Journal of Documentation

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Article information:

To cite this document:
María Montenegro, (2019) "Subverting the universality of metadata standards: The TK labels as a tool to promote Indigenous data sovereignty", Journal of Documentation, Vol. 75 Issue: 4, pp.731-749, https://doi.org/10.1108/JD-08-2018-0124
Permanent link to this document:
https://doi.org/10.1108/JD-08-2018-0124

Subverting the universality of metadata standards

The TK labels as a tool to promote Indigenous data sovereignty

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Received 1 August 2018
Revised 8 February 2019
Accepted 10 February 2019

Abstract

Purpose – The purpose of this paper is to investigate the underlying meanings, effects and cultural patterns of metadata standards, focusing on Dublin Core (DC), and explore the ways in which anticolonial metadata tools can be applied to exercise and promote Indigenous data sovereignty.

Design/methodology/approach – Applying an anticolonial approach, this paper examines the assumptions underpinning the stated roles of two of DC's metadata elements, rights and creator. Based on that examination, the paper considers the limitations of DC for appropriately documenting Indigenous traditional knowledge (TK). Introduction of the TK labels and their implementation are put forward as an alternative method to such limitations in metadata standards.

Findings – The analysis of the rights and creator elements revealed that DC's universality and supposed neutrality threaten the rightful attribution, specificity and dynamism of TK, undermining Indigenous data sovereignty. The paper advocates for alternative descriptive methods grounded within tribal sovereignty values while recognizing the difficulties of dealing with issues of interoperability by means of metadata standards given potentially innate tendencies to customization within communities.

Originality/value – This is the first paper to directly examine the implications of DC's rights and creator elements for documenting TK. The paper identifies ethical practices and culturally appropriate tools that unsettle the universality claims of metadata standards. By introducing the TK labels, the paper contributes to the efforts of Indigenous communities to regain control and ownership of their cultural and intellectual property.

Keywords Traditional knowledge, Dublin Core, Metadata standards, Indigenous communities, Indigenous data sovereignty, TK labels, Universality

Paper type Research paper

1. Introduction

The Karuk Tribe, a federally recognized Native American tribe[1] located in northwestern California, welcomes visitors to their Sípnuuk Digital Library with the following statement: "Any materials containing Karuk traditional knowledge are the intellectual and cultural property of the Karuk People, and we will therefore make these materials available according to our Karuk cultural protocols regardless of their current copyright assignment […] The Karuk Tribe asserts primary ownership of all cultural knowledge specific to our Tribe" (Sípnuuk Digital Library). Sípnuuk, which means storage basket in Karuk, is dedicated to managing, sharing and enhancing understandings of Karuk history, language, traditional knowledge (TK), natural resources and living culture, all of which activities are conducted in accordance with Karuk cultural protocols (Tribe *et al.*, 2017). Built using the Mukurtu content management system (CMS), an open source platform that allows Indigenous communities to define privacy settings and levels of access to and circulation of their digital heritage materials according to local cultural protocols (Christen, 2011), Karuk

This paper was written in Los Angeles, CA, which is the unceded territory of the Tongva people, the traditional land caretakers of Tovaangar (Los Angeles basin, So. Channel Islands). As a non-Native Student pursuing a degree in a land grant institution, the author pay her respects to this land's ancestors, elders and their relatives/relations past, present and emerging and recognize their continuing connections to land, water and resources.

Journal of Documentation
Vol. 75 No. 4, 2019
pp. 731-749

0022-0418
DOI 10.1108/JD-08-2018-0124

tribal members see Sípnuuk as a part of their efforts "to revitalize Karuk culture and fully realize tribal sovereignty" (Sípnuuk Digital Library).

Karuk efforts to manage and (re)gain legal ownership, custody and control of their cultural information and TK can be read as an example of Indigenous data sovereignty: "the right of a [tribal] nation to govern the collection, ownership, and application of its own data" (US Indigenous Data Sovereignty Network). This concept strategically builds upon that of data sovereignty, which was developed in the wider data community to prevent the subpoenaing of digital materials held in the cloud in one country by another, holding that digital or digitized information should be subject to the laws of the country where it is being held or processed (per conversation with Anne, 2017). Advocates of Indigenous data sovereignty, consequently, argue that "when data are collected from the people and communities of an Indigenous nation, the data come under the control of that Indigenous nation" (Kukutai and Taylor, 2016) asserting tribes' inherent right to govern their peoples, lands and resources (Rainie, Schultz, Briggs, Riggs and Palmanteer-Holder, 2017; Rainie, Rodriguez-Lonebear and Martinez, 2017; Kukutai and Taylor, 2016; Rodriguez-Lonebear, 2016; Snipp, 2016; Smith, 2015; Schultz and Rainie, 2014). In other words, data sovereignty typically refers to the understanding that data is subject to the laws of the nation within which it is stored, while Indigenous data sovereignty understands data as subject to the laws of the nation from which is collected. Indigenous data sovereignty, thus, positions tribal nations' data governance activities within a broader Indigenous rights framework in accordance with international declarations and agreements to which the USA has become a signatory, such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Article 31 of UNDRIP states that:

> Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.
>
> In conjunction with indigenous peoples, States shall take effective measures to recognize and protect the exercise of these rights.

Indigenous conceptions of data sovereignty differ from the western constructions because they include a wider assertion of sovereign nation status and rights that seek to redress and preempt situations where these have been dismissed or disregarded. They call for Indigenous people to be involved in decisions about every step relevant to the management of their data – from the collection, research, circulation of and access to their data, to controlling their data's documentation, classification, description and interpretation. Western constructions of data sovereignty also differ from Indigenous terms in that data sovereignty typically refers only to government, institutional, and business-generated information, e.g. demographic, environmental, educational and health data. Indigenous data sovereignty, on the other hand, while also concerned with government-collected administrative data, takes into consideration "all data about Indigenous people that is used to describe or compare Indigenous collectives" (Kukutai and Taylor, 2016). This includes data about Indigenous communities that are captured in or can be derived from Indigenous cultural materials collected and/or recorded through colonial activities and other practices of "exploration," conquest, exploitation, dispossession and expropriation, including non-Indigenous scholarly and personal collecting activities.

Situated within a broader critical project and theoretical background relating to documentation and radical knowledge organization practices (Littletree and Metoyer, 2015; Drabinski, 2013; Gilliland and McKemmish, 2012; Olson, 2001), and informed by an

anticolonial and Indigenous-centered approach that seeks to subvert western epistemologies and their impact upon Indigenous TK structures and cultures, this paper addresses the underlying meanings, effects and cultural patterns of metadata standards, focusing on Dublin Core (DC)[2], and the role of anticolonial documentation methods in the exercise of sovereignty of Indigenous communities[3]. Using the example of the Traditional Knowledge (TK) labels, an educational metadata tool designed to intervene and re-position western notions of access, circulation and ownership of Indigenous cultural heritage, this paper seeks not only to expose the assumptions of universality and its benefits that metadata standards promote, but also to highlight the complexities that arise when attempting to critically problematize universality, even when using alternative and anticolonial metadata tools. Aware of these difficulties, thus, the paper's intention is not to offer one definitive solution but rather to proposes a way to get around certain issues while raising some problems and solving others.

The paper first reviews the literature and contextualizes issues concerning the histories, politics and implications of researching, collecting and documenting Indigenous TK. It then briefly traces the origins of information standards and provides an overview of how they have been understood by thinkers in both the information fields and in other disciplines, in order to consider the epistemological effects of such interpretations on DC specifically. It moves on to examine the stated roles of 2 of 15 metadata elements making up the DC metadata standard – rights and creator – focusing on the mechanisms and strategies through which DC's claims to universality and supposed neutrality threaten the rightful attribution, locality, specificity and dynamism of TK. It concludes by identifying new ethical practices and one specific culturally appropriate tool that some Indigenous communities are implementing to unsettle claims of universality and neutrality in existing metadata standards, and assert control over their cultural and intellectual property (IP) in accordance with their own protocols of access and use[4].

2. Background

Data on Indigenous peoples have long been used in ways not supported by them, and there has been a perceptible lack of Native voice in the collecting processes and subsequent data management and documentation policies made by non-tribal entities (Rainie, Rodriguez-Lonebear and Martinez, 2017; Pacheco *et al.*, 2013; Roubideaux, 2002). During the colonial collecting project in the USA, the federal government advanced clear strategies for the discursive dispossession and erasure of Indigenous peoples. These practices of collecting were significantly and systematically destructive – Indigenous cultural materials were removed from their home communities and detached from local knowledge systems and contexts. These materials remain today not only physically distant from their places of origin – in non-tribal museums, archives and libraries, universities, and federal agencies – but are also held within a legal system that refuses to acknowledge Indigenous claims to stewardship and ownership of these materials (Tribe *et al.*, 2017; Christen, 2015, 2018; Anderson, 2013; Carpenter *et al.*, 2008; Anderson and Montenegro, 2017). As a consequence, Indigenous people have historically been excluded from the decision-making processes that determine what information from and about them should be collected, who should gather that information, and who should manage it, document, describe and interpret it, and who should have access to it (Anderson, 2018). In the same way that the collection of Indigenous TK was conducted by so-called "experts" external to the communities of origin – anthropologists, ethnographers, archeologists, missionaries, collectors and federal agents among others – the metadata and analyses associated with those collections has been and continues to be generated by professionals and authorities also usually external to those communities, resulting in further decontextualization and often inaccurate, incomplete, and/or even simply incorrect information about Indigenous people's histories and realities.

The gathering, representation and use of TK and the data generated from collected Indigenous materials are, therefore, inherently political and present a range of complex documentation and management issues. These issues range from adequately and appropriately identifying and uniting collections to including historically specific and culturally relevant and accurate information within catalog entries, and providing ethical and Indigenous-centered protocols for access, circulation and use within digital repositories (Lonetree, 2012; Anderson, 2015). Another important concern is that Indigenous collections are often managed using major national languages such as English, and according to western and universalist documentation and classification systems, ignoring and disavowing Indigenous ontologies, epistemologies and local language ideologies. Furthermore, western classification and documentation practices typically assimilate living Indigenous cultures into existing schemes designed to treat collections as fragmented and static materials preserving "frozen" knowledge (Grenersen, 2012; Metoyer and Doyle, 2015; Hajibayova and Buente, 2017). These practices are often only conducted once by museum, archives and library specialists, disregarding the fact that Indigenous knowledge – like any other knowledge – is dynamic and in a constant state of change, depending on the social and cultural flexibility and sustainability of each Indigenous community (Battiste, 2008; Smith, 2012).

The limitations and inadequacies of museum, archive and library information management regimes and systems to address the above-mentioned issues have been extensively noted by Native and non-Native scholars, cultural leaders and activists in the fields of library and information studies, Indigenous and Native studies, critical museology, and museum anthropology among others. Littletree and Metoyer (2015), Ramesh Srinivasan *et al.* (2010), Duarte and Belarde-Lewis (2015), Amy Lonetree (2012) and Kim Christen (2011, 2015, 2018) among many others have studied the ethical consequences of inadequate representation and the need, functionality and legitimacy of more localized knowledge organization systems, especially in relation to the misrepresentation of Indigenous people and the inappropriate and disrespectful circulation of their TK. Similarly, although not necessarily from an Indigenous-centered approach, Geoffrey Bowker and Susan Leigh Star (1999), Hope Olson (2001), Wendy Duff and Verne Harris (2002), Emily Drabinski (2013) and Melissa Adler (2017), among others, have analyzed the power dynamics, constructed limits and the marginalization imposed by naming, cataloging and classification practices as they privilege only some accounts while silencing the perspectives of marginalized communities through the establishment of "normalized" and universal fields of description. More specifically, the biases inherent in western information systems around the issues of gender, class, race and ethnicity have been studied with a special focus on the Library of Congress Subject Headings and the Dewey Decimal Classification System[5].

This study's goal, however, is to push this critique even further by looking specifically at the implications of using metadata standards, in particular the DC metadata schema, to document TK. While some scholars have looked into the socio-cultural and political implications of imposing metadata standards on underrepresented communities, there is a lack of critical literature directly addressing the effects that DC's metadata fields, and the description procedures they support, have over cultural practices regarding the creation, management, dissemination and use of TK. For example, Youn (2017) has investigated the incompatibility of externally developed international metadata standards to easily fit descriptive and social behaviors in Korean institutions, partly because they do not take into account traditional local cultures. Similarly, yet from a human rights approach, archival scholars Gilliland and McKemmish (2012) have looked at efforts by the archival and record-keeping community to automate the creation, management and reuse of record-keeping metadata in order to address diverse social, cultural and technological as well as bureaucratic concerns and imperatives. In her various publications discussing

culturally responsible ways of sharing TK online, Kim Christen (2011, 2015, 2018) has pointed out the need for more locally designed CMSs, which she specifically addresses by adding Mukurtu Core – a modified and expanded version of DC – into Mukurtu CMS. Mukurtu Core works as a direct intervention to conventional metadata schemas, in that it includes necessary additional fields such as Cultural Narrative, TK, and People. Finally, Social Anthropologist and Ethnomusicologist Peter Toner (2004) has pushed for collecting institutions to both re-evaluate and open their metadata standards to the claims, histories and knowledge systems of others, specifically, of Aboriginal communities. Toner has argued for the inclusion of the category of memory into metadata schemes, such as DC, in order to make the concept of metadata relevant to traditional Aboriginal owners.

Seeking to build on this scholarship, this study offers a new contribution to the field in that it is concerned with imagining (Duarte and Belarde-Lewis, 2015) innovative and ethical ways in which Indigenous communities might be able to operate within a standards framework without having to comply with all the above-mentioned deleterious problems of decontextualization, and fragmented and fixed framing of holistic, relational and dynamic knowledge. However, while it imagines alternative and anticolonial ways of documenting Indigenous TK, the paper also questions the ability of any metadata standard to completely break or alleviate universality – to successfully bring multiple ways of knowing into description and dismantle existing assumptions that standard fields and terminology are in fact common across all communities' epistemologies. Specifically, in this case, the paper asks the question:

RQ1. How tensions between a western desire for more universal access through interoperability can be balanced against the needs of Indigenous communities for localized and culturally responsive documentation and description tools?

3. On standards

Standards – the set of fields, words, elements and/or principles for describing resources that are considered to be common to all resources of a particular type – are inherently universalist and homogenic. Bowker and Star (1999) define standards as a set of agreed-upon rules for the production of information objects spanning more than one community of practice or site of activity and enduring over time. These rules, they continue, are deployed to make things — units of information – work together over distance and across heterogeneous modes of measurement and description, for which they are designed in a way that makes it very difficult and expensive to adapt or modify them (pp. 13–14).

Information standards were initially created for facilitating the interaction between two or more systems in the exchange of information. In order for communication to be effective, it was expected that senders and receivers of information use the same set of standards, enabling the actors involved in a communication process to interact. In defining "standard," most scholars within the information studies field emphasize the importance of the values standards promote, such as compatibility and interoperability, along with what makes information and metadata shareable, searchable, filterable, and retrievable (Dublin Core Metadata Initiative (DCMI), Buckland, 2017; Pomerantz, 2015; Park and Childress, 2009; Gilliland, 2008, Duval, 2001). Thus, standards for describing, organizing and documenting data are created to ensure the "availability, accessibility, quality, consistency, auditability, and security of data" (Bruhn, 2014, p. 2).

Today a number of standards exist, information exchange about holdings is commonplace and metadata professionals have taken advantage of the opportunities that automation and standardization have to offer. Standards' universal values tend to create, however, what Marie Battiste (2008) calls "cognitive imperialism," that is, the transformation of knowledge into a

political power base built on controlling the meanings and diffusion of knowledge (p. 504). According to Bowker and Star (1999), every successful standard imposes a system that describes and organizes knowledge according to the values of the institution in which those standards are being deployed and as a consequence, they form a juncture of social organization, moral order and layers of technical integration. One could argue, nevertheless, that the effort of each of these developments to colonize and domesticate ways of organizing, documenting and describing information, and to group information and data synthetically under a single category or field, is nothing more than a simple refusal to grant or permit the specificity of local communities and their epistemologies. In *Cruising the Library*, Adler (2017) reminds us that the creation, implementation and deployment of information standards are manifestations of broader "normalization projects" that tend to privilege institutional and universal politics of access, circulation and ownership of information and erase or ignore the values of diverse communities regarding the documentation and management of their collections. One of the consequences of the universality of these standards, Adler continues, is "fixed subjectification" – standards are instruments of power that frame subjects and their epistemologies reinforcing notions of who and what cultural names, fields and categories are of value. Standards, thus, inevitably annul any possibility of having the "subjects" of the information being documented to describe and interpret their own knowledge according to their own values and beliefs, and this rigidity has historically been used by information institutions for discursive oppressive purposes (Brilmyer, 2018).

The most basic assumption regarding any standardization process is that everyone takes equivalent steps to adopt standards and that the standard that is successful for one group of people or institution works for all, or even more egregiously all-encompassing, that the adopted standard works better than any alternative method for documenting and managing information. That imposed universality is the main criticism advanced by critical documentation, classification and cataloging professionals toward information standards. Standards follow the liberal aspiration of instituting equality by promoting "sameness" as a means of simultaneously supporting neutrality and diversity. That idea of "equality" presumes that the same model will apply universally and does not take into account underlying inequitable conditions and power relations (Littletree and Metoyer, 2015; Adler, 2017). Those involved in standards development do not necessarily represent the needs, ethics, values and epistemologies of local and marginalized communities regarding the documentation and stewardship of their collections and associated data. Anne Gilliland (2014), for example, reminds us that the framing of standardized descriptive practices, by its very nature, raises questions about the extent to which any standard can accommodate local variances. This has to do in part with the fact that for standards, efficiency and economy tend to be more important values than the ideology of the subjects and their knowledge. This ideological desire of efficiency and productivity coupled with an anxiety of knowledge control privileges accuracy and convenience. Rights metadata elements, for instance, have been identified by Pomerantz (2015) as efficient attempts to reduce the complexity of copyright to a metadata schema of manageable size. Yet, as Marika Cifor and Jamie Lee (2017) have argued, this efficiency does little more than obscuring knowledge diversity and identity differences.

Standards' hegemonic values present large implications for Indigenous communities that are not empowered with the authority to manage their own TK and more importantly, the data used to describe their collections. The institutionalization of standards such as DC has the potential to significantly affect knowledge production and determine the conditions for the transmission and access of information and its future use. As will be examined in the following sections of this paper, that effect is often detrimental when documenting TK as it fails to take into consideration Indigenous cultural protocols around ownership and the informed and responsible sharing of tribal cultural materials.

4. DC and the universalizing effect of its rights and creator metadata fields

DC is one of the most widely used metadata standards. It consists of a set of 15 basic elements specifically designed to describe digital resources of all types (DCMI). The main objective of the DC Metadata Element Set is to generate metadata terms that are broad and generic enough to be used for accessing, identifying, describing, searching, locating, discovering and retrieving a wide range of resources across institutions and their knowledge organization systems. As such, DC has come to be known as one of the most "flexible" and "neutral" metadata standards, both because of the "generality" of its basic set of metadata elements and because it does not require the use of any particular controlled vocabulary. However, as most radical catalogers and critical documentation scholars have repeatedly noted (Bowker and Star, 1999; Olson, 2001; Berman, 1971; Drabinski, 2013; Littletree and Metoyer, 2015; Adler, 2017), there is no such thing as a natural, neutral or universal documentation or classification system – these allegedly value-free tools impose their own rationale and systematic way of seeing the world.

Two DC elements in particular perpetuate colonial practices of exclusion. Specifically, the rights and Creator Fields conflict directly with Indigenous epistemologies and protocols defining the access, circulation and use of TK. As Legal Scholar Jane Anderson (2013) has explained, both elements are fundamentally intertwined – authorship is no different from a legal category and cultural construct made possible and instrumentalized through IP law, a set of laws that maintain very specific exclusions and power relations. DC defines the role of its rights field as "encompassing Intellectual Property Rights, Copyright, and various Property Rights." Additionally, RightsHolder, one of the possible extensions of the rights element, is defined as "a person or organization owning or managing rights over the resource." The Creator field (previously referred to as the author) is defined as "an entity primarily responsible for making the content of the resource." Examples of creator according to DC include a person, an organization or a service. According to the DCMI, these examples usually refer to the author of a written document; the artist, photographer or illustrator of a visual resource; or the founder of an institution. In addition to the Creator field, DC offers a contributor element and a Contributor refiner. They are both defined equally as "an entity responsible for making contributions to the content of the resource." The examples of a contributor provided by DC include, as in the Creator field, a person, an organization or a service (DCMI).

Both fields – rights and creator – are formed upon and replicate legal frameworks that have embedded relations of exclusion. The definition provided by DC for the rights element presumes that IP laws are universal, however, legal regimes of IP and copyright are culturally specific and the types of rights they specify, by definition, exclude all types of Indigenous TK (Torsen and Anderson, 2010; Anderson in Halperin, 2019). In particular, IP laws were designed to recognize and protect new creations and innovations, and thus require the designation of individual "authors" and "original" works in order to offer any protection. This emphasis on "originality" discounts much of the cultural materials and resources that are produced by Indigenous communities, since TK is not necessarily something newly created but rather may be based on pre-existing works that have been transferred from generation to generation, thus not meeting the rigid (but also exceedingly low) standards of originality in a western artistic and/or scientific sense (Anderson, 2009; Anderson and Christen, 2013; Christen, 2015; Duarte and Belarde-Lewis, 2015). Second, the notion of "individuality" imposed by DC, where a creator and/or contributor can only be a person, organization or service, conflicts with the ways in which Indigenous communities understand notions of "authorship" and "ownership." While IP laws such as copyright rest on the pillars of individual authorship, Indigenous communities often jointly create their cultural materials and collectively own their TK. Within Indigenous communities, the "author" of expressions of TK (if that term is used at all) is hardly ever a single tribal member but much more likely a clan or kin that has responsibility or authorship over a particular knowledge (Torsen and Anderson 2010, p. 34)[6].

Finally, according to western IP laws (and to DC's Creator field), most of the material that records the lifestyles, languages and cultural practices of Indigenous people is legally authored and owned by the person who "made" the sound recording, film or photograph rather than by the communities where the material originated. For instance, a film of a traditional ceremony recorded by an ethnographer makes the filmmaker the "author," while the subjects of these colonial documentation practices are rarely given that status (Anderson, 2013, 2018; Smith, 2012; Moreton-Robinson, 2015). As the "subjects" of these materials instead of the legal copyright owners, Indigenous communities have often no control over the life of their belongings, including in which repository they end up and how they are documented, shared, accessed and used. Furthermore, ironically they must secure permission from the "author" in order to reuse the materials that document their own lives, customs and cultural practices.

By defining rights according to such notions of property and ownership, DC systematically reinforces colonial legal property frameworks and disenfranchises Indigenous communities from describing their own cultural heritage. Moreover, by not allowing for a community, cultural group, family, clan or other non-institutional or non-organizational types of groups to be the RightsHolders, it fails to include Indigenous people as the possible users of the standard while at the same time perpetuating colonial practices of discursive dispossession. Similarly, DC's definition of creator has the effect of legally and socially reducing and excluding Indigenous and other non-western cultural forms of attribution, articulation, expression and association, thus also perpetuating a history of appropriation of Indigenous materials. By the exclusive use of these normative notions of rights and authorship, DC ideologically privileges one single system of knowledge over any other.

Nevertheless, we are at a crucial moment where standardized documentation practices are increasingly being resisted and challenged by Indigenous communities worldwide who are striving to regain physical and intellectual control of their collections[7]. This means, among other things, to be able to describe and manage TK using metadata schemas and vocabularies designed either by Indigenous communities themselves and/or along with allies, partners and collaborators, ensuring that the metadata used to describe TK respects local cultural protocols of access, circulation and use of digital cultural heritage. Yet the tensions between customization/localization and interoperability and how these can impact sustainability remain present. While locally generated metadata structure standards might be seen as consistent within a particular community, they might not be consistent or interoperable with other communities, entities or institutions.

Lack of interoperability is considered one of the main risks of localized standard customization and is often deemed to be one of the main reasons why institutions are so hesitant to adapt standard information systems according to the values, protocols and epistemologies of the communities with whom they work. Bowker and Star (1999) have argued that the toughest problems in information systems and standards design are increasingly those concerned with modeling cooperation across heterogeneous worlds of replicating articulation work and multiplicity (p. 308). However, it could be argued that the unease that some information professionals experience when faced with the possibilities of "permeating" (Olson, 2001) or when making information standards more flexible has more to do with a profound fear around making space for the voices of other, less privileged and marginalized communities that might challenge the authoritativeness of their discourses around information documentation, and undermine their power and authority to identify, describe and interpret others' materials.

This paper argues, however, that interoperability does not need to be universal, but rather it can be conditional to each Indigenous community's reality and agenda – it can serve to negotiate or acknowledge certain groups' rights and perspectives regarding material that has been appropriated by non-tribal institutions, for instance, as well as to promote the circulation and description of TK within institutions' catalogs and classification systems in ways that can be controlled by tribes. In other words, interoperability does not need to be a goal for

Indigenous knowledge organization to work across Indigenous communities but in some instances, it may be useful for negotiating and administering appropriate stewardship of materials between Indigenous communities and non-tribal institutions.

Because the rights and obligations that Indigenous communities assert in relation to their collections do not map easily onto DC definitions of who constitutes an "owner," "author" or "creator," innovative tools are required to incorporate historical contexts and the ethics of Indigenous ownership. As Olson (2001) has suggested, we must generate holes in our structures through which the "power can leak out," creating spaces in our boundaries for the knowledge systems of those who have been excluded. Olson's subversive strategy has been borrowed and adapted by Drabinski (2013), who, from a queer perspective, argues that the action of attempting to fix standards actually affirms that a universalizing system of documentation, organization, and naming is possible and desirable and imagined to be correct in any given context. One example of such creative metadata tools are the TK labels offered by Local Contexts, an initiative directed by critical Legal and Digital Humanities Scholars Jane Anderson and Kim Christen, designed to provide information about and solutions for the specific complications faced by Indigenous peoples seeking to manage, share and steward their digital materials. As the remaining sections of this paper demonstrate, while the TK labels still perpetuate some issues around generalizability, they move away from the desire of "correcting" information standards. Instead they point toward a "dialogic pedagogical intervention" (Drabinski, 2013) that pushes all users to consider how the organization of, and access to, knowledge is always politically, culturally and socially produced and contingent to those conditions. This community-led intervention, which can also be understood as the implementation of machine readable cultural protocols, puts into practice the self-determination values forged forward by the Indigenous data sovereignty movement.

5. The TK labels: an anticolonial metadata tool

The TK labels are a set of 17 digital tags (see Figure 1) that can be included as associated metadata into diverse digital information contexts – CMSs, online catalogs and databases, finding aids, online platforms – assisting in the recognition of, and education about, the culturally appropriate circulation, access and use of Indigenous cultural materials. They draw from and extend already existing community protocols as their base. As a largely educational extra-legal initiative, the TK labels were designed to be utilized by communities who, due to colonial practices of collecting and western definitions of authorship and ownership, are unable to assert legal control over their collections. They function as community-driven tools aimed at adding important and often missing information about proper use, guidelines for action, and responsible stewardship of publicly circulating digital cultural heritage (Anderson and Christen, 2013; Christen, 2015; Anderson and Montenegro, 2017).

Each of the 17 TK labels was developed through extensive community collaboration – with several Native American, Australian aboriginal and Métis groups and First Nations – which means that they are the result of partnerships that have identified localized community needs but yet can be applied to the cultural content of diverse Indigenous communities (Anderson in Halperin, 2019). Therefore, rather than imposing one particular group's protocols upon another, each TK label denotes the appropriate use of Indigenous resources by external users according to local protocols around knowledge sharing. Furthermore, Local Contexts provides an initial template description and title for each TK Label, however, in recognizing that knowledge is always dynamic and contingent to time and place and acknowledging the diversity and uniqueness of different Indigenous communities, tribal members are invited to adapt and/or translate these descriptions using either their local languages and/or the concepts and definitions that better reflect their local epistemologies. The TK Labels, thus, enable Indigenous users to assert data sovereignty in the form of distinct local tribal control of their histories and cultural representations, breaking discursive universality through the implementation of their

Figure 1.
Traditional Knowledge (TK) labels

Source: www.localcontexts.org

own locally customized labels and defining the nature of the negotiations they maintain with non-tribal repositories regarding the documentation and management of their TK.

Thus, the Seasonal label, for example, is being used by the Pokagon Band of Potawatomi Indians to indicate that the circulating material should only be heard and/or utilized at a particular time of the year; the Community Voice label is being used by the Penobscot Nation to promote collective knowledge from the source, undoing the notion of an expert, detached, neutral set of facts about the circulating cultural material and moving users to see the richness of including multivocality in the form of diverse sets of local and authentic knowledge into the

public record; the Women Restricted label and the Men Restricted label, both generated in collaboration with Aboriginal communities in what is currently known as Australia, raise awareness about gendered community knowledge; the Secret/Sacred label, as used by the Sq'éwlets people, a band of the Sto:lo First Nation from the Fraser River Valley in what is currently known as Canada, lets external users know that the material that is circulating should not be publicly available due to its secret, sacred, or esoteric components; and the Attribution Label, the most used and useful label for the purposes of this paper, is being used by various Indigenous communities to clearly designate that they are the TK holders of the circulating content and should be acknowledged as such (Local Contexts).

As the following examples will demonstrate[8], the Attribution label partially denaturalizes western notions of authorship according to each community's needs and delegitimizes those who are normally credited as the "authors/owners" of Indigenous knowledge, making possible a different kind of understanding about these materials, including who actually is, remains and should be acknowledged as the legitimate authorities over these.

The template text for the Attribution label offered by Local Contexts reads:

> TK attribution
>
> This label is being used to correct historical mistakes or exclusions pertaining to this material. This is especially in relation to the names of the people involved in performing or making this work and/or correctly naming the community from which it originally derives. As a user you are being asked to also apply the correct attribution in any future use of this work.

The Sq'éwlets are using four TK labels to run across their website (TK Attribution, TK Non-commercial, TK Outreach and TK Verified), which was developed with the express purpose of educating non-First Nation viewers about Sq'éwlets culture and specifically about how to responsibly and respectfully learn about archeological sites in the area that had long been the source of non-Native fascination. Their customized Attribution Label reads like this:

> Skwix Qas Te Téméxw – (lit. name and place)
>
> This website represents the true knowledge and history of Sq'éwlets people.
>
> The attribution label literally means "name" and "place" in our language, skwix qas te Téméxw. We ask everyone that visits this website to attribute our knowledge and histories to us, the Sq'éwlets First Nation, a tribe of Sto:lo. Our history has not always been respected or told correctly. Here we tell our own story in our own words. We are both holders and caretakers of our own lands, resources, and histories. It is the responsibility of our families and communities as Sto:lo people to take care of these things in a respectful way[9].

The Passamaquoddy Nation, whose three customized TK Labels (TK Attribution, TK Outreach and TK Non-Commercial) are being attached as rights metadata to the digitized versions of the Jesse Walter Fewkes wax cylinder recordings of Passamaquoddy trading songs currently held at the Library of Congress, define their Attribution Label as:

> Elehtasik Nit – (this is how it is done, this is the right way)
>
> This label is being used to correct historical mistakes or exclusions pertaining to this material.
>
> The name of this Label, Elehtasik Nit, means this is the right way; how it should be done. When using material with this Label, please use the correct attribution for this material. This may include individual Passamaquoddy names, it may include Passamaquoddy as the correct cultural affiliation or it may include Passamaquoddy Tribe as the tribal designation[10].

It is worth noting that before adding the TK Labels to the Library of Congress' online catalog metadata fields, the Rights Advisory for the collection of Passamaquoddy recordings stated that the rights to these songs were solely held by the Peabody Museum of Archeology and

Ethnology at Harvard University. Now that the TK Labels have been added to the digitized songs' MARC and DC records (launched in June 2018), the Rights Advisory lists each of the three TK Labels first before the legal rights holder along with their customized titles and descriptions, and the Peabody Museum beneath the Passamaquoddy TK Labels as the rights holders. While the TK Labels could not change the structure of copyright ownership, they provide an important intervention allowing viewers to see the proper use and attribution of these songs (per conversation with Jane Anderson, 2017)[11].

The Tejon Indian Tribe located in Bakersfield, in what is currently known as California, who are using the TK Labels within their Mukurtu site and the Attribution Label in particular as associated metadata for the J.P. Harrington photographic collection, decided to use the template text offered by Local Contexts. And the Karuk Tribe, whose Sípnuuk Digital Library's rights statement we read at the opening of this paper, are developing their own set of customized TK Labels to be used both within their Sípnuuk site and as an intervention metadata tool in their collaboration with non-tribal museums holding their collections. As they work in customizing the language for their Attribution label, they are positioning themselves as the rightful owners, authorities, and custodians of their TK regardless of the legal status of all circulating Karuk material[12].

Taken together, the TK labels are examples of differing scales of interventions that seek to upend and disrupt the colonial legacies of collecting and documenting TK. Through the implementation of the Attribution label in particular, there is an important turn towards privileging the multiple forms of owning and stewarding TK that span generations and contexts from an Indigenous perspective. In this sense, while Indigenous communities cannot "correct" or revoke the legal ownership and/or authorship, from their Indigenous perspective they can assert local and ongoing tribal, community and even family relationships, obligations and responsibilities that are embedded in their circulating digital materials (Christen, 2015). This, thus, works to trouble the circulation of normative legal rights – in the very act of labeling and pointing back to the contemporary local contexts from which these materials derive their meaning, there is a disruption in the presumed stability and legitimacy of the asserted legal ownership and authorship imposed by standard information systems and their metadata fields (Anderson and Montenegro, 2017).

Equally important, the examples of customized text also show how the TK labels function to localize (as opposed to universalize) meaning – the intent for sharing is being explained through local terms and languages, with recognition of and respect for the special cultural rules and protocols that govern Indigenous knowledge and its connection to history, to people and families, and to territory. As opposed to other information standards that do not acknowledge Indigenous contingencies of time, place, and subjectivity, the TK labels, when customized[13], are always locally defined and applied – while for the Sq'éwlets attribution connotes territory, place names, and local histories, for the Passamaquoddy it foregrounds correcting attribution mistakes and therefore setting the record straight, and for Karuk the term attribution relates strictly to ownership and property rights.

There is, however, one element of the TK labels that remains static or universal – the icon. While this universality allows for visual interoperability across tribes and institutions as well as between institutions implementing the TK labels in collaboration with tribes (nationally and internationally) and the understandings of users who encounter the TK labels online, it questions the ability of any metadata endeavor – even anticolonial ones like this one – to completely break the universality inherent to information standards. The TK labels are still in an early stage of development and implementation, but it would be interesting to eventually study the effect that such fixity of icons might possibly have for certain groups that might feel that the icons themselves do not correctly or adequately represent their own interpretation of the semantics of a TK label. The icons raise questions concerning each or indeed any community's drive to customize – even with a metadata set

created to address the needs of multiple and different communities, the need to further customize and localize could go beyond text and titles.

Despite the fixity of the icons, though, the TK labels can be understood, in simplest terms, as a vocabulary, but not a universal or controlled one. Even though these digital tags can be attached to the rights field (or any other field) of any metadata standard, including DC, they work in the opposite way to standards. What Local Contexts is pushing for is not the use of a particular set of metadata elements. On the contrary, it offers the possibility to use a specific set of words and icons that broadly convey Indigenous concerns around access, circulation, and use in those documentation contexts where tribes believe it could be useful, allowing as well for the language to be continually updated to reflect the shifting relations to knowledge. More importantly, since the TK labels are implemented as associated metadata and not necessarily as a fixed application profile within a particular standard[14], they work as a mechanism that refuses to erase the hegemonic condition of standard metadata fields, leaving those exclusionary terms visible and evident (Anderson, 2013; Drabinski, 2013). Thus, the labels work as a form of contestation that subverts standard information systems and metadata schemas from within, allowing for Indigenous and western systems of knowledge to be in dialog and co-exist.

Finally, by allowing for the incorporation of alternate, culturally and situationally appropriate metadata created by the rightful owners of TK, tribes together with the institutions with whom they choose to work to implement the labels promote the education of information practitioners and users. By developing a capacity for critical reflection about the fixed, universalist and marginalizing order of metadata standards rather than correcting them, the labels are an example of what Olson has called "techniques for making the limits of our existing information systems permeable" (Olson, 2001, p. 659). The educational component of the TK Labels complies with one of the main elements of the Indigenous data sovereignty movement. According to Native Policy Scholar Stephanie Rainie, an important step of working toward Indigenous data sovereignty is that external non-Native entities incorporate tribal principles into their own data stewardship practices. This way, even though the institutions holding the Indigenous cultural materials that are circulating online will inevitably share some control over the data, within an Indigenous data sovereignty framework the tribe will always determine the level of control and the ways of sharing of the data.

This "redemptive condition" (Olson, 2001) of the TK Labels allow for community cultural protocols and Indigenous Cultural and Intellectual Property (ICIP) principles to be operationalized and embedded throughout digital information infrastructures and their components, allowing for local community voices and epistemologies to be part, creators and managers of the actual metadata used within digital structures and systems themselves. All these activities contribute to the enactment of Indigenous peoples' inherent right to control and govern the gathering, management, circulation, access, use and interpretation of their own data, thus contributing to tribal self-determination, data governance and, ultimately, sovereignty.

6. Conclusion

Western practices of documentation promote the building of interoperable systems of information and the increasing standardization of knowledge organization, description, and representation. As cultural materials, TK, and data from and about Indigenous groups are primarily "owned" by non-Native peoples and held at non-tribal institutions, Indigenous epistemologies, voices and demands are oftentimes obfuscated, ignored or made invisible by these documentation practices (Anderson, 2013, 2018). As this research seeks to demonstrate, standards such as DC and its metadata fields have the potential to significantly impact the production of TK and determine the conditions for the transmission and access of Indigenous information and its future use. The problem is that such conventional metadata standards have proven insufficient to take into consideration Indigenous rights and perspectives around ownership and the informed and responsible sharing of Indigenous data.

However, we are at a crucial moment when these practices are increasingly being resisted and challenged by many Indigenous communities all around the world who are striving to regain physical and intellectual control of their collections, forging a movement of Indigenous data sovereignty – the process by which Tribal Nations control and govern all aspects of tribal data. Indigenous data sovereignty argues that Indigenous people are within their rights to control research and information management processes which affect them, they should be attributed from the inception of any documentation project, and community cultural protocols should be recognized, legitimized and made meaningful at all levels of engagement with Indigenous collections and application of data about Indigenous communities, peoples, lands and resources. While there is increasing attention to the need to integrate ICIP principles and local protocols into existing metadata standards such as DC, the unique nature and fundamentally different epistemological basis of TK makes such integrations as well as interoperability between new nonuniversalist metadata alternatives hard. What compounds this problem is that to date there has been no digital option for translating cultural protocols into useable digital code (Anderson, 2017). For the purposes of easier, more interoperable use and dynamic customization, a TK Label Hub is being developed, where communities will adapt their labels and safely deliver them to institutions that are committed to implementing them within their own institutional infrastructures and public displays. Furthermore, Local Contexts' current work with the Abbe Museum in Maine, for example, will see the TK Labels integrated into the Past Perfect software, thus allowing for implementation across a wide museum sector (Anderson in Halperin, 2019).

In summary then, the TK Labels address an important part of Indigenous communities' pressing need for an alternative to the universality and hegemony embedded in and resulting from western metadata standards, subverting them from within. They do this by allowing for the incorporation of alternate, culturally and situationally appropriate metadata created by the rightful owners of TK, as well as educating information practitioners and users rather than attempting to reframe the standards and their exclusionary and marginalizing assumptions and structures. The challenge, however, is that the TK Labels require non-tribal collecting institutions to recognize the sovereignty of tribes over their own data, as well as to give up their roles as owners and controllers and rather assume one of collaborators. This will require meaningful and deliberate partnership, not just consultation, between tribes and the institutions holding Indigenous cultural materials – an epistemological shift that lies at the foundation of the Indigenous data sovereignty movement.

Notes

1. Note on terminology: acknowledging that there is no consensus about what is the most appropriate name for the original inhabitants of North America, in this paper, particular peoples are identified by their tribal names and when talking more generally, the terms "tribes," "tribal nations," "Native peoples," "Indigenous communities" and "Indigenous peoples" are used interchangeably, recognizing that none is entirely satisfactory.

2. Metadata standards are schemas developed by individual communities attempting to facilitate effective mapping between common data elements. The development of such schemas tends to be controlled through community consensus combined with formal processes for submission, approval, and publishing of new elements. This paper focuses on metadata structure standards such as Dublin Core, which are used to ensure consistency to enable those different kinds of descriptive metadata are able to interoperate with one other (Gilliland, 2008; Pomerantz, 2015; Digital Curation Center).

3. Authorial note: As a non-Native identified self, I am aware that by working within a standards framework this study could be seen as perpetuating a colonial and hegemonic approach to information and the practices of collecting, classifying and categorizing Indigenous cultural heritage and traditional knowledge. However, I consider this work to be a disruption of the assumptions and practices that underlie such a framework, and I attempt to the fullest possible extent to be informed

by the immediate concerns of tribal nations whose struggles for ownership and control of data are part of their efforts towards sovereignty, self-determination and, ultimately, survivance.

4. In the context of this study, cultural protocols are referred to as the guidelines, rules and forms of governance that emanate from local contexts and function as a means for changing people's understanding of an issue – for instance, how a ceremony or a song should be heard and used – and how people should act in relation to it (Anderson, 2006).
5. Critics argue that the Library of Congress Subject Headings (LCSH), for instance, historicize and stereotype Native peoples and cultures by classifying them according to English and/or anthropological terms that misrepresent or misguide Indigenous peoples' ontologies and spiritual beliefs (Littletree and Metoyer, 2015). In a similar vein, the hierarchies imposed by the Dewey Decimal Classification System (DDC) tend to exclude many facets of identity – such as the status of Indigenous peoples as sovereign nations – thus "diasporizing," "ghettoizing," "racializing," "historicizing" and hiding the presence of minorities in the catalog (Olson, 2001; Furner, 2007; Green, 2015).
6. This does not apply to Indigenous artists, writers and scholars, for example, who are the single owners (and copyright holders) of their creative and/or intellectual work.
7. Mukurtu CMS is an example of a platform that works to overcome the incommensurability between western norms of authorship and Indigenous cultural protocols and community practice. Mukurtu users are subverting metadata standards by identifying themselves as the creators/authors of the materials they document within the platform while identifying anthropologists and ethnographers as the contributors of the resources instead (Christen, 2011, 2015, 2018). Other examples include: the Digital Library North Project, a collaboration between the Inuvialuit Cultural Research Centre in Inuvik, Northwest Territories and researchers at the University of Alberta, that resulted in the creation of a digital library infrastructure based on a community-driven metadata framework (Farnel *et al.*, 2017); and the Quinkan Matchbox, a metadata repository for digitally "returned" Quinkan cultural materials whose design was the result of a deep reflection within the community on how metadata could be meaningful to Quinkan tribal members (Lissonnet and Nevile, 2007).
8. As of the publication of this paper, only two communities have made their customized TK labels public: the Sq'éwlets Band of Sto:lo and the Passamaquoddy Nation.
9. See http://digitalsqewlets.ca/traditional-knowledge_connaissances_traditionnelles-eng.php
10. See https://loc.gov/item/2015655578
11. Learn more about the Ancestral Voices project here: www.newyorker.com/culture/culturedesk/the-passamaquoddy-reclaim-their-culture-through-digital-repatriation
12. The Karuk Tribe will be publishing their TK Labels in a forthcoming article. Jane Anderson and Kim Christen will complement this work with two articles: "Towards the Slow Archive" and "Decolonizing Attribution" (in development).
13. Some communities working with the TK Labels have chosen to use the template text offered by local contexts.
14. Local contexts works alongside Indigenous communities in their collaborations with external institutions to facilitate the addition of the TK labels into those institutions metadata schemas, similarly to how the TK Labels were added to the Library of Congress' MARC records of Passamaquoddy songs. The TK Labels, however, have not been integrated as a fixed application of any metadata schema as of the publication of this paper.

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