit by health and food scientists. These marketed items are copyrighted to the marketer, not to the Indigenous knowledge keepers. Ethically, any Indigenous research should ensure healing from contact and colonisation by embracing Indigenous language, methods, sovereignty, and worldviews. At the practitioner stage, the researcher or teacher of Indigenous knowledge is a facilitator of Indigenous and place-based knowledge as opposed to a gatekeeper of knowledge. Indigenous knowledge activities and research must be culturally relevant as well as seasonal to honor the various harvesting events (eulachan, herring eggs, seaweed, berries, salmon). The facilitator ensures meaningful Indigenous engagement (no tokenism) by ensuring the speakers are clan balanced. The facilitator ensures that Indigenous spirituality is incorporated by ensuring cultural laws and protocols are followed. The facilitator ensures that all contribute to the understanding of Indigenous-led research processes which embrace Indigenous research agendas for the

express purpose of sustaining Indigenous knowledge through Indigenous research, Indigenous philosophies, Indigenous methods, and Indigenous healing. To coproduce, learn, and teach Indigenous languages and knowledge is to address systemic discrimination in public institutions. Discussions that embrace culture, language, and policy will bring up dialogue on, and memories of, land, language, and family losses. Sustaining Indigenous knowledge means that modern research processes must allow for time and resources for Indigenous Peoples to reconcile their histories, lands, and languages amongst themselves. The coproduction of knowledge with other knowledge occurs after Indigenous Peoples have had time to go away and discuss matters at hand. Through this process of internal dialogue, Indigenous learning frameworks will form the basis for further work in articulating what is Indigenous knowledge for the purpose of influencing Indigenous lives, cultural endeavors, public and post-secondary schooling, and further research (Goldbelt Heritage Foundation Elders, Tlingit Science Framework discussions, March 2016). Unpacking Indigenous stories brings forward ancestors' knowledge and wisdom, strength of Elders, ideas of Land, working together (Sealaska Heritage Foundation, Core Cultural Values Poster). Dialogue and research amongst Indigenous Peoples must allow time for healing (Goldbelt Heritage Foundation Elders, Native American Graves Repatriation Act discussions, 2017). To engage with Indigenous Elders at the local level will produce new knowledge, research tools, and processes, on what is Indigenous thinking on Indigenous learning frameworks about the ancestors, the values, the land, the environment, the foods, the non-tangible, the tangible, and the history.

For many Indigenous Elders, Indigenous Peoples need to teach Indigenous constructs, especially if Indigenous Peoples are reconciling and sustaining Indigenous knowledge and languages which are based on the past and for the purpose of future children and grandchildren (Tlingit Elders, Boarding School discussions, 2015–2017). Protocols and laws on the handling of Indigenous knowledge and languages for public institution use by Indigenous and non-Indigenous educators is an area that will need exploration and definition. Perhaps Indigenous Peoples prefer to keep this area grey due to ideas about power in the unknown.

Conclusion

Ancestral knowledge provides the background, the research, the scholarship to knowing who the Indigenous Peoples of Alaska and Yukon are. As evidenced in coproduced research tables, when Indigenous Peoples work in their culture and speak their languages, their philosophies, values, lands, and identities are revealed. Sustaining Indigenous knowledge means that Indigenous Peoples speak and think in their languages and acknowledge that their languages connect them to a deeper understanding of who they are, in context to themselves, society, and the Arctic. Arctic research tables must continue to host workshops to explore the question of how to be more

inclusive of Arctic Indigenous research at discussions, conferences, workshops, meetings. As Indigenous Peoples rebuild and reconfirm their languages and societies, there is acute awareness about gaping social and land wounds resulting from colonisation (Truth and Reconciliation Commission of Canada, 2015). In spite of this tumultuous past, this chapter suggests how scholarship and research can engage with Indigenous Elders and knowledge bearers about renewable Arctic economies, including Indigenous knowledge sharing and research processes. Indigenous Peoples want to invest in research projects which build on their individual and collective identities while articulating and using cultural constructs that are based on the deep cultural values of their respective cultures. Research needs to be authenticated by Indigenous Peoples themselves (time to go away and collectively discuss the research question, as well to define Indigenous levels of involvement, including supports to bridge levels of involvement). With respect to traditional knowledge and its intended purpose, how does the circumpolar region engage with the human dimension in the Arctic? What will our research instruments and research analysis look like? What will our time together grow? How is our research ethic of “do no harm” implemented to concepts like traditional knowledge? Traditional knowledge is an oral construct and is exact (don’t add anything in and don’t take anything away³). Using Indigenous constructs, traditional knowledge is based on oral history and there are rules and laws for using traditional knowledge. Within Indigenous knowledge there are concepts of ownership, jurisdiction, and processes for working among the people. A basic philosophy about Indigenous knowledge is that the accumulation of Indigenous knowledge is for the benefit of future generations. Philosophies, methods, and heritage languages contribute to an understanding of Indigenous-led research processes, which embrace Indigenous research agendas for the express purpose of sustaining Indigenous knowledge about who are the Indigenous Peoples of this land. In conclusion, why did the ancestors leave migration and glacial stories behind? One answer might be, so that their great-grandchildren would know where to go and would know what to do when the ice and floods come again.

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Notes

1. Tlingit
2. Southern/Northern Tutchone
3. P. Keenan (personal communication)

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