Centering Relationality: A Conceptual Model to Advance Indigenous Knowledge Organization Practices

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Abstract: Scholars and practitioners have exposed the limitations of traditional Euro-American approaches to knowledge organization (KO) when it comes to Indigenous topics. To develop more effective KO practices, there is a need for KO practitioners to understand Indigenous perspectives at an epistemological level. A theoretically-informed model of Indigenous systems of knowledge serves as a pedagogical tool to support the labor of boundary-spanning and code-switching between Euro-American KO practices and Indigenous KO practices.

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> From observing the world around them, they could see orderly processes that marked the way organic life behaved. From the obvious motions of the sun and moon to the effects of periodic winds, rains, and snows, the regularity of nature suggested some greater power that guaranteed enough stability to be reliable and within which lives had meaning.
>
> —Vine Deloria, Jr., Standing Rock Sioux

1.0 Introduction

For generations, Native American and Indigenous peoples have sought to exert command over the use and misuse of the products of their ways of knowing by non-Indigenous people's intent on settlement of Indigenous lands, waters, bodies, and ways of life. Thinking deeply about how colonialism has shaped informatic practices and professions—from library science to data science and knowledge organization (KO)—gives advocates for Indigenous peoples the rationale by which to rethink the fundamental ontological differences between western-oriented systems of knowledge and Indigenous ways of knowing. By focusing on the heart of Indigenous ways of knowing, that is, the concept of relationality, we can work to: a) decolonize the western mentalities shaping contemporary KO practices; b) teach practitioners with little to no experience working with Native and Indigenous peoples; and, c) speak to the philosophical foundations of the field. This research asks: what are frequently used definitions for the knowledge created by Indigenous peoples? How do these definitions relate to the field of knowledge organization and the emerging field of Indigenous knowledge organization (IKO)? What does a conceptual model of Indigenous systems of knowledge reveal about KO practices and principles? Through reviewing the colonial history of KO in light of efforts by Indigenous peoples to pass on their ways of knowing through both western and tribally based practices, this research establishes a theoretically informed framework for Indigenous systems of knowledge. A conceptual model contains integral components of the philosophical basis of IKO. This model can be applied as a pedagogical tool to help practitioners bridge the epistemological schism between Euro-American ways of organizing knowledge and Native ways of knowing.

2.0 Background: the colonial entanglements of KO

Colonialism, in its many aspects, is a cyclical and regenerative ideology that, through the intentional subjugation of a class of people by another elite class, results in a widespread terraforming or settlement of Indigenous lands, eradication of Indigenous philosophies and languages, and the physical and social death of Indigenous peoples. Living in its midst is like existing in the eye of a hurricane; it seems to be something happening far away in a distant foreign country, but actually, it unfolds through myriad mundane acts. Indeed, the ideology is in the will of the obedient settler: the citizen who fulfills the promise of the nation-state by normally and systematically denying Indigenous peoples' existence, experiences, and rights to representation. Though this paper cannot provide an extensive historiography of the colonial beginnings of KO, here we can briefly contextualize the colonial entanglements surrounding the disciplines and acts of statecraft that support KO as we now know it. Considering these entanglements contours the mind for the introduction of the Indigenous conceptualization of relationality, a principle that is fundamental to IKO.

We begin with a telling historical anecdote. In 1904 Melvil Dewey, creator of the *Dewey Decimal Classification*, was the New York State Librarian and Secretary of the New York State Board of Regents. As part of his duties, he was also the curator of several collections of Indian objects, including some Haudenosenee wampum belts, objects which, according to Haudenosenee ways of documentation, represent legal agreements, or treaties, of the Onondaga Nation. Late in life, the largest donor of these objects, Harriett Maxwell Converse, requested that an up-and-coming Seneca/English intellectual named Arthur C. Parker be charged with curating these collections. Converse recognized the intellectual value of a knowledgeable American Indian in such a position (Bruchac 2018). Dewey appointed New York Commissioner of Education Andrew Draper to create a job for Parker. Dewey outlines the job description for Parker in a 1904 letter, which reads as follows (quoted in Bruchac 2018, 60):

> Gathering information from the New York Indian reservations concerning the ceremonies, festivals, rituals, religious thoughts, songs, speeches, etc. of the tribes ... [and] relics in the way of implements, dress, ornaments or manuscripts which would help to retain for future generations the best information as to the characteristics and customs of the Iroquois ... You must bear in mind your statement to me that your motive is to preserve information of your ancestors, and work earnestly to that end ... If you do so, it will be a real service to the history of the State.

In time, Parker would become a foremost Indigenous intellectual of the 19th century, with his work influencing generations of American Indians who survived the violence of the Indian boarding schools, schools that were designed, as Captain Richard Pratt clearly advised, to "kill the Indian in him and save the man" (Porter 2001; Pratt 1973). Over a century later, Native and Indigenous individuals educated

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in western institutions of higher education are often still thrust into positions of representation, taking up the labor of evaluating Native "information"—implements, dress, ornaments, and manuscripts—naming it, preserving it, and creating aids to access that information across epistemological and ontological differences, and often not toward the benefit of their Indigenous peoples, but in service to the nation-state.

The idea that the state disciplines knowledge is not new. In his definition of the Leviathan, or the mechanics of an emerging sovereign power, English philosopher and social contract theorist Thomas Hobbes (1904) depicts a tree of the scholarly disciplines up to that point in western European history, noting how the sovereign must locate his right duties within this disciplinary framework and, in doing so, propagate knowledge through rule. Referring to the binary between the citizen/subject and the barbarian, the rule of the sovereign is, in part, to distinguish who has rights within the commonwealth and who does not. In the settlement of the Americas, western European intellectuals applied Hobbesian logic to rationalize what they saw as a just war against Indians of the New World (Moloney 2011). For them, Indians represented an unrepentant barbarism.

Two centuries later, in his philosophy of right, German philosopher Georg Wilhelm Freidrich Hegel (1991) studies the dynamics of revolution, and notes how the state must recognize the relationship between philosophy and law, since to have sanction over the law is to have sanction over what is ethically right, and, therefore, to be able to discern the pursuit of the philosopher, which is to structure free thought with what is universally valid in step with and ahead of the natural and social sciences. Notably, in 1820, the Indian Wars were already a century in motion and would go on for another century in North America, particularly as Congress began illegally acquiring Indian land and selling it at a reduced price to Euro-American settlers moving westward. In the midst of such violent settlement of the Americas, Hegel also references the medieval tree of knowledge, which by the time of his writing is refined through the European Enlightenment into a more robust and nuanced array of fields and disciplines.

Over a century later, French non-conformist Michel Foucault (1982) turns the idea of the tree of knowledge on its head and questions its truth-value. Foucault (1995) notes the disciplinary function of the state when it comes to the definition of knowledge and the practice of philosophy, and, in turn, how the state utilizes the distinction between kinds of knowledge and forms of inquiry in combination with institutional apparatus such as schools, hospitals, the military, and prisons to discipline—to penalize, order, and conform—its denizens into obedient subjects.

Boarding school survivor and Yankton Dakota Sioux writer, Zitkala-Sa (1921), writes about this brutal disciplining. When she was still a child, before entering boarding schools, she had the experiences of learning from her people: hearing the recounting of legends through the oral tradition, internalizing Sioux ways of knowing through deep listening and belonging. Recounting her time in Indian boarding schools, she writes about the slow deadening of Indigenous wit that occurs through a routine of conformity, punishment, and terror in the boarding schools, where the routine practices of Euro-Americans—such as wearing hard shoes, stiff clothing, and cutting hair—are used to suffocate and subjugate the Sioux sense of self, and to physically and metaphysically cut off Indian children from their ways of knowing. Through the ninetenth century and early twenthieth century, while the US wars against Indigenous peoples, beneficent US citizens also equip mixed-bloods like Arthur Parker and so-called assimilated Indians like Charles Eastman (Ohiyesa) and Gertrude Bonnin (Zitkala-Sa) with the western intellectual habits of mind needed for them to document their own disappearance as tribal peoples while also preserving the products of their ways of knowing.

By the time Vine Deloria, Jr., Gregory Cajete, Donald Fixaco, and other prominent twentieth and twenthy-first century Native scholars have come into their own, they have at once both internalized the historical trauma of their blood ancestors and their intellectual forefathers and foremothers such that they have a record of both how US institutions erase American Indian philosophies, and how American Indians hold tight to their philosophies and customary practices in spite of pernicious and ubiquitous colonial ideology. Indeed, contemporary Native and Indigenous scholars now publish books and articles to advance metaphysical knowledge of the colonizer in light of their Indigenous experience and epistemology. Since the 1920s, when Congress granted American Indians with rights to citizenship, including rights to vote among others, these kinds of works are generally protected in the US (and in other western countries) under a right of free expression. American Indians are no longer viewed as the "merciless Indian savages" defined in the US constitution, and as intellectuals are not overtly penalized for speaking their languages or practicing their religions (Wunder 2000). Instead, Native and Indigenous intellectuals are now subjugated in subtle ways, most often by being told by institutional gatekeepers that their ways of knowing are incommensurate with the western European canon and an ill fit within the western bibliographic universe, which has largely come into existence through the philosophical and technicized labor of classificationists and practitioners of KO in concert with writers and publishers.

Indigenous peoples are also told that unless their ways of knowing can be codified as a form of property—with private property and the commons being the operational standard of nearly all laws under modern nation-state forms of sovereignty—they cannot be protected by authorized leg-

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islative and judicial bodies. For this reason, elaborate forms of protection of Indigenous Knowledge (IK) are forwarded through the World Trade Organization and the World Intellectual Property Organization, where IK is most often defined in a form that German philosopher Karl Marx (2016) would recognize as the primitive accumulation of capital, the raw material needed for industrialists to develop a marketable product through a capitalist means of production. Yet, contemporary Indigenous thinkers do not consider IK to be primitive capital, nor is it wholly a product, or even really "information" as Draper refers to in his 1904 letter to Parker. Indeed, Māori methodologist Smith (1999, 2012) considers IK to consist of Indigenous ways of knowing including Indigenous peoples' knowledges of their colonizers. In light of the Indian Wars and broken treaties, Standing Rock Sioux scholar Vine Deloria, Jr. (1978) finds that American Indians have a right to know the cause of their oppressed status, and that the purpose of library services to American Indians is not necessarily to be "of service to the history of the State" as Draper (1904) expects, but most of all is to benefit American Indians in their pursuit of self-determination and, ultimately, liberation.

Thus, to understand IKO—that is, the methodologies and means by which Native and Indigenous peoples create protocols to cohere, name, articulate, collate, and make accessible objects that indicate Indigenous knowledge—requires that practitioners of KO appreciate the colonial history of KO. Furthermore, it requires that KO practitioners recognize that the work of IKO is fundamentally a practice of liberation, and, therefore, is far less about attempting to reform or revise existing tools and methods, and far more about finding ways to discern and advance Indigenous systems of knowledge. This means that IKO may be paradigmatically distinct from the canon of KO that is tied to the project of US national expansion. To speak of IKO is to signify what French actor-network theorist Bruno Latour (2012) refers to as another chain of reference; one that appears to use similar vocabulary, but that derives from another world of meaning. This world is largely unknown and in some aspects unknowable to those who do not have the lived experience to recognize its internal logic, a logic that is grounded in, as Deloria (2006, xxv) writes, "some greater power that guaranteed enough stability to be reliable and within which lives had meaning." With this paper, like the more recent works of Indigenous theorists who attempt to create boundary-spanning interventions between Indigenous thought and practice and western philosophies such as Martin Nakata (2007; 2008) and Manulani Aluli Meyer (2008), we thus offer an ontological tool to help unsettle the colonial mentalities shaping contemporary KO practices. To borrow the discourse of western philosophies of science, we offer an epistemological intervention where knowledge is not an artifact, relic, object, document, product or information, and where Indigenous peoples are not disappearing through the inevitable march of progress, nor are they or their ways of knowing sources of primitive capital to be patented or mined. Instead we focus on relationality as the core organizing principle when it comes to the identification, discernment, creation, and continuation of Indigenous systems of knowledge.

3.0 Defining terms of the field

To be able to enter into this space of epistemological and ontological boundary-spanning, we provide clarification on terms commonly used in the fields of KO, intellectual property law and policy, and Native and Indigenous studies, including the subfield of Indigenous librarianship.

We first define KO as a broad field of study focused on the practice, quality, and critique of the way information professionals describe, index, organize, classify and organize materials in information institutions such as libraries and archives, as well as in digital environments (Hjørland 2008). According to Tennis (2008), KO is concerned with documents that are deemed valuable by societies, and thus must reflect values of the society that uses a knowledge organization system (KOS). For reasons that will be explained in this paper, IKO is an emerging field of study focused on the protocols and methods of describing, naming, co-locating, and providing access to objects and materials that are of importance to Indigenous ways of knowing. IKO centers on Indigenous experience and thought, and is concerned with Indigenous rights and title, self-determination, Indigenous interests, sovereignty, and ethical access to knowledge. IKO practices reflect the diversity of Indigenous communities, their information needs, as well as the colonial infrastructures that may house the knowledge (Doyle 2013).

To be clear, there are multiple terms for the knowledge that Indigenous peoples create. Different institutions define terms to meet their policy needs, and scholars select definitive phrases that most accurately reflect the lived realities of Indigenous peoples. One of the most commonly used terms is Indigenous knowledge (IK). IK emerges out of policy work between various programs within the United Nations (UN), the World Intellectual Property Organization (WIPO), and the World Trade Organization (WTO). The UN Convention on Biological Diversity (1997) defines IK as traditional knowledge (TK), meaning the "knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity." WIPO and the WTO rely on this definition to protect IK across boundaries, including political borders. Their protection of IK is on the basis of establishing a supranational and international common economic interest, equity, food security, cultural continuity, environmental sustainability, develop-

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ment, coherence of national and international law, and just and fair use of TK. Many researchers and policymakers use the related term, traditional ecological knowledge (TEK), interchangeably with TK and IK. WIPO also relies on a related term, traditional cultural expressions (TCE) to signify the tangible and intangible expressions of traditional culture and knowledge that may be subject to cultural property and intellectual property protections for the benefit of Indigenous peoples and communities (WIPO 2010). In 2009, the American Library Association (ALA) attempted to adopt a policy statement regarding the role of TCEs in libraries. The policy statement failed to pass ALA's governing body, as ALA members expressed concerns about the conflicting values of the library profession and protocols for protecting Indigenous knowledge.

In this paper, we shift away from the terms defined for the purpose of policy-making and capital accumulation and instead rely on White Earth Chippewa and Choctaw scholar Clara Sue Kidwell's (1993) description of expressions of Indigenous knowledge. Expressions of Indigenous knowledge are the discernable manifestations of knowledge—the nouns that are created when we exercise our relationships with the land, water, ceremonies, people, stories, teachings, and observations (Kidwell 1993). These are the tangible and intangible objects, belongings, art, songs, words, and thoughts that may become part of the collections of information institutions. We note here that though the policy term for TCEs seems to be similar to "expressions of Indigenous knowledge," the two are epistemically situated in diverging bodies of thought and practice. TCE is a term of policy designed to bridge the governmental definitions of cultural property and intellectual property, and exemplifies the democratic and acculturative goals of the ALA. Furthermore, we rely on Kidwell's 1993 definition, because it is the outcome of Indigenous ways of knowing: the actions—the verbs— that describe how Indigenous peoples deliberately engage with the world, people, places, and ideas, resulting in an enduring intergenerational way of life. In her work on the triangulation of meaning, Kanaka Maoli scholar Manulani Aluli Meyer (2008) explains that Indigenous ways of knowing differ from IK in that IK renders ways of knowing static and unchanging, a product for transaction, rather than a means of creating relationships.

Indeed, in this paper we also depend on Cree scholar Shawn Wilson's (2008) conceptualization of relationality, or the acknowledgement that we all exist in relationship to each other, the natural world, ideas, the cosmos, objects, ancestors, and future generations, and furthermore, that we are accountable to those relationships. Wilson's (2008) definition theoretically complements Dei's (2000, 114) definition of Indigenous systems of knowledge (ISK):

> the epistemic saliency of cultural traditions, values, belief systems and world views in any Indigenous society that are imparted to the younger generation by community elders. Such knowledge constitutes an 'Indigenous informed epistemology'. It is a worldview that shapes the community's relations with surrounding environments. It is the product of the direct experience of nature and its relationship with the social world. It is the knowledge that is crucial for the survival of society. It is knowledge that is based on cognitive understandings and interpretations of the social, physical and spiritual worlds. It includes concepts beliefs and perceptions, and experiences of local peoples and their natural and human-build environments.

Additionally, from this vantage point, we are able to note divergent uses of the concept of ontology, where in the western philosophy of science, ontology refers to metaphysical claims about the nature of reality, through either subjective or objective means, and where in the field of KO, ontology is a term referring to the representation of concepts through categories and relations. Indigenous scholars have begun indigenizing ontology as it is used in the philosophical sense, to initiate lines of inquiry as to the nature of reality and claims to truth from an Indigenous paradigm, and to compare and contrast Indigenous metaphysical inquiry with metaphysics informed by scholastic traditions emerging out of the western European Enlightenment. In this research, we use ontology in the latter sense.

In sum, the terms developed by Indigenous scholars more accurately and precisely reflect the experiences of Indigenous peoples, yet in seeing how these terms emerge institutionally, we are able to locate where and how Indigenous peoples and allies must code-switch in their labor as intellectuals and advocates.

4.0 Upholding colonialism

Before we embark on a discussion of IKO, we must contextualize the inherent colonialism in western information institutions that have created barriers to Indigenous knowledge. We must acknowledge the fact that mainstream KOSs uphold colonialism. This might be uncomfortable for some readers, especially those who have yet to engage with the fields of critical librarianship (Accardi et al 2010; Cope 2017; Drabinski 2019; Nicholson and Seale 2018), critical theory, and Native and Indigenous studies. For decades, scholars and practitioners have exposed how knowledge organization systems have upheld colonialism for Indigenous topics and for Indigenous users (Berman 1995; Green 2015; Lawson 2004; Webster and Doyle 2008; Young and Doolittle 1994; Lee 2011; Moorcroft 1993). Indeed, as Svenonius (2000, 2) asserts, "to be so condemned would not be all bad, since reinventing what has been done in different time and circumstances reinvigorates a disci-

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pline, rids it of routinized procedures and ways of thinking, and energizes it by the influx of new ideas and new terminology." Critiques have included use of biased terminology in classification systems (Berman 1995 and 1971; Olson and Schlegl 2001), stereotyping (Young and Doolittle 1994) the silencing of Indigenous perspectives (Moorcroft 1993), and historicizing Native people (Webster and Doyle 2008), among other problems. Scholars and practitioners have introduced critiques and modifications to existing mainstream systems, such as the *Dewey Decimal Classification* and the *Library of Congress Subject Headings* (Green 2015; Furner 2007; Lee 2011; Olson 1998; Pacey 1989). At the same time, others have developed new systems meant to embrace local Indigenous KO priorities, such as the Brian Deer Classification System (Chester 2006; Cherry and Mukunda 2015; MacDonell et al 2003; Swanson 2015), the Australian and Torres Strait Islander thesaurus (Moorcroft 1994, 1997), the Māori Subject Headings (Simpson 2005; Szekely 1997), and the Mashantucket Pequot Thesaurus of American Indian Terminology (Littletree and Metoyer 2015).

KO scholar Hope Olson's work calls for creative ways to see classification differently, and to create changes so that marginalized perspectives can be legitimized (1998). Olson suggests that new techniques need to be developed to make space for marginalized perspectives in our information structures, by making "holes" in the structure to allow other voices to be heard. By doing so, the power shifts to the "other:" "power of voice, power of construction, power of definition" (Olson 2002, 227). However, Olson (1999) reinforces the otherness of Indigenous ways of knowing by engaging in a discussion of what ISK lack compared to "our standard practices of classification" (101). Such misunderstanding shapes the contributions of allies who work in the space of ISK, and reveals their epistemic blind spots, specifically, an intellectual, social, and political underestimation of the effect of colonialism and its ongoing habitus in the lives of settlers who are working through their relationships with Indigenous peoples while occupying Indigenous lands. Thus, what is needed more than ever at this time is scholarship that centers Indigenous ways of knowing, specifically drawing from a scholarship grounded in Indigenous librarianship.

5.0 The ethos of Indigenous systems of knowledge: living a good life

When we think deeply about Indigenous librarianship as praxis, that is, as a way of knowing that is realized through deliberate action, we are able to discern its distinctiveness in the broader field of library and information science. Where the field of KO is often structured around principles of controlled vocabulary, specificity, literary warrant, coherence and standardization, and moving from the general to the specific in subject categorization, principles of Indigenous librarianship are grounded in a more community-based approach, namely, a relational approach. Relationality and the relational approach must not be confused with the KO practice of finding linkages, or relationships, among concepts in order to build semantic webs or ontologies. For Indigenous librarianship, the relational approach is at once both ontological and axiological, meaning it is oriented toward a way of making sense of the world as well as the definition of a right way to live a good life, according to Indigenous ways.

Broadly, Indigenous librarianship is a practice of librarianship that honors Indigenous ways of knowing, relationality, and relational accountability, while privileging Indigenous people and communities, including their inherent sovereignty and their rights to control their systems of knowledge (Burns et al 2009). It is a field that has been informed by Indigenous scholars and librarians who have explored the importance of kinship within an Indigenous information literacy framework (Loyer 2017), Indigenous values and relationality in academic library services (Lee 2011), and infusing Indigenous lifeways in LIS curriculum (Roy 2015; 2017), to name a few. It is a field that emerged to counter the effects of colonization through Anglo-American information systems that seek to collect, preserve, catalog, classify, and provide access to IK for the benefit of the modern nation-state, "humankind," and capitalism.

Those who work with KO systems must understand Indigenous perspectives to create better systems for Indigenous communities and content (Duarte and Belarde-Lewis 2015; Littletree 2019; Littletree and Metoyer 2015; Doyle 2013). Doyle (2013), building on the seminal work of Torres Strait Islander scholar Martin Nakata (2007; 2008, 305), presents a theoretical framework she calls "Indigenous knowledge organization @ Cultural Interface." It is "comprised of an Indigenous social ontology, a relational Indigenous ethics, and humanistic commitment to more equitable outcomes for Indigenous learners." Doyle's focus on naming, claiming, and (re)creating uncovers seven principles of design used by Indigenous designers of KOSs. These seven principles are: Indigenous authority, Indigenous diversity, wholism and interrelatedness, Indigenous continuity, Aboriginal user warrant, designer responsibility, and institutional responsibility. One can infer how different these principles are from previously mentioned western principles informing KO. They are different in that they provide a space for ontological heterogeneity, questions about the right-to-know, and the resiliency and liberatory capacity of Indigenous peoples existing in a state of colonial domination.

Relationality is what distinguishes Indigenous ways of knowing from western knowledge in a fundamental way. Cree-Métis academic librarian and scholar Jessie Loyer

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(2017) explains how the nêhiwaw (Cree) and Michif (Métis) law of wâhkôhtowin (the importance of relationships and relational accountability) can inform an Indigenous information literacy practice. Loyer demonstrates the importance of radical love and being accountable to all our relations, including kin, land, stories, places, patrons, and library materials in the work of Indigenous librarianship. For Indigenous peoples, to live a good life is to be conscientious of the myriad sovereign agreements that allow all beings to co-exist in a continuous state of creation (Watts 2013). As Indigenous peoples, through our relationships, we belong to our landscapes, places, languages, histories, ceremonies, peoples, families, nations, and clans. The responsibility of our belonging helps us live a balanced, good life.

Indigenous ways of knowing are, therefore, based on observing and living in an Indigenous way, communicating lessons and insights by talking story, singing, and teaching—doing what anthropologists call the oral tradition—and by weaving, carving, making pottery, designing and building edifices, making art, fashioning tools and weapons, growing and creating medicine, designing calendars and other measures of eras. Through intentional safekeeping and curation, as well as illicit practices of archaeological and anthropological theft and black-market sales, the expressions of Indigenous knowledge end up in libraries, archives and museums as books, documents, recordings, interviews, films, and other collectible objects. To appropriately describe and provide access to these expressions, it is insufficient to care only for the object, which is the material expression of a people's way of life. Instead, the knowledge itself, including the means of its making, must be treated with respect, with a sense of responsibility toward the restoration of justice for Indigenous peoples in light of the history of colonialism, including the establishment of fair and just reciprocal relationships between the holding institutions and the Indigenous peoples who created the original expressions.

6.0 A conceptual model of Indigenous systems of knowledge

From the vantage point of relationality, we are able to more ethically and precisely evaluate expressions of Indigenous knowledge. Considering the dynamics of belonging inherent to relationality, and how expressions are the outcomes of those dynamics, allows us to forward a conceptual model of ISK. Understanding the working components of ISK helps us as practitioners of KO to acknowledge and legitimize the reasons for Indigenous approaches to KO, particularly as we continue to work through colonial institutions. It also helps us to more deeply understand existing definitions of ISK. To help explain the model, we revisit Dei's (2000, 114) definition of ISK:

> I refer specifically to the epistemic saliency of cultural traditions, values, belief systems and world views in any Indigenous society that are imparted to the younger generation by community elders. Such knowledge constitutes an 'Indigenous informed epistemology'. It is a worldview that shapes the community's relations with surrounding environments. It is the product of the direct experience of nature and its relationship with the social world. It is the knowledge that is crucial for the survival of society. It is knowledge that is based on cognitive understandings and interpretations of the social, physical and spiritual worlds. It includes concepts beliefs and perceptions, and experiences of local peoples and their natural and human-build environments.

Dei's (2000) explanation is comprehensive in that it acknowledges that the survival of Indigenous societies is the function of ISK, and that this survival relies on deliberate connections to the social, physical, and spiritual world. In that sense, ISK can be understood as the philosophies and community practices that for generations have formed the foundation for what Anishinaabe scholar Gerald Vizenor (1998, vii) refers to as Native survivance: "an active sense of presence, the continuance of native stories, not a mere reaction, or a survivable name .... Native survivance stories are renunciations of dominance, tragedy and victimry." Applied ISK advances the agency of Indigenous peoples in society rather than the value of the products of their knowing according to an Anglo-American society and associated regulation of a bibliographic universe.

Figure 1 depicts a simplified model of ISK, where concepts of relationality/holism, peoplehood, Indigenous ways of knowing, expressions of Indigenous knowledge, institutions, and values of respect, responsibility, and reciprocity are layered in a cyclical and interlaced structure. Rendering the ISK framework as a conceptual model allows us to discern how the components work together to shape our Indigenous ways of deliberating and interacting in the world. The components function to achieve a goal or set of goals, in this case, a right relation among all the beings in a biome, or a good life. The circular ISK framework is inspired by Archibald's (2008) Holism model in which concentric circles are used to depict wellbeing as related to spiritual, emotional, physical, and intellectual spheres as they surround the circular symbols of oneself, family, community, and nation. At the bottom of the ISK diagram is a shape that contains the words responsibility, respect, and reciprocity, the three Rs. This shape is meant to represent a cradle, indicating that the practices of the three Rs cradle, or support, the entire system. Cradles, specifically, cradleboards, are important in many Indigenous communities as ways to protect our children. The cradle formed by the three Rs also

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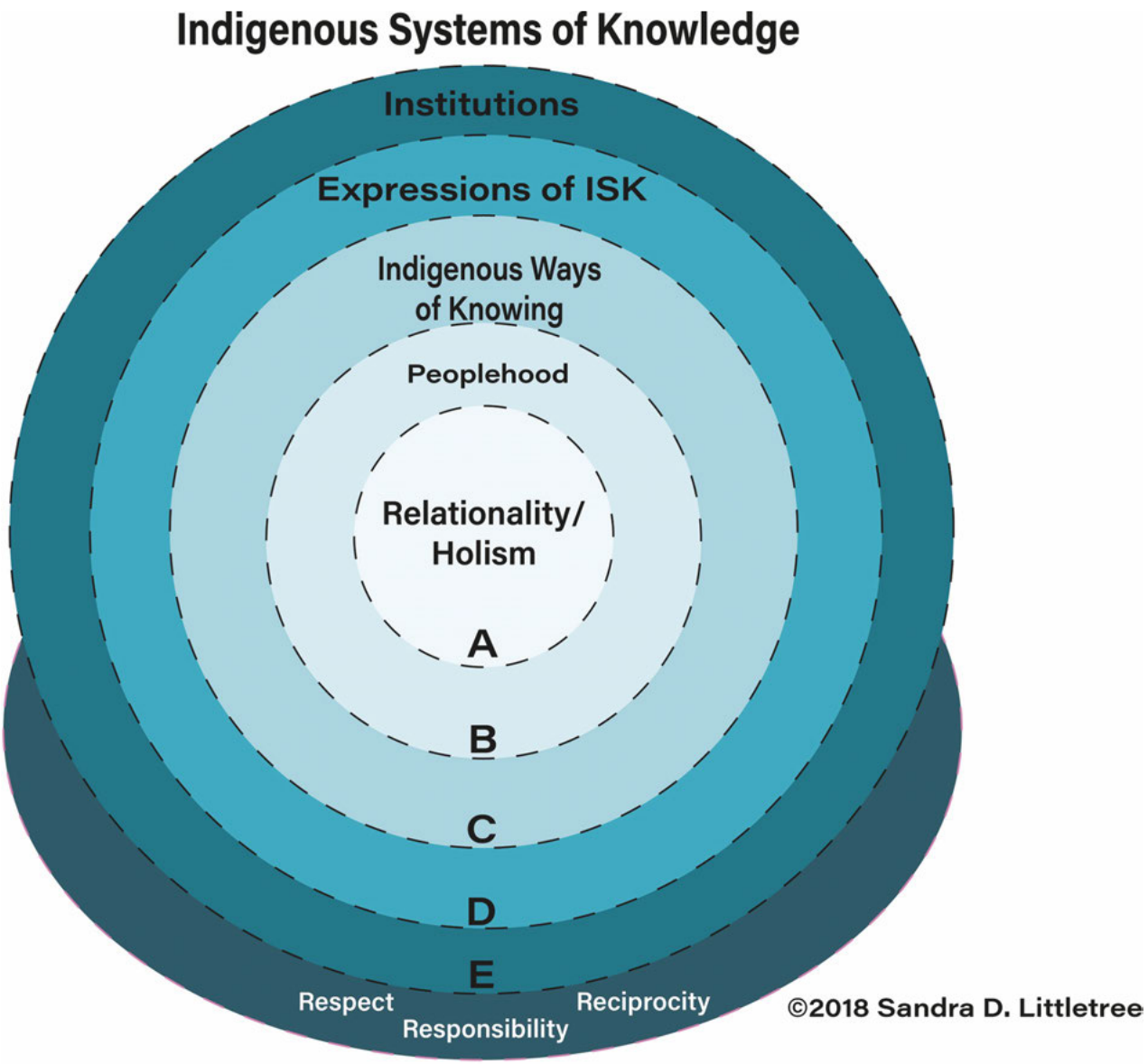

Figure 1. Indigenous systems of knowledge conceptual model.

protects our future generations through the practices of responsibility, respect, and reciprocity.

The layers are individually labeled and numbered, but the layers should not be construed as independent or isolated. Dashed lines are used to indicate that the layers interact and cannot be separated. The goal of the illustration is to depict how the "essence of Native American knowledge is the understanding of how things are interrelated and continuously interacting" (Holm, Pearson, and Chavez 2003, 20). As such, the layers should be seen as overlapping circles, with relationality at the center, energizing each subsequent layer. Moving outward, the layers demonstrate increasingly visible and tangible aspects of ISK, which eventually manifest in multiple ways through the institutions that hold expressions of Indigenous knowledge.

For Indigenous peoples, the ISK framework might seem like nothing extraordinary. It is just the way we live. Indigenous peoples might also sense a danger in going so far as to create a visual model that might inadvertently serve to other Indigenous peoples and their expressions. Indeed, as pointed out by Māori librarian Helen Moewaka-Barnes (2015, 30): "the need to define, discuss or explain its existence in itself serves as a reminder of the power of colonization." Nevertheless, the persistence of colonialism makes it imperative to examine these systems as Indigenous expressions of knowledge often comprise contested collections in libraries, archives, and museums.

Additionally, the conceptual model presented here may seem overly simplistic to Indigenous partners or those who have deep insight into Indigenous ways of knowing. The

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model is not intended to be a complete and closed depiction of Indigenous ways of knowing. Rather, it is meant to serve as a bridge—a boundary-spanner—between the often incommensurable worlds of meaning and practice that shape western and Indigenous practices of KO. It is our hope that the diagram might serve as a tool to support the institutional and interpersonal justification of reciprocal, responsible relationship-building as well as the labor of becoming intelligent about relationality in the context of Indigenous KO efforts. We hope that it can be integrated into LIS and KO curricula and trainings as a visual representation of the broader ISK framework. To this end, we provide two cases—Navajo weaving and the Zuni language practices—to give context to both the conceptual framework of ISK as well as the nested layers of the model. The components of the model are discussed from the center outward or, in an epistemological sense, from their thought-origin to their expression to their institutional location.

6.1 Circle A: centering relationality and holism

Relationality is the key conceptual underpinnings of ISK; it is thus at the center of the model. Everything starts with relationships. Relationships energize the ways we interact with the world and the ways of knowing that emerge from those experiences. The relational way of being is considered by many to be the heart of what it means to be Indigenous (Wilson 2008). Relationality is dynamic. It allows us to actively participate in our world, ensuring that our interactions are compassionate, loving, and caring, as we become accountable to those with whom we relate. Wilson (2008, 80) writes:

> Identity for indigenous people is grounded in the relationships with the land, their ancestors who have returned to the land and with future generations who will come into being on the land. Rather than viewing ourselves as being in relationship with other people or things, we are the relationships that we hold and are part of.

Relationality is also informed by holism, an Indigenous philosophical concept referring to the interrelatedness between the intellectual, spiritual, emotional, and physical realms to form a whole, healthy person (Archibald 2008). Often referred to as the philosophy of the four directions, the spiritual in this sense refers to Indigenous metaphysical values and beliefs, including beliefs related to the Creator and acts of co-creation. In this sense, the physical refers to the development and care of the body, including behavior and action as one's body relates to the bodies of others in a physical terrain. The development of holism extends to and is mutually influenced by one's family, community, band, nation, homeland, and landscape or waterscape.

It is imperative that KO scholars interested in ISK, or those who may be utilizing Indigenous collections and materials in efforts to map the unmappable, contemplate the origins of the objects in their collections. Before modern nation-state ethnographers, anthropologists, and linguists began documenting what we now refer to as ISK, entire societies lived by their ways of knowing, and expressed their knowing for hundreds and thousands of years. The books, articles, exhibits, and collections that comprise the holdings in our institutions began as relationships. Bruchac (2018) describes with painful clarity how a century of prominent ethnographers suppressed their awareness of their relationships with their Indigenous "informants," and in so doing left behind a canon of knowledge about Indigenous peoples that was taboo, erroneous, misinterpreted, romanticized, and deadened so that the settler imaginary might live on. To avoid this historical truth by turning away from the need for changes in KO practice is to advance a virulent ignorance about Indigenous peoples and the landscapes in which we live.

To illustrate the importance of relationality in KO, we trace two cases—Diné (Navajo) weaving practices and Shiwi'ma Bena:we', the A:Shiwi (Zuni) language—as examples of Indigenous systems of knowledge that carry their relationality from creation all the way to institutions that name, describe, and categorize the expressions of, respectively, Diné and A:Shiwi knowledge. Relationality, for both Diné and A:Shiwi, is about the deep belonging of the peoples to their homelands, *Diné Bikéyah* and *Shiwina*. What it means to be Diné or A:Shiwi is not a matter of where someone is born or whether or not they have a citizen's form of ID. It means that not only are they born to a Diné or A:Shiwi family, but moreover, that family belongs to an ancestral line that has lived in metaphysical harmony with their homeland for thousands of years (both tribes have homelands located in what is now the southwest US). This profound sense of belonging emerges in the myriad mundane agreements that Diné and A:Shiwi peoples make every day in the world around them; it is a way of interacting, which an outsider might recognize as "culture," but which the peoples themselves recognize as the outward expression of their most profound philosophical and spiritual teachings. For Diné, relationality is often expressed as *k'é*, an ethic guiding interpersonal and interfamilial compassion and kindness, as well as *hózhó*, beauty, harmony, peace, and balance. For A:Shiwi, relationality is expressed in the very name of the people and in blessings. Shiwi language advocate Shaun Tsebetsaye explains (personal communication, April 9, 2019) the name of the community as: "A:shiwi is derived from the root word shiwani or priest. So the word a:shiwi means, of priestly, holy and peaceful people." Similarly, blessings and prayers continuously seek and ask for *k'oshi*, for all to be good and well (Curtis Quam personal commu-

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nication, April 9, 2019)—in other words, encouraging and praying for the good life for ourselves and all others.

6.2 Circle B: peoplehood

Belonging to a people—a people who claim you as much as you claim them—is an integral aspect of what it means to be Indigenous. Peoplehood is a status distinct from personhood, because it situates an Indigenous person's sense of self and belonging as the outcome of the peoples' interrelated command over an (non-European) Indigenous language, a sacred history and accompanying ceremonial cycle, communal conscientiousness of kinship, and continuous pre-European habitation within a place or territory (Holm, Pearson, and Chavis 2003; Thomas 1990). A person is Indigenous because of their relationships within the sphere of activities determined by their people. For some Indigenous individuals, their relationships with these activities might be stronger or weaker. For instance, colonization displaced peoples from their traditional territories, and experiences of removal, kidnaping, and the boarding schools have corroded Indigenous peoples' relationships with their languages and ceremonial cycles. Despite the effects of colonialism, Indigenous peoples continuously interact with the activities defining peoplehood, even if the strongest relationships existed with their ancestors.

Land, language, sacred history and ceremonial cycle, and kinship are embodied in Diné philosophies and practices of weaving. Navajo photographer Monty Roessel (1995, 6) recounts the first time he witnessed his mother weaving:

> When I entered the room, she motioned me to sit by her in front of the loom. She did not stop weaving and she did not stop singing. After a few minutes, I asked why she was weaving. She told me that as long as she had her loom, she was home—in *Diné Bekaya* (Navajoland). "This is who we are," she said. "The loom connects me with the sacred mountains, and the song connects me with my mother."

Diné weavers do their work not as individual artisans, but rather, as members of a people who have vast and deep connections to the land, oral teachings, and ancestral memory.

The activities defining peoplehood are also apparent in the philosophies and practices guiding A:Shiwi language work. Belarde-Lewis (2013) examines the vital role of Shiwi'ma A:wan Bena:we' in the protection and documentation of A:Shiwi history and sacred ways of knowing through the arts, particularly through the Zuni Map Art Project (ZMAP). The Zuni language is a linguistic isolate (Ferguson and Hart 1985), which makes the history and emergence of the people particularly compelling. The ZMAP consists of thirty-five fine art map paintings documenting the emergence and migration history of the A:shiwi. When examined through the lens of peoplehood, Belarde-Lewis (2013) found Shiwi'ma Bena:we to be a critical element in the perpetuation of A:Shiwi relationship to land and to the continuation of the complex ceremonial calendar, which, in turn, is another method of recounting the emergence and migration history of the Zuni people. Both general and esoteric expressions of Shiwi knowledge are embedded in the map paintings. The unlabeled maps provide opportunities for community members to deepen their own understandings of Zuni history. Non-Zunis have been invited to appreciate and learn about Zuni culture, history, and aesthetics through the public exhibition of the maps in Flagstaff, Albuquerque, Los Angeles, and New York City.

6.3 Circle C: Indigenous ways of knowing

The activities defining peoplehood inform Indigenous ways of knowing, including developing, creating, organizing, sharing, and disseminating knowledge. Tewa scholar Gregory Cajete (2000; 2004) uses the term Native science to describe the community practices and philosophies that connect people to place, language, and ceremony, and that have led to knowledge and innovation based on creative exploration of and participation in the natural world. Indigenous ways of knowing are the ways Indigenous peoples have been creating, transmitting, categorizing, and preserving knowledge since the beginning of time. Documented as verbs, they are the active processes such as storywork (Archibald 2008), observing, creating art, relating to elders and children, planting, cooking, dancing, praying, hunting, fishing, listening, running, and dreaming. These are the experiences we have when we exercise our relationships with family, clan, ideas, language, land, ceremonial cycle, and sacred history.

We note here that there is an important distinction between knowledge and knowing. Kanaka Maoli scholar Manulani Aluli Meyer (2008, 221) explains how:

> Knowledge [is] the by-product of slow and deliberate dialogue with an idea, with others' knowing, or with one's own experience with the world. Knowing [is] in relationship with knowledge, a nested idea that deepened information (knowledge) through direct experience (knowing). The focus is with connection and our capacity to be changed with the exchange.

Knowing stems from direct experiences, such as telling, listening, and using traditional stories and teachings in our lives. Knowing also comes from carefully observing the natural environment and understanding of the effects of forces in the world. Standing Rock Sioux scholar Vine Deloria, Jr. (2006, xxiv-xxv) writes, "From observing the world around

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them, they could see orderly processes that marked the way organic life behaved. From the obvious motions of the sun and moon to the effects of periodic winds, rains, and snows, the regularity of nature suggested some greater power that guaranteed enough stability to be reliable and within which lives had meaning."

To weave according to a Diné philosophy and to speak in the Zuni language is to exercise, respectively, a Diné way of knowing and a Zuni way of knowing. Diné weaving technology and practices are customarily passed through matrilineal lines (Lamphere 2007; Teller Ornelas and Teller Pete 2018) and taught through apprenticeships. The designs and colors represent specific geographic regions of Navajo territories (Roessel 1995; Hedlund 2004; Begay 1996) and are aspects of Diné ways of knowing. The ancient weaving tradition is grounded in Diné cosmologies and family history (Hedlund 2004), which accompany stories describing the Navajo beliefs of Spider Woman and how she gifted weaving expertise to the Navajo (Teller Ornelas and Teller Pete 2018). In a similar manner, Shiwi'ma Bena:we permeates every facet of the complex ceremonial calendar maintained by religious leaders and community members in Zuni Pueblo. For these two practices, the ways of knowing include observing, listening, caring for sheep, shearing and carding wool, gathering plants for dyes, setting up a loom and threads, weaving, cooking, praying, cleaning, dancing, preparing ceremonial clothing, caring for visiting relatives, aligning ceremonies with celestial cycles, and speaking the languages to language learners so they can reinvigorate their belonging.

6.4 Circle D: expressions of Indigenous systems of knowledge

Expressions of Indigenous knowledge are the manifestation of Indigenous cultures. The manifestations can be tangible, taking the physical forms of weavings, pottery, buildings, weapons, calendars, and gardens. Intangible manifestations can be songs, prayers, dances, gardening practices, customary food recipes, hunting techniques, and medicinal plant knowledge.

Kidwell (1993) describes Indigenous peoples' careful and systematic observation of the natural world in which the people developed complex sets of knowledge systems that helped them to understand, interact with, and predict elements in the environment. Innovations such as astronomy, technology and medicine, domesticated plants and animals, and precise calendars were the result of Indigenous peoples' observations and close interactions with their environments. Kidwell's description, although based on the philosophies and practices at play in 1492 on the eve of the European invasion of Tawantinsuyu, Abya Yala, and Turtle Island (now known as North America), demonstrates the longevity and the complexity of these expressions of Indigenous knowledge, as well as how these expressions have survived for many contemporary Native peoples.

In information institutions, this is where much of our attention is given. We hold the objects in our hands, try to come up with the best words to describe them, think about where they fit with regard to similarities and differences from other objects in our collections, and then move on to categorizing the next set of objects. But without understanding these objects as expressions of Indigenous systems of knowledge, we risk mislabeling objects, reducing them to a mere characteristic description, separating them from other expressions needed for their use and interpretation, and evacuating them of their meaning. With regard to Diné weaving, these expressions might be books and papers about weaving practices, rugs, dresses, blankets, looms and other tools, recordings of weavers, photos, and museum catalogues. With regard to the Zuni language, these expressions might be books and papers about the language, books and papers written in the language, art and images that can only be interpreted through knowledge of the language or with assistance of a language speaker, and recordings of individuals speaking the language.

6.5 Circle E: information institutions: libraries, archives and museums

It is important to acknowledge the role that mainstream information institutions play in the collection, cataloging and preservation of the expressions of Indigenous systems of knowledge. These libraries, archives, museums, and institutions of higher education—especially if they are not Indigenous-run— may not acknowledge the Indigenous ways of knowing and relationality undergirding the creation of Indigenous collections. For these institutions, their approach to Indigenous objects might only address the top two layers of our conceptual model: institutions and, superficially, expressions of Indigenous systems of knowledge. Such an approach is symptomatic of the settler's epistemic narrow-mindedness, resulting in a perpetuation of ignorance about the essence of the objects: the communal and familial relationality and complex ways of knowing that resulted in their making. If institutions ignore the relationality that infuses the object with meaning, the institutions risk breach of protocol when collecting, describing, organizing, and providing access to materials. Institutions that hold these expressions of Indigenous systems of knowledge in their collections, whether it appears in books, films, primary sources, or journal articles, must acknowledge the importance of relationality when designing KOSs.

Continuing the example of Diné weaving and A:shiwi Bena:we' at the institutional level, we find expressions of Indigenous systems of knowledge in university libraries, archival collections, museums, and databases. In the case of

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Diné weaving, there are many institutions that hold expressions of this knowledge; however, we point to the Navajo Nation Museum, located in Window Rock, Arizona, and the Gloria Ross Tapestry Center, located at the University of Arizona. In the case of the Zuni language, we selected two institutions that use and hold the language in their collections: the A:shiwi A:wan Museum and Heritage Center located in Zuni Pueblo, and the University of New Mexico (UNM)'s Zuni Language Materials Collection. For all of these institutions, we might recommend compassionately and financially supporting activities that increase *k'é*, *hózhó*, and *k'okshi* with regard to these particular expressions.

6.6 Cradling the system: reciprocity, responsibility, respect

The importance of handling knowledge with respect and responsibility stems from the core: relationality. Anishinaabe scholar Allison B. Krebs (2012, 177) reinforces this idea, reminding us that, "as Indigenous peoples we exist within dynamic and interactive webs of relationship governed by mutual respect, reciprocity, and relational accountability." Unwritten protocols govern relational accountability in Indigenous communities. For example, knowing when to give and receive gifts, understanding seasonal influences on stories and teachings, and honoring clan member responsibilities are all orally transmitted, learned activities, and they inform Indigenous peoples' relational way of being.

Institutions that hold IK may implement various methods to incorporate relational accountability in their collections and KOSs. Advocates may apply guidelines, such as the *Protocols for Native American Archival Materials* (First Archivist Circle 2007) and the *Aboriginal and Torres Strait Islander Protocols for Libraries, Archives, and Information* (Aboriginal and Torres Strait Islander Library 2012), to develop practices that respect ISK. The ALA's *Librarianship and Traditional Cultural Expressions* (American Library Association 2010) has the potential to re-emerge as a useful and powerful document if its users embrace the inherent relationality of expressions of Indigenous systems of knowledge, as well as the responsibility, reciprocity, and respect these expressions deserve.

With regard to Diné weaving, leaders in institutions may realize they need to strengthen their intellectual and emotional conscientiousness about Diné protocols of sharing creation stories and as well as their sensitivity about the trauma associated with discussing painful events in history, such as the Long Walk, or *Hwéeldi.* Institutional leaders—including directors, administrators, advisory boards, curators, librarians, archivists, and docents—might also consider their roles in light of reciprocity, that is, giving back to Diné people by helping them recover Diné intellectual traditions through their collections (Denetdale 2007).

Respect for Zuni knowledge and language is exemplified through the following anecdote. When describing the yearlong process leading up to the first commission, former director of the A:shiwi A:wan Museum and Heritage Center Jim Enote recounted (Enote and McLerran 2011, 6) that the first decision of a community-wide advisory group was to "decide what was not going to be mapped." The community-based decision to withhold active sites of religious activity on the maps reflects the communities' cautionary stance toward ethnologists of all stripes who have been researching and publishing about the people without prior and informed consent since the 1880s (McFeely 2001; Becvar and Srinivasan 2009; Isaac 2007, Belarde-Lewis 2012). We note here a clear controversy regarding the progressive American ideology that requires that public libraries and state archives provide public access to all information in their collections in support of democratic values around free expression. Because of the history of American colonialism, this idea runs counter to the colonial reality of sovereign Native nations, the members of which must exert principles of inherent and government-to-government sovereignty to curb the exploitative and assimilationist habitus of taking that has enabled American imperialism. For sovereign Native nations governing through colonization, principles of national security, domestic privacy, cultural revitalization, and domestic harmony inform their decisions about access more than democratic ideals writ large. As Wise and Kostelecky (2018) note, inviting community members in for consultation to discuss their language materials was of paramount importance as the University of New Mexico library system digitized Shiwi language materials. They found that collaboration with community members dramatically improved discoverability of the collection, and helped UNM library staff more deeply consider their role as stewards of the language materials now in their collection. Community consultation was necessary as some of the materials are culturally sensitive. The materials were digitized and are available online; however, the description notes inform the visitor that the still image cannot be translated, and that speakers of the Zuni language will be able to identify information provided by the image. The inclusion of the image, while withholding the exact meaning and translation of the image, is an example of how academic and library institutions can work with Native communities to ensure respectful engagement with the communities and their materials.

We conclude this section by including two illustrations: Table 1 summarizes the Diné weaving case and the A:shiwi A:wan Bena:we case, from the core of relationality outward to the institutions that hold the expressions of Diné and A:shiwi systems of knowledge. Obviously, the ways of knowing shaping these two cases are profound and beyond the scope of this paper. By reviewing Table 1, however, we

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	A:shiwi A:wan Bena:we	**Diné Weaving**
Circle A: Relationality	– *a:shiwi, kok'shi* – deep connection to homelands – linguistic isolate	– *k'é, hózhó,* – deep connection to homelands
Circle B: Peoplehood	– essential to all quadrants of the Peoplehood model	– tangible and metaphorical connection to lands and family
Circle C: Indigenous Ways of Knowing (the verbs)	– observing, listening, cooking, visiting, praying, cleaning, grinding corn, offering cornmeal, making food offerings, dancing, preparing ceremonial clothing, caring for visiting relatives, aligning ceremonies with celestial cycles, speaking the language,	– observing, listening, caring for sheep, shearing and carding wool, gathering plants for dyes, setting up a loom and threads, weaving, cooking, praying, cleaning, dancing, preparing ceremonial clothing, caring for visiting relatives – sharing stories of Spider Woman – artistic genealogies
Circle D: Expressions of ISK (the nouns)	– Zuni Map Art Project – Digitized language resources – Recordings, translations, maps	– rugs, blankets, robes – weaving tools – books, catalogs, photos, recordings
Circle E: Institutions	– A:shiwi A:wan Museum and Heritage Center – Zuni Language Materials Collection, University of New Mexico	– Navajo Nation Museum – Gloria F. Ross Tapestry Center, University of Arizona
Reciprocity, Responsibility, Respect	– community decisions regarding access to land-based knowledge, language materials	– recovering Diné intellectual traditions – sensitivity to cultural protocols and painful histories

Table 1. Two cases of Indigenous systems of knowledge.

hope that readers are more easily able to differentiate the components of the ISK conceptual model as well as to appreciate how they overlap. Indeed, drawing lines around these examples and placing certain examples in one category or another feels counterintuitive. This, perhaps, demonstrates the fundamental challenge of attempting to organize ISK using a categorical approach. As Indigenous thinkers, it retains the epistemic and cognitive tensions inherent to deeply philosophical labor.

Figure 2, below, is the ISK conceptual model with examples for each layer of the model, rendered for further study and critique.

7.0 Summary

This research asks: what are frequently used definitions for the knowledge created by Indigenous peoples? How do these definitions relate to the field of KO and the subfield of IKO? What does a conceptual model of Indigenous systems of knowledge reveal about KO practices and principles? We find that there are similarities and differences between the terms defining the kinds of knowledge created by Indigenous peoples. These similarities and differences can be explained in part by their epistemic inclusion or exclusion of the dynamics of relationality as these are enacted by Indigenous peoples in the context of their peoplehood. How KO practitioners use these terms—in particular how they are used to guide policy—shapes the capacity of their institutions to engage in practices of reciprocity, responsibility, and respect. Finally, a conceptual model of ISK surfaces transformations in ways of knowing as these move from thought-origin to material expression, and also reveals the relative capacity of existing institutions to address these transformations through alternatively: a) unsettling and decolonizing the mentalities shaping KO practice; b) shaping changes in existing KO techniques; c) adjusting institutional policy and programming; and, d) rereading KO literature in light of the histories of colonization shaping the ways we perceive and evaluate Indigenous ways of knowing.

8.0 Conclusion

Before addressing the techniques and methods of trying to fix current KOSs for Indigenous communities, it is important to take the time and effort to understand both the history of coloniality in KO, as well as the philosophical basis of Indigenous systems of knowledge. This article provided both. We spent time contextualizing the detrimental effects of colonization with regard to Indigenous knowledge in its various forms. We presented a conceptual model of Indigenous systems of knowledge, focusing on relationality as an integral part of ISK, a concept that should be considered essential to

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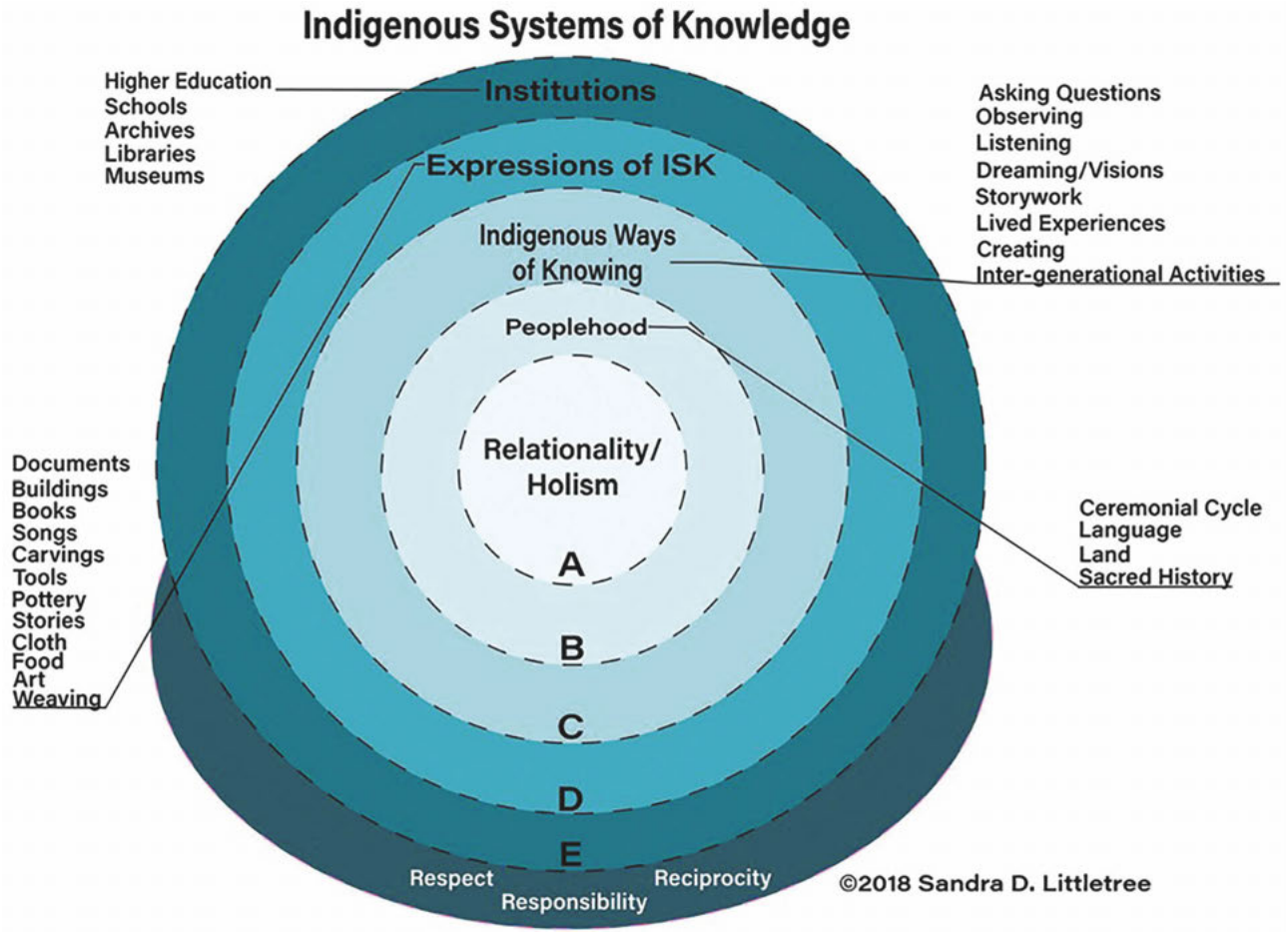

Figure 2. Indigenous systems of knowledge conceptual model with examples.

any IKO project. Centering relationality is a decolonizing technique that allows Indigenous ontologies to emerge in otherwise colonial institutions. We understand that preserving and providing access to Indigenous ways of knowing for the benefit of Indigenous peoples through colonial institutions was never the intended goal. As Indigenous scholars and educators, however, we engage in a form of epistemological code-switching as we bridge often incommensurable knowledge systems. We do this with relational accountability in mind, knowing that we are responsible to our respective Indigenous communities and the field of Indigenous librarianship. At the same time, we are scientists and thinkers who are accountable to the larger fields of KO, information science, and Native and Indigenous studies. We encourage readers to also center relationality in their knowledge organization research and practice.

References

Aboriginal and Torres Strait Islander Library, Information and Resource Network. 2012. "Aboriginal and Torres Strait Islander Protocols for Libraries, Archives, and Information Services."_http://aiatsis.gov.au/atsilirn/protocols.php

Accardi, Maria T., Emily Drabinski and Alana Kumbier. 2010. *Critical Library Instruction: Theories and Methods.* Duluth, MN: Library Juice.

Archibald, Jo-Ann. 2008. *Indigenous Storywork: Educating the Heart, Mind, Body, and Spirit*. Vancouver: UBC Press.

American Library Association. 2010. "Librarianship and Traditional Cultural Expressions: Nurturing Understanding and Respect Traditional Cultural Expression and Libraries." http://www.ala.org/membership/sites/ala.org.membership/files/content/librarianship_and_traditional_cultural_expressions_nurturing_understanding _and_respect_jan2010.pdf

Bardenheier, Penelope, Elizabeth H. Wilkinson and Hēmi Dale. 2015. "Ki Te Tika Te Hanga, Ka Pakari Te Kete: With the Right Structure We Weave a Strong Basket." *Cataloging & Classification Quarterly* 53, nos. 5-6: 496-519. doi:10.1080/01639374.2015.1008716

https://doi.org/10.5771/0943-7444-2020-5-410 https://www.inlibra.com/de/page/agb - Open Access - (cc) BY

Becvar, Katherine and Ramesh Srinivasan. 2009. "Indigenous Knowledge and Culturally Responsive Methods in Information Research 1." *The Library Quarterly* 79: 421-41.

Belarde-Lewis, Miranda. 2012. "But the Library of Congress Has These! Restricting Photographs in a Previously Exposed Pueblo Community." Paper presented at Native and Indigenous Studies Association Conference.

Belarde-Lewis, Miranda. 2013. "From Six Directions: Documenting and Protecting Zuni Knowledge in Multiple Environments." PhD diss., University of Washington.

Berman, Sanford. 1995. "When the Subject Is Indians." *American Indian Libraries Newsletter* 18 no. 2. http://www.nativeculturelinks.com/ailanewsW95_LCindians.html

Bruchac, Margaret M. 2018. *Savage Kin: Indigenous Informants and American Anthropologists.* Tucson, AZ: University of Arizona Press.

Burns, Kathleen, Ann Doyle, Gene Joseph and Allison Krebs. 2009. "Indigenous Librarianship." In *Encyclopedia of Library and Information Sciences,* ed. Marcia J. Bates and Mary Niles Maack. 4th ed. Boca Raton, FL: CRC Press, 2330-46.

Cajete, Gregory. 2000. *Native Science: Natural Laws of Interdependence*. Santa Fe, NM: Clear Light Publishers.

Cajete, Gregory. 2004. "Philosophy of Native Science." In *American Indian Thought: Philosophical Essays*, ed. Anne Waters. Malden, MA: Blackwell, 45-57.

Chester, George Gregory. 2006. "Proposed Tribal College Cataloging Systems: From Isolation to Association". Ph.D diss., University of Minnesota.

Cherry, Alissa and Keshav Mukunda. 2015. "A Case Study in Indigenous Classification: Revisiting and Reviving the Brian Deer Scheme." *Cataloging & Classification Quarterly* 53, nos. 5-6: 548-67. doi:10.1080/01639374.2015.1008717

Cope, Jonathan. 2017. "Four Theses for Critical Library and Information Studies: A Manifesto." *Journal of Critical Library and Information Studies* 1 no.1: 1-8.

Dei, George J. Sefa. 2000. "Rethinking the Role of Indigenous Knowledges in the Academy." *International Journal of Inclusive Education* 4: 111-32.

Deloria, Vine. 1978. "The Right to Know: A Paper Prepared for the White House Pre-Conference on Indian Library and Information Services on or Near Reservations." Washington, DC: Office of Library and Information Services, U.S. Dept. of the Interior.

Deloria, Vine. 2006. *The World We Used to Live in: Remembering the Powers of the Medicine Men*. Golden, CO: Fulcrum.

Denetdale, Jennifer Nez. 2007. *Reclaiming Diné History: The Legacies of Navajo Chief Manuelito and Juanita.* Tucson, AZ: University of Arizona Press.

Doyle, Ann Mary. 2013. "Naming, Claiming, and (Re)Creating: Indigenous Knowledge Organization at the Cultural Interface." PhD diss., University of British Columbia.

Drabinski, Emily. 2019. "What is critical about critical librarianship?" *Art Libraries Journal* 44: 49-57. doi:10.1017/alj.2019.3

Duarte, Marisa Elena and Miranda Belarde-Lewis. 2015. "Imagining: Creating Spaces for Indigenous Ontologies." *Cataloging & Classification Quarterly* 53, nos. 5-6: 677-702. doi:10.1080/01639374.2015.1018396

Enote, Jim and Jennifer McLerran. 2011. *A:shiwi A:wan Ulohnanne, The Zuni World*. Zuni, NM: A:shiwi A:wan Museum & Heritage Center; Flagstaff, AZ: Museum of Northern Arizona.

Ferguson, T. J., E. Richard Hart, Ronald Stauber and Troy Lucio. 1985. *A Zuni Atlas*. Civilization of the American Indian Series 172. Norman: University of Oklahoma Press.

First Archivist Circle. 2007. "Protocols for Native American Archival Materials." http://www2.nau.edu/libnap-p/protocols.html

Fixico, Donald L. 2003. *The American Indian Mind in a Linear World: American Indian Studies & Traditional Knowledge.* New York: Routledge.

Foucault, Michel. 1982. *The Archaeology of Knowledge, and The Discourse on Language*, trans. A.M. Sheridan Smith. New York: Vintage. Translation of *Archéologie du savoir* and *Ordre du discours.*

Foucault, Michel. 1995. *Discipline and Punish: The Birth of the Prison*, trans. lan Sheridan. New York: Vintage Books. Translation of *Surveiller et punir*.

Garwood-Houng, Alana. 2005. "Protocols: Meeting the Challenges of Indigenous Information Needs." *Australian Academic & Research Libraries* 36: 149-57.

Green, Rebecca. 2015. "Indigenous Peoples in the U.S., Sovereign Nations, and the DDC." *Knowledge Organization* 42: 211-21.

Hedlund, Ann Lande. 2004. *Navajo Weaving in the Late Twentieth Century: Kin, Community, and Collectors*. Tucson, AZ: University of Arizona Press.

Hegel, Georg Friedrich Wilhelm. 1991. *Elements of the Philosophy of Right.* New York: Cambridge University Press.

Hobbes, Thomas. 1904. *Leviathan or, The Matter, Forme and Power of a Common-Wealth Ecclesiasticall and Civil.* Cambridge English Classics. Cambridge: Cambridge University Press.

Hjørland, Birger. 2008. "What Is Knowledge Organization (KO)?" *Knowledge Organization* 35: 86-101.

Holm, Tom, J. Diane Pearson and Ben Chavis. 2003. "Peoplehood: A Model for the Extension of Sovereignty in American Indian Studies." *Wicazo Sa Review* 18 no.1: 7-24. doi:10.1353/wic.2003.0004

https://doi.org/10.5771/0943-7444-2020-5-410 https://www.inlibra.com/de/page/agb - Open Access - (cc) BY

Isaac, Gwyneira. 2007. *Mediating Knowledges: Origins of a Zuni Tribal Museum*. Tucson, AZ: University of Arizona Press.

Kidwell, Clara Sue. 1993. "Systems of Knowledge." In *America in 1492: The World of the Indian Peoples before the Arrival of Columbus*. eds. Alvin M Josephy and Frederick E. Hoxie. New York: Vintage Books, 369-403.

Krebs, Allison Boucher. 2012. "Native America's Twenty-First-Century Right to Know." *Archival Science* 12: 173-90.

Lamphere, Louise, Eva Price, Carole Cadman and Valerie Darwin. 2007. *Weaving Women's Lives: Three Generations in a Navajo Family*. Albuquerque, NM: University of New Mexico Press.

Latour, Bruno. 2012. *An Inquiry into Modes of Existence: An Anthropology of the Moderns.* Cambridge, MA: Harvard University Press.

Lawson, Kimberley L. 2004. "Precious Fragments: First Nations Materials in Archives, Libraries and Museums." MA thesis, University of British Columbia. https://circle.ubc.ca/handle/2429/15608

Lee, Deborah. 2011. "Indigenous Knowledge Organization: A Study of Concepts, Terminology, Structure and (Mostly) Indigenous Voices." *Partnership: The Canadian Journal of Library and Information Practice and Research* 6, no. 1. doi:10.21083/partnership.v6i1.1427

Littletree, Sandra. 2019. "Indigenous Systems of Knowledge at the Intersections of the LIS Field and Academia." Paper presented at the International Indigenous Librarians' Forum.

Littletree, Sandra and Cheryl A. Metoyer. 2015. "Knowledge Organization from an Indigenous Perspective: The Mashantucket Pequot Thesaurus of American Indian Terminology Project." *Cataloging & Classification Quarterly* 53, nos. 5-6: 640-57. doi:10.1080/01639374.2015.1010113

Loyer, Jessie. 2018. "Indigenous Information Literacy: Nêhiyaw Kinship Enabling Self-Care in Research." In *The Politics of Theory and the Practice of Critical Librarianship*. eds. Karen P. Nicholson and Maura Seale. Sacramento, CA: Library Juice, 145-56.

MacDonell, Paul, Reiko Tagami and Paul Washington. 2003. "Brian Deer Classification System." http://web.archive.org/web/20120520155038/http://www.slais.ubc.ca/courses/libr517/02-03-wt2/projects/deer/index.htm

Marx, Karl. 2016. *Capital: A Critique of Political Economy.* trans. David McLellan. Delhi: Fingerprint Publishing.

McFeely, Eliza. 2001. *Zuni and the American Imagination*. New York: Hill and Wang.

Meyer, Manulani Aluli. 2008. "Indigenous and Authentic: Hawaiian Epistemology and the Triangulation of Meaning." In *Handbook of Critical and Indigenous Methodologies*. eds. Norman K Denzin, Yvonna S Lincoln and Linda Tuhiwai Smith. Los Angeles: Sage, 217-32.

Moewaka-Barnes, Helen. 2015. "Kaupapa Māori: Explaining the Ordinary." In *Kaupapa Rangahau: A Reader. A Collection of Readings from the Kaupapa Rangahau Workshop Series*, 2nd ed. Leonie Pihama, Sarah-Jane Tiakiwai and Kim Southy. Hamilton, New Zealand: Te Kotahi Research Institute, 29-33. https://hdl.handle.net/10289/11738

Moloney, Pat. 2011. "Hobbes, Savagery, and International Anarchy," *American Political Science Review* 105: 189-204.

Moorcroft, Heather. 1993. "The Construction of Silence." *The Australian Library Journal* 42: 27-32. doi:10.1080/00049670.1993.10755624

Moorcroft, Heather. 1994. "Reflections on Constructing an Aboriginal and Torres Strait Islander Thesaurus." *Cataloguing Australia* 20, no. 4: 108-11.

Moorcroft, Heather. 1997. *Aboriginal and Torres Strait Islander Thesaurus*. Canberra: National Library of Australia.

Nicholson, Karen P. and Maura Seale. 2018. *The Politics of Theory and the Practice of Critical Librarianship*. Sacramento, CA: Library Juice Press.

Nakata, Martin N. and Marcia Langton. 2005. *Australian Indigenous Knowledge and Libraries*. Canberra, Australia: Australian Library and Information Association. http://epress.lib.uts.edu.au/books

Nakata, Martin. 2007. "The Cultural Interface." *Australian Journal of Indigenous Education* 36, no. S1: 7-14.

Nakata, Martin. 2008. *Disciplining the Savages, Savaging the Disciplines*. Canberra: Aboriginal Studies Press.

Olson, Hope A. 1998. "Mapping Beyond Dewey's Boundaries: Constructing Classificatory Space for Marginalized Knowledge Domains." *Library Trends* 47: 233-54

Olson, Hope A. 1999. "Cultural Discourses of Classification: Indigenous Alternatives to the Tradition of Aristotle, Durkheim, and Foucault." In *Proceedings of the 10th ASIS SIG/CR Classification Research Workshop,* ed. Hanne Albrechtsen and Jens-Erik Mai, 91-106. Advances in Classification Research Online 10.

Olson, Hope A. 2002. *The Power to Name: Locating the Limits of Subject Representation in Libraries*. Boston: Kluwer Academic.

Olson, Hope A. and Rose Schlegl. 2001. "Standardization, Objectivity, and User Focus: A Meta-Analysis of Subject Access Critiques." *Cataloging & Classification Quarterly* 32, no. 2: 61-80. doi:10.1300/J104v32n02_06

Pacey, Phillip. 1989. "The Classification of Literature in the Dewey Decimal Classification: The Primacy of Language and the Taint of Colonialism." *Cataloging and Classification Quarterly* 9, no. 4: 101-7.

https://doi.org/10.5771/0943-7444-2020-5-410 https://www.inlibra.com/de/page/agb - Open Access - (cc) BY

Porter, Joy. 2001. *To Be Indian: The Life of Seneca-Iroquois Arthur Caswell Parker, 1881-1955.* Norman, OK: Oklahoma University Press.

Pratt, Richard H. 1973. "The Advantages of Mingling Indians with Whites." In *Americanizing the American Indians: Writings by the 'Friends of the Indian,' 1880-1900*, ed. Frances Paul Prucha. Cambridge, MA: Harvard University Press, 260-271.

Roessel, Monty. 1995. *Songs from the Loom: A Navajo Girl Learns to Weave*. Minneapolis: Lerner Publications.

Roy, Loriene. 2015. "Advancing an Indigenous Ecology within LIS Education." *Library Trends* 64, no. 2: 384-414. doi:10.1353/lib.2015.0045

Roy, Loriene. 2017. "Infusing Knowledge of Indigenous Lifeways Into Graduate Collection Management Education." *Collection Management* 42: 351-69. doi:10.1080/01462679.2017.1351902

Simpson, Sally. 2005. "Te Ara Tika: Guiding Words: Phase 3 Research Report." http://www.trw.org.nz/publications/Te_Ara_Tika_Guiding_Words.pdf

Smith, Linda Tuhiwai. 1999. *Decolonizing Methodologies: Research and Indigenous Peoples.* London: Zed Books.

Smith, Linda Tuhiwai. 2012. *Decolonizing Methodologies: Research and Indigenous Peoples*. 2nd ed. London: Zed Books.

Svenonius, Elaine. 2000. *The Intellectual Foundation of Information Organization.* Cambridge, MA: MIT Press.

Swanson, Raegan. 2015. "Adapting the Brian Deer Classification System for Aanischaaukamikw Cree Cultural Institute." *Cataloging & Classification Quarterly* 53, nos. 5-6: 568-79. doi:10.1080/01639374.2015.1009669

Szekely, Chris. 1997. "Te Ara Tiki: Guiding Voices; Maori Opinion on Libraries and Information Needs." Wellington, New Zealand: New Zealand Library and Information Association.

Teller Ornelas, Barbara and Lynda Teller Pete. 2018. *Spider Woman's Children: Navajo Weavers Today.* Loveland, CO: Thrums Books.

Tennis, Joseph T. 2008. "Epistemology, Theory, and Methodology in Knowledge Organization: Toward a Classification, Metatheory, and Research Framework." *Knowledge Organization* 35: 102-12.

Thomas, Robert K. 1990. *Getting to the Heart of the Matter: Collected Letters and Papers.* Vancouver, BC: Native Ministries Consortium.

United Nations Environmental Programme. 1997. "Traditional Knowledge and Biological Diversity" https://www.cbd.int/doc/meetings/tk/wstkbd-01/official/wstkbd-01-02-en.pdf

Vizenor, Gerald Robert. 1998. *Fugitive Poses: Native American Indian Scenes of Absence and Presence*. Lincoln, NE.: University of Nebraska Press.

Watts, Vanessa. 2013. "Indigenous Place-Thought and Agency Amongst Humans and Non Humans (First Woman and Sky Woman Go On a European World Tour!)" *Decolonization: Indigeneity, Education, and Society* 2, no. 1: 20-34.

Webster, Kelly and Ann Doyle. 2008. "Don't Class Me in Antiquities! Giving Voice to Native American Materials." In *Radical Cataloging: Essays at the Front*, ed. K. R Roberto. Jefferson, NC: McFarland, 189-197.

Wilson, Shawn. 2008. *Research Is Ceremony: Indigenous Research Methods*. Black Point, NS: Fernwood Pub.

Wise, Mary and Sarah R Kostelecky. 2018. "Respecting the Language: Digitizing Native American Language Materials." *Digital Library Perspectives* 34: 200-14.

Wunder, John R. 2000. "'Merciless Indian Savages' and the Declaration of Independence: Native Americans Translate the Ecunnaunuxulgee Document," *American Indian Law Review* 25: 65-92.

Zitkala-Sa. 1921. *American Indian Stories.* Lincoln, NE: University of Nebraska Press.

Young, Mary and Dara Doolittle. 1994. "The Halt of Stereotyping: When Does the American Indian Enter the Mainstream?" *Reference Librarian* 22: 109-19.

https://doi.org/10.5771/0943-7444-2020-5-410 https://www.inlibra.com/de/page/agb - Open Access - (cc) BY