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Knowledge Organization Systems and Information Ethics for Visual Resources

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Knowledge Organization Systems and Information Ethics for Visual Resources

Abstract
This article examines the diverse problems current visual resources workflows and other information systems pose for Native American/Indigenous cultural heritage materials, using the concept of the knowledge organization system as a unit of analysis. I assert that the information systems many United States-based GLAMs professionals use have colonial histories, built to assimilate or diminish Indigenous knowledge. These histories still have an impact on current protocols employed by cultural heritage institutions, through their use of inaccurate terms and rejection or failure to include Indigenous voices. The article analyzes several examples of Native and non-Native efforts to make meaningful changes by revising or combining various knowledge organization systems, extending their implications for the visual resource and cultural heritage community. I then explore how professionals can use these concepts to better inform their own practices towards description, use, storage, and access for Native information.

This article has undergone a double-blind peer review process.

Keywords
visual resources, digital curation, advocacy, intellectual property rights, data standards, cataloging, metadata, collection management, information ethics, cultural heritage, museums, Indigenous studies, critical cataloging, knowledge organization systems, critical metadata

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Defining the Knowledge Organization System

Knowledge organization (KO) systems are structures used by institutions to classify and order information.[1] In the museum, library, and university world, these knowledge systems range from metadata standards, such as VRA Core, to subject headings and thesauri, like Library of Congress Subject Headings (LCSH) and the Getty Vocabularies, to digitization workflows and copyright policies. These systems are integral to visual resource and digital humanities work as they facilitate the organization and dissemination of cultural heritage information through standardization, through common data elements and values. KO systems can be independent but more often interact with others, as you can see in this map (fig. 1) outlining different knowledge systems inside a museum's registrar department.[2]

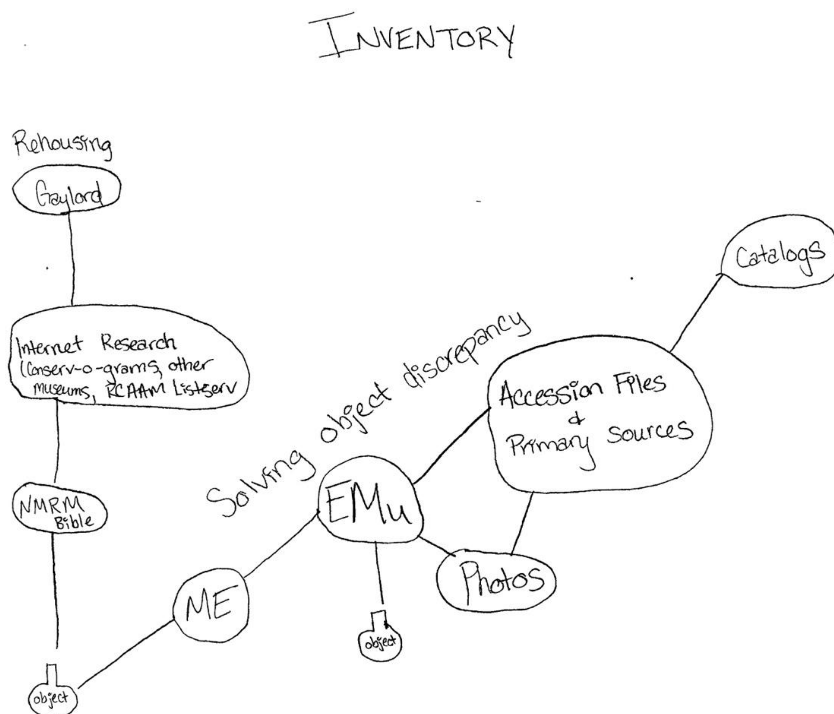

Figure 1: Information Horizon Map drawn by a registrar, 2018. Image created for the author.

This example illustrates the information ecosystem created by interrelated KO systems, with standards and policies layering over each other temporally and thematically. These systems are, naturally, underpinned by specific epistemologies that inform how that information is being categorized. For this institution, a catalog record is influenced by the formatting of the accession files in EMu (EMuseum), which in itself is a standard structured by other cultural heritage professionals. Analyzing work standards as knowledge organization systems is a useful tool for examine one's own work, from institutional-wide workflows to project-specific metadata or cataloging standards. KO analysis aims to answer questions about how different standards are related: What information is being valued and why? What information is missing? How do these different systems prioritize the same information? These are crucial questions as visual resources

[1]Melissa Adler, "The Case for Taxonomic Reparations," *Knowledge Organization* 43, no. 8 (2016): 631-633.
[2]Devon Murphy, "The Information Worlds of Art Museum Curators and Registrars: an Institutional Ethnography of Practice in North Carolina Institutions," (master's thesis, University of North Carolina at Chapel Hill, 2018), 74, https://doi.org/10.17615/bb8t-cp12.

and other cultural heritage professionals work with information from non-Western cultures and communities, some of which information can be culturally sensitive or historically misattributed.[3]

Critiques of Western cultural heritage practices have long been voiced and are currently increasing, as seen in the development of critical cataloging projects to amend LCSH, and charges to change museum terminology for collection objects.[4] These systems' complex and frequently racist legacies leave us with the question of how professionals can responsibly work with partners to manage non-Western cultural heritage information. This article specifically examines the Native American context, as Native materials exist in a multitude of institutions across the United States, as well as globally.[5] However, this work aims to be applicable to other contexts in terms of its unit of analysis, the KO system. I first explore the historical formation of some museum and library classification systems as they relate to Native information, asserting that these colonial knowledge systems still have an impact on current protocols employed by cultural heritage institutions. I then present several examples of Native and non-Native efforts to make meaningful changes by revising or combining various KO systems, analyzing their implications for the visual resource and cultural heritage community. This article explores how professionals can use these concepts to better inform their own practices of description, use, storage, and access for Native information. Native scholars, artists, and curators have long petitioned institutions to amend problems caused by Western KO systems; it is a necessity for professionals, both Native and non-Native, to come together.[6]

Impact of Colonial Knowledge Organization Systems

Inherent in knowledge organization is the ability to control information and its effects on the people and objects it seeks to make sense of.[7] As Adler illustrates, colonial projects across the world used KO systems to marginalize non-Western people, with the legacies of those systems persisting in various forms today.[8] In the Indigenous context, many of the United States' classification systems are deeply intertwined with U.S. colonial Indian policy, which sought to use strict racial categorization as a tool to diminish Native title to land.[9] The U.S. government created a panoply of organizational systems beginning in the early 1800s: reservations, land

[3]One example is Haudenosaunee False Face masks, which are not meant to be viewed by individuals outside of the medicine society they belong to. For more information, see Chief Leon Shenandoah, "Haudenosaunee Confederacy Announces Policy on False Face Masks," 1995, http://www.nativetech.org/cornhusk/maskpoli.html.
[4]Marisa Duarte and Miranda Belarde-Lewis, "Imagining: Creating Spaces for Indigenous Ontologies," *Cataloging & Classification Quarterly* 53 nos. 5-6 (2015): 684. For some examples of changing subject headings projects, see the Manitoba Archival Information Network or the Provincial Archives of Alberta:
https://main.lib.umanitoba.ca/indigenous-subject-headings and
https://provincialarchives.alberta.ca/sites/default/files/2020-05/PAASH-2020.pdf.
[5]A note on terminology: following practice in other Native North American scholarship, I designate nation/tribal affiliation using parentheses. I also use Indigenous to refer to Indigenous people across the Americas and Native or Native American to refer to Indigenous people within the United States. When speaking about specific people or communities, their specific titles are used as much as possible. Adapted from Amy Lonetree, *Decolonizing Museums: Representing Native America in National and Tribal Museums,* Chapel Hill, NC: University of North Carolina Press, 2012 and Stephanie Russo Caroll, Desi Rodriguez-Lonebear, and Andrew Martinez, "Indigenous Data Governance: Strategies from United States Native Nations," *Data Science Journal*, 18, no. 31 (2019): 2-3.
[6]Karen Coody Cooper, *Spirited Encounters: American Indians Protest Museum Policies and Practices* (Lanham, MD: AltaMira Press, 2008), 2-10; Lonetree, *Decolonizing Museums*, 26-32.
[7]Adler, "The Case for Taxonomic Reparations," 632-636.
[8]Ibid, 632.
[9]Ibid, 635-637; Erin Fouberg, *Tribal Territory, Sovereignty, and Governance: A Study of the Cheyenne River and Lake Traverse Indian Reservations,* (New York, NY: Routledge, 2000), 75-77.

allotments, tribal registration/blood quantum requirements, residential schools, and collections of Native cultural heritage were all part of this project, amongst many other tools.[10] In turn, close relationships between government bodies like the Bureau of Ethnology (BAE) and the Bureau of Indian Affairs (BIA) as well as scholarly institutions transferred these misrepresentations to museum catalogs and description systems, sharing collections and scholarly knowledge. Institutions such as the University of Pennsylvania Museum of Archaeology and Anthropology, the Peabody Museum of Archaeology and Ethnology, and the Museum of the American Indian benefitted from the vast amounts of data and objects amassed by the BIA and the BAE.[11] The accrued information, ranging from ethnobotany to typologies of basket forms, was organized to document lifeways considered to be disappearing and to exploit that information for various government reform projects.[12] These knowledge organization systems imposed categories that did not apply to Native realities; with both the U.S. government and museums having the power to categorize, Native communities lost the right to describe themselves.

The links between scholars and universities, government bodies conducting anthropological work, and museums helped to create an epistemic network on Native information, sharing terms and cataloging hierarchies together; this information still persists in catalogs today through the scholarship produced by these networks, having been captured in subject heading lists, thesauri, and even residually in metadata standards.[13] An example of these residues is the Library of Congress's subject headings, which continue to include outdated terms like "Indians of North America," use generic descriptors instead of specific historical or legal names for tribes, and previously denied moving Native American subject headings to 20th-century history categories.[14] LCSH subject headings originated in 1898, built from historical literary warrant; as noted previously, information about Indigenous people at this time was largely produced by institutions like the BAE, the BIA, and anthropological museums such as the Peabody.[15] Their works, which emphasized the historicity of Native Americans, were often treated as warrant, disregarding the voices of living Indigenous individuals.[16] Other subject and name authorities, like the Getty Vocabularies, while having been conceived long after the early 1900s rush of museum anthropology, still carried on colonial legacies in its early years by focusing on the same issue of literary warrant. Many of its terms relating to Native Americans, having first been entered in the 1980s and 1990s, use LCSH or older anthropological publications as appropriate sources or warrant, reinforcing inappropriate or outdated terms.[17] It

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[10]Coody Cooper, *Spirited Encounters*, 2-10.
[11]Conn, *History's Shadow*, 107-117, 178-185.
[12]Erik Trump, "'The Idea of Help:' White Women Reformers and the Commercialization of Native American Women's Art," in *Selling the Indian: Commercializing and Appropriating American Indian Cultures*, eds. Carter Jones Meyer and Diana Royer (Tucson, AZ: University of Arizona Press, 2001), 167-168, 174-177; Susan Labry Meyn, *More than Curiosities: A Grassroots History of the Indian Arts and Crafts Board and Its Precursors, 1920-1942* (Lanham, MD.: Lexington Books, 2001), 30-32, 36.
[13]Conn, *History's Shadow*, 178-190; Duarte and Belarde-Lewis, "Imagining," 684-685. For more, see also Hannah Turner, *Cataloguing Culture: Legacies of Colonialism in Museum Documentation*, (Vancouver, B.C.: UBC Press, 2020).
[14]Duarte and Belarde-Lewis, "Imagining: Creating Spaces for Indigenous Ontologies," 684-685.
[15]Conn, *History's Shadow*, 107-117, 178-185; Duarte and Belarde-Lewis, "Imagining," 684-685, 694-695; "Library of Congress Subject Headings (LCSH)," Librarianship Studies & Information Technology, 2020, https://www.librarianshipstudies.com/2018/01/library-of-congress-subject-headings-lcsh.html.
[16]Conn, *History's Shadow*, 107-117, 178-185.
[17]As one example: "Nootka (Culture or Style)," Art and Architecture Thesaurus Online, Getty Vocabularies, accessed 2020, http://vocab.getty.edu/page/aat/300017616, though the same pattern exists throughout the Native North American terms in AAT, including those terms that have been updated; Patricia Harpring, *Introduction to Controlled Vocabularies: Terminology for Art, Architecture, and Other Cultural Works*, ed. Murtha Baca, Los Angeles, CA: J.

is important to note that the Getty Vocabularies is actively updating these terms in light of this issue.[18] In turn, metadata schemas, like VRA Core and DACS (an archival content standard that lists both LCSH and Getty terms as appropriate for use) that encourage use of these thesauri and subject headings can carry on these colonial legacies if some of the Native American terms in use have not been updated to fit Indigenous realities.[19] As well as inaccurate terminology, non-Native metadata schemas also face the issue of fitting Indigenous information into categories that do not mesh with Indigenous worldviews, such as the problem of having one particular creator or lacking fields to explain community relationships.[20]

Even as GLAM (galleries, libraries, archives, and museums) policies have shifted, these legacies persist through databases, labels, and other methods of organization. It is vital to view museums as knowledge organization systems because of these histories of categorization, which can highlight what narratives are being constructed. What information is and is not present is crucial to understanding the gaps between different ways of knowing, or knowledge organization systems, inherent in the museum structure.

Native and non-Native professionals have enacted many changes in GLAMs, from removing sensitive cultural objects from physical and online display to amending controlled vocabulary and subject heading lists.[21] However, racist legacies persist due to the wide-ranging impacts of colonialism, stretching from the delegitimization of Indigenous knowledge forms to the historicization of Indigenous people.[22] The following examples illustrate this historical residue within online catalogs and controlled vocabulary terms.

Indigenous collections information is often sourced from donors' understandings of the objects, as early collectors rarely recorded details from Native makers themselves, or in the case of art markets and trading posts, non-Native sellers would often apply terms of their own invention to Native goods to encourage sales.[23] For instance, the Indigenous collection at the Gregg Museum of Art and Design in Raleigh, North Carolina is largely sourced from a single

Paul Getty Trust, 2010, http://www.getty.edu/research/publications/electronic_publications/intro_controlled_vocab/cultural_objects.html, section 4.3, for a brief history of the Getty Vocabularies.

[18] "Newsletter: New Records in the Getty Vocabularies," Getty Vocabularies, Getty Vocabularies, September 2020, https://www.getty.edu/research/tools/vocabularies/guidelines/aat_monthly_new_recs.pdf, 1-10, provides examples of updated terms created by the author, current Vocabularies editors, and by members of the Getty Digital Florentine Codex project.

[19] "VRA Core 4.0 Element Description," VRA Core Schemas and Documentation, Library of Congress, 2015, https://www.loc.gov/standards/vracore/VRA_Core4_Element_Description.pdf, 1-11; "Describing Archives: A Content Standard, Second Edition (DACS)," Society of American Archivists, 2013, http://files.archivists.org/pubs/DACS2E-2013_v0315.pdf, xxii, 104, 143.

[20] Molly Torsen and Jane Anderson, *Intellectual Property and the Safeguarding of Traditional Cultures: Legal Issues and Practical Options for Museums, Libraries and Archives,* World Intellectual Property Organization, 2010, https://www.sustainableheritagenetwork.org/system/files/atoms/file/Anderson&Torsen_IntellectualPropertyandtheSafeguardingofTraditionalCultures(WIPO).pdf, 28-29, 77.

[21] Museum of Anthropology, "Hadaje'grenata (Mask)," MOA Catalog, 2020, http://collection-online.moa.ubc.ca/search/item?keywords=false+face+mask&row=1 serves as an example of removing culturally sensitive items from online display. For examples of amending controlled vocabularies and subject headings, see the First Nations, Metis, and Inuit Indigenous Ontologies https://nationalindigenousknowledgeandlanguagealliance.home.blog/ and the Manitoba Archival Information Network https://main.lib.umanitoba.ca/indigenous-subject-headings.

[22] Duarte and Belarde-Lewis, "Imagining," 685-689.

[23] Sarah H. Hill, *Weaving New Worlds: Southeastern Cherokee Women and Their Basketry* (Chapel Hill: University of North Carolina Press, 1997), 302.

donation from former BIA employees Drs. Norman and Gilda Greenberg.[24] One of the collections objects on display, a 20th century rivercane basket by Eastern Band of Cherokee artist Lizzie Youngbird, is described as having a "Chief's Daughter" pattern.[25] No supporting information in the display label explains that these pattern names, including "Chief's Daughter," were actually constructed by a non-Native arts manager, Gertrude Flanagan, to encourage sales, all without input from the Cherokee weavers she worked with.[26] These pattern names, inscribed in sale labels and product guides, were then documented in the Greenbergs' object logs, which in turn were utilized in exhibit labels and in the online catalog.[27] In doing so, Youngbird's understanding of her work is obscured, omitted through the varying knowledge organization layers of the gallery, collector, and the museum. Analyzing knowledge organization systems helps to uncover these gaps in representation.

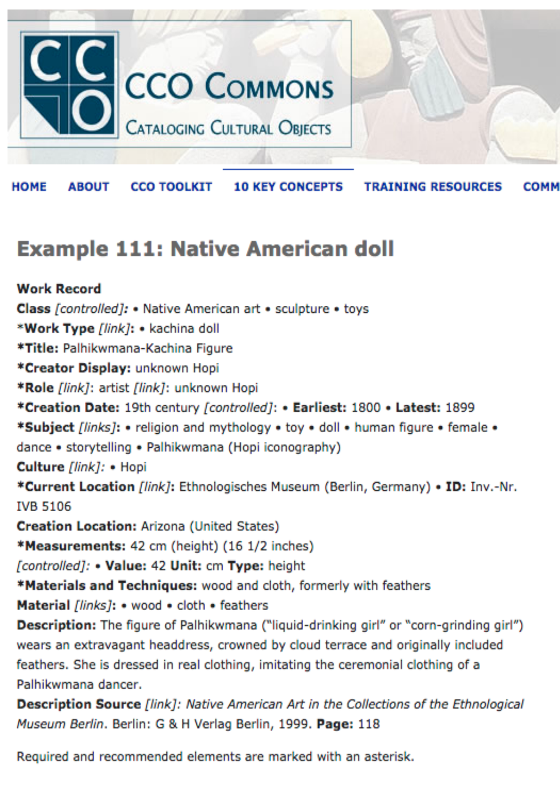

Figure 2: Screenshot of CCO's example record for "Native American doll," 2019.

[24]"Treasures of Native America: Selections from the Drs. Norman and Gilda Greenberg Gift," Hillsborough Street, 2019, https://www.hillsboroughstreet.org/do/treasures-of-native-america-selections-from-the-drs-norman-and-gilda-greenberg-gift.

[25]Museum label for Lizzie Youngbird, Cherokee Storage Basket, Raleigh, Gregg Museum of Art and Design, October 2018, "Treasures."

[26]Hill, *Weaving New Worlds*, 302-305. Many Cherokee artists who worked with non-Native arts managers stated that the pattern "names had no meaning to them," during interviews with Sarah Hill. Weavers had their own names or stories attached to each basket that were often not recorded.

[27]Norman and Gilda Greenberg, Object Log, Years 1950-1960s, (Gregg Museum of Art and Design, North Carolina State University, Raleigh, NC: 1950s-1960s), unpublished object purchasing log; Mary Hauser, Cherokee Objects report (Gregg Museum of Art and Design, North Carolina State University, Raleigh, NC, 2018), unpublished catalog records report, 18.

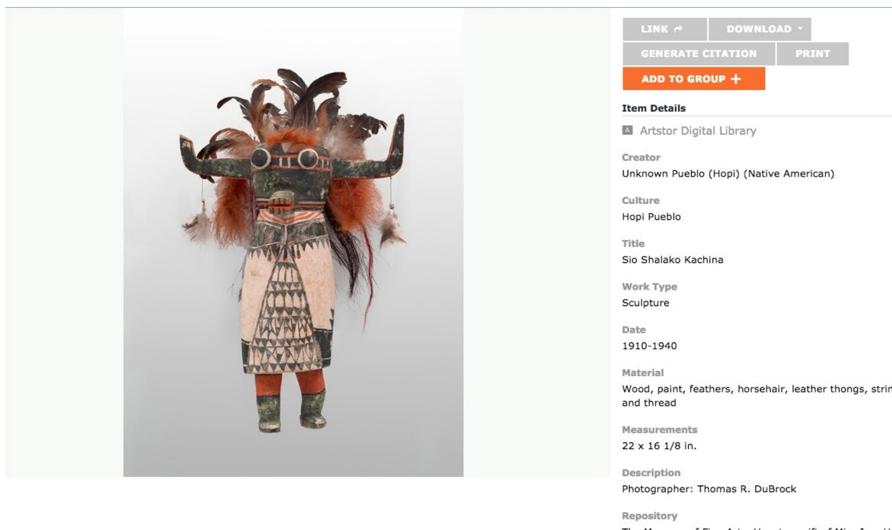

Figure 3: Screenshot of a record for a Katsina doll in the Museum of Fine Arts Houston's collection in ArtSTOR, 2019.

Historical data, and its inaccuracies, can be replicated outwards from museum catalogs into multiple resources. Take this example of two different records describing a similar item, a Katsina doll. Figure 2 is an example record illustrating CCO (Cataloging Cultural Objects), a data standard used for art images and object collections. Figure 3 is a record of a Katsina doll from the Museum of Fine Arts Houston, entered into the image-sharing database ArtSTOR. Figure 3 uses similar fields to CCO, and both utilize the Getty Vocabularies as data value standards. Both of these are trying to describe Katsina dolls, complex objects that can be a doll, an educational toy, a spiritual object, and an art object, sometimes all at once.[28] This variability is partially due to how Katsinam function in Hopi society and also due to their historical implications in artifact, art object, and souvenir trading networks manned by white collectors and trading posts, beginning in the 1800s.[29] As Kelley Hays-Gilpin notes of contemporary carvers, "[s]ome carvers...do not carve for sale, others carve 'traditional' dolls for ceremonies but produce stylized 'sculpture' for sale, and still others make no distinction"[30] between being made for tourist art markets and for ceremony. Katsinam can be many things.

In the CCO record (fig. 2), a Katsina doll is recorded in the Class field as being related to "Native American art, sculpture, and toys," and its Work Type field distilling these identities to "katsina doll." The MFA Houston record (fig. 3) simply lists the item as a sculpture. Not only do these represent different understandings of what this object is, but Houston's record flattens the historically rich object types Katsinam can contain and in many cases, misrepresents what Katsinam are. Terms matter.

Classification and terminology have real world consequences; persistent use of stereotypical or outdated terms can perpetuate cultural and religious discrimination, inhibit Indigenous users from finding relevant information about themselves or other Indigenous communities, and undercut the abilities of tribes to define themselves as stable entities, as well as

[28]Kelley Hays-Gilpin and Ramson Lomatewama, "Curating Communities at the Museum of Northern Arizona," in *Reassembling the Collection: Ethnographic Museums and Indigenous Agency*, eds. Rodney Harrison, Sarah Byrne, and Anne Clarke (Santa Fe, NM: SAR Press, 2013), 261-263

[29]Kelley Hays-Gilpin, "Crafting Hopi Identities at the Museum of Northern Arizona," in *Unpacking the Collection: Networks of Material and Social Agency in the Museum*, eds. Sarah Byrne, Anne Clarke, Rodney Harrison, and Robin Torrence, (New York, NY: Springer, 2011), 201-203; Meyn, *More than Curiosities*, 36-46.

[30]Hays-Gilpin, "Crafting Hopi Identities," 201.

undermining the stated educational missions of the GLAM institutions that may use these inappropriate terms.[31] By not acknowledging Native knowledge organization systems or their histories, the information within, as well as the museum/library systems themselves, creates a "taxonomy of harm."[32] Duarte and Belarde-Lewis sum this up nicely, writing:

> Challenges include identifying authoritative names of tribes and peoples, such as Navajo or Dine; historical periodization within Anglo-American cataloging and classification schemes; and identifying accurate terms to reflect the unexpected diversity of Indigenous topics. We assert that these are not unrelated and inconvenient phenomena endemic to Indigenous knowledge, but rather the evidence of systemic colonial marginalization.[33]

While this can be a daunting task, there are a variety of tools available to help reassess one's knowledge organization systems, from controlled vocabularies to digitization processes to image-sharing protocols. Some of these tools, created by both Native and non-Native partners, will be highlighted in the following section. This is not meant to be a comprehensive list nor a substitute for direct consultation with appropriate communities, but instead a window into work being done by GLAM professionals to bridge knowledge organization systems.

Weaving Knowledge Organization Systems Together

The first step to any review of one's knowledge organization systems is to reach out to relevant communities; these communities may be represented within one's collections as well as users of them. The School of Advanced Research's (SAR) Guidelines for Collaboration provide tandem steps for both institutions and community members to begin this process, outlining protocols for initial contact, devising meetings, and structuring site visits.[34] Presented as a list of questions, these guidelines are meant to prompt community members and institutions to consider knowledge systems different from their own.[35] For individuals, SAR's questions assist in understanding GLAM policies, while for institutions, the guidelines model how to be accommodating of communities' varied information needs. As the relationships between GLAMs and Native Americans have long been fraught, SAR's resource aims to mitigate harm by acknowledging historical power imbalances and by putting Native informational needs first.[36]

It is important to note that SAR's Guidelines for Collaboration are not a one-size fits all model; each community will have its own protocols and methods of communication. For example, the Karuk Tribe of California has a detailed collaboration framework for university

[31]Duarte and Belarde-Lewis, "Imagining," 691-693; Yve Chavez, "Basket Weaving in Coastal Southern California: A Social History of Survivance," *Arts* 8, no. 3 (2019): 1-2, 5-9.
[32]Melissa Adler and Joseph Tennis, "Toward a Taxonomy of Harm," *NASKO* 4 no. 1 (2013): 3-5; María Montenegro, "Subverting the universality of metadata standards: The TK labels as a tool to promote Indigenous data sovereignty," *Journal of Documentation* 75 no. 4 (2019): 733-735.
[33]Duarte and Belarde-Lewis, "Imagining," 678.
[34]Indian Arts Research Center, "Introduction," Guidelines for Collaboration, School for Advanced Research, Santa Fe, New Mexico, 2019, https://guidelinesforcollaboration.info/.
[35]Indian Arts Research Center, "Guidelines for Communities," https://guidelinesforcollaboration.info/guidelines-for-communities/.
[36]Indian Arts Research Center, "Guidelines for Museums," https://guidelinesforcollaboration.info/guidelines-for-museums/.

researchers, based in Karuk ways of knowing.[37] Its title, "Practicing Pikyav," is in reference to the Karuk concept of pikyav or "to fix it"; all research and collaboration with Karuk cultural heritage staff is organized under this ontology, with a particular pikyav board created for each collaboration.[38] Other nations, like the Eastern Band of Cherokee Indians (EBCI), require collaboration to be determined by tribal preservation office and museum staff, with different levels of oversight based on the information involved in the collaboration or research.[39] Critically, amongst all nations are overlapping communities and concerns; SAR itself notes the importance of contacting a variety of partners in order to represent many voices, from elders to scholars to youth.[40]

A second consideration is reviewing one's work processes alongside Indigenous partners. These workflows do not always consider non-Western protocols, hindering informational sovereignty for Indigenous users and communities. One resource is the Digital Stewardship Curriculum offered by Association of Tribal Archives, Libraries, and Museums (ATALM); the curriculum is comprised of resources that chart each part of the curation lifecycle, from acquisition to digitization to description to access and preservation, with steps on how to conduct those tasks with Indigenous considerations in mind.[41] Specifics should be filled in by consultation with Native partners. The World Intellectual Property Organization (WIPO) also offers guidance on these steps, with more specific considerations into digitization workflows, metadata creation, and varying forms of ownership.[42] For example: Can these items be ethically imaged and copied, if they have not been already? Are there terms that need to be avoided in metadata tags? What considerations must be made in cases of collective ownership of an image or work? These suggestions are meant to fill in the gaps between copyright rules in one's own state and to act as an intermediary when Indigenous collections from groups outside of one's home state are involved (ex. Australian Aboriginal or First Nations material.)[43] As Western protocols like open access or digitization are not universal, their common application to non-Western materials continues colonial control.

The next step is to implement recommendations made by Indigenous partners. A variety of digital tools have been created by Native and non-Native scholars to accommodate varying knowledge systems and protocols. Many of these projects can be adapted into existing digital asset management systems, catalogs, and collections management systems, while others are wholesale alternatives to these databases. Those in the latter category are often used for

[37]Karuk Tribe of California, "Practicing Pikyav: A Guiding Policy for Collaborative Projects and Research Initiatives with the Karuk Tribe," The Sustainable Heritage Network, https://sustainableheritagenetwork.org/system/files/atoms/file/KarukTribe_PracticingPikyav.pdf.
[38]Ibid, 1.
[39]Museum of the Cherokee Indian, "Research Inquiries," Museum of the Cherokee Indian, accessed 2020, http://www.cherokeemuseum.org/archives/research-inquiries. In my own experience working with the Museum of the Cherokee Indian, an EBCI-run institution, my ability to access archival information and physical baskets were determined by museum and archival staff. Other information requests, such as interviews, would have been reviewed by the tribal government.
[40]Indian Arts Research Center, "Guidelines for Museums," https://guidelinesforcollaboration.info/guidelines-for-museums/.
[41]"Digital Stewardship Curriculum Page," The Sustainable Heritage Network, Center for Digital Scholarship and Curation at Washington State University, 2020, https://www.sustainableheritagenetwork.org/digital-stewardship-curriculum-page.
[42]Torsen and Anderson, *Intellectual Property*, 2010, 28-29, 77.
[43]Ibid, 33, 39-40, 44-45.

specialized projects or by tribal cultural centers, but aspects of their design and use of information can be carried into other systems.

An example of the former are Traditional Knowledge Labels (TK labels) created by Local Contexts, a project focused on assisting Indigenous communities' management of their information.[44] These labels, serving as image licenses, attribution markers, or notices, aim to inform users about the status of the Indigenous information they are looking at.[45] While similar in visual form to Creative Commons licenses, TK labels expand the idea of rights holders beyond Western-based copyright norms to consider various Indigenous understandings of who can administer knowledge, how knowledge can be used, and what forms knowledge can take. An example of their use can be seen on the Sq'ewlets First Nation's website, containing cultural heritage information ranging from basketry to ancestral archaeological finds.[46] Each label, located at the top of every collections page, designates protocols for sharing and citing as determined by Sq'ewlets knowledge systems.[47] Other TK labels are deployed in lieu of object photos when an item is culturally sensitive, demonstrating that its visual appearance cannot be shared with certain parties.[48] The Library of Congress is another recent adopter of TK labels, using them for its Ancestral Voices collection of ethnographic recordings; each label applied is based on the protocols of the communities represented in the recording.[49] Local Contexts' labels aim to fit a variety of information needs by having a variety of templates that can then be formatted to fit particular uses.[50] With their flexibility and easy integration into collections management systems, TK labels are a creative strategy to integrate different knowledge systems and ensure the ethical use of Indigenous visual and textual information.

Projects like Mukutu CMS and the Indigenous Digital Archive offer examples of how Western-derived collections management systems can be retooled to fit Indigenous information needs. Mukutu CMS is a collections management system originally built by Warumungu community members and two Washington State University faculty, Kim Christen and Craig Dietrich, for Warumungu Australian Aboriginal use; the project has since expanded into a set of digital tools to create collections management systems for use by any Indigenous community.[51] Mukutu CMS integrates varying levels of access and description for each record, allowing some items to only be viewable by certain community members, while others may include descriptive text written by different Indigenous and non-Indigenous partners.[52] The inclusion of TK labels

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[44]Local Contexts, "Traditional Knowledge (TK) Labels," Local Contexts, New York University, 2020, https://localcontexts.org/tk-labels/; Montenegro, "Subverting the universality of metadata standards," 739-742.
[45]Ibid.
[46]Stó:lō Research and Resource Management Centre / Stó:lō Nation, "OUR BELONGINGS | Á:WKW'," Sq'éwlets | A Stó:lō-Coast Salish Community in the Fraser River Valley, 2016, http://digitalsqewlets.ca/sqwelqwel/belongings-possessions/index-eng.php.
[47]Ibid.
[48]Stó:lō Research and Resource Management Centre / Stó:lō Nation, "HUMAN REMAINS, http://digitalsqewlets.ca/sqwelqwel/belongings-possessions/ancestors-ancetres/human-remains_restes-humains-eng.php.
[49]"About This Collection," Library of Congress Collection Ancestral Voices, Library of Congress, 2020, https://www.loc.gov/collections/ancestral-voices/about-this-collection/. You can see an example of these labels in action at https://loc.gov/item/2015655578.
[50]Local Contexts, "Traditional Knowledge (TK) Labels," https://localcontexts.org/tk-labels/.
[51]Mukurtu, "Our Mission," Mukurtu. Center for Digital Scholarship and Curation, Washington State University, 2020, https://mukurtu.org/about/.
[52]Kim Christen, "Indigenous Knowledge Systems and Mukurtu CMS / Kim Christen," The Design for Diversity Learning Toolkit, Northeastern University Library, 2018, https://des4div.library.northeastern.edu/indigenous-knowledge-systems-and-mukurtu-cms/.

adds a layer of explanation and enforcement for Indigenous usage permissions.[53] An example of this is the Plateau Peoples' Portal; the screenshot below shows an example record of a "sally bag" with both collections information and elders' knowledge side by side to give a fuller record about the object. The same practice is followed for other objects and images in the collection.[54]

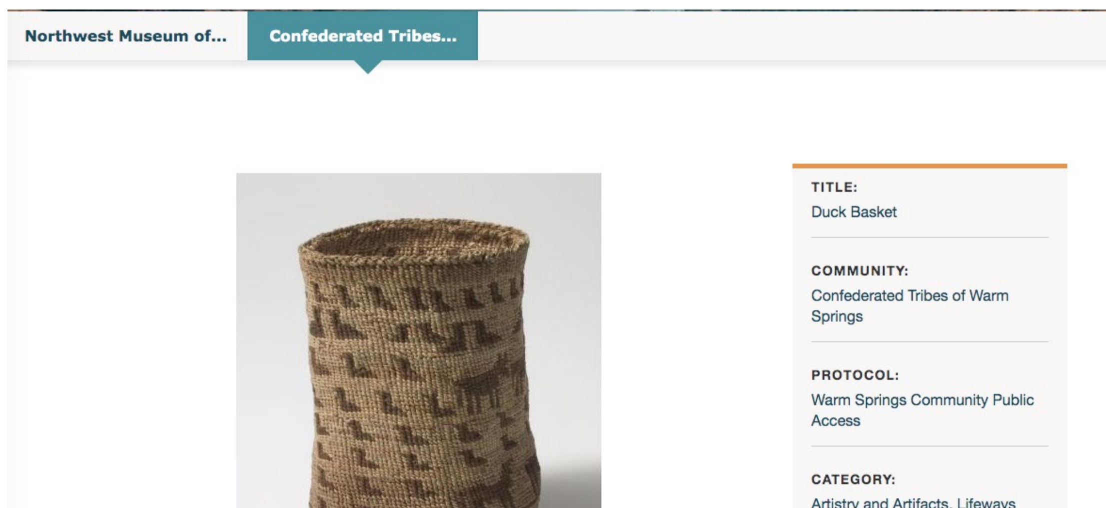

Figure 4: Screenshot of the Plateau Peoples' Portal collections viewer, highlighting the museum and tribal authority information tabs, 2020.

While commitment to using an entire collections system is often out of scope, the choice to integrate and cite varied community voices based on their protocols is easily adaptable. The Indigenous Digital Archive is an example of such a project, containing records of Indigenous residential school students from across the United States.[55] Built with Digirati, the archive centers community control in description, tagging, and use of materials. Features include allowing community members to flag inappropriate material (including digital objects and tags) for removal at any point in the digital preservation lifecycle, as well as repurposing transcription tools to empower community members to offer "counternarratives" to the content represented in official residential school documents.[56] These tools are particularly important to the archive's stakeholders, residential school survivors and their families, who historically have had little say in how their experiences have been represented; the ability to challenge and edit the archive can become a healing act. The Indigenous Digital Archive's example allows us to reconsider metadata creation as not a singular job, but as responsive community work.

This reminder is prescient as scholarship moves further into the digital realm with the advance of COVID-19; while the impulse to digitize as much content as quickly as possible is attractive, we must still make space to be critical and examine the knowledge organization

[53]Mukurtu, "Learn about Mukurtu CMS," https://mukurtu.org/learn/.
[54]Arlita Rhoan, Valerie Switzler, Maxine Switzler, and Northwest Museum of Arts and Culture, Confederated Tribes of Warm Springs, "Root Gathering Bag," Plateau Peoples' Web Portal, accessed August 2020, https://plateauportal.libraries.wsu.edu/digital-heritage/root-gathering-bag-3.
[55]The Indigenous Digital Archive Team, "Respectful Online Access," Indigenous Digital Archive, 2020, https://omeka.dlcs-ida.org/s/ida/page/respect. Residential schools refer to boarding schools built by the United States government for the purpose of assimilating Indigenous youth. Carlisle Indian School was one of the first, constructed in the 1870s, with the last few remaining until the 1970s. For more information, see the Sherman Indian School Museum site: http://www.shermanindianmuseum.org/sherman_hist.htm.
[56]The Indigenous Digital Archive Team, "Respectful Online Access," https://omeka.dlcs-ida.org/s/ida/page/respect.

systems that our workflows are a part of. All collections, whether image, art, or document-based, contain diverse communities. By extension, the knowledge organization systems we use to understand those collections must be responsive to and built with those communities. These actions are but one step towards unsettling colonial harm.

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