

TOWARD A HAWAIIAN KNOWLEDGE ORGANIZATION SYSTEM:
A SURVEY ON ACCESS TO HAWAIIAN KNOWLEDGE IN LIBRARIES AND ARCHIVES

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By
Shavonn-Haevyn Matsuda

Thesis Committee:
Rich Gazan, Chairperson
Andrew Wertheimer
Ruth Horie

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Abstract

Libraries and archives in Hawai‘i and around the world contain significant collections of Hawaiian knowledge. This thesis examines the adequacy of Western Knowledge Organization Systems (KOS) for Hawaiian knowledge and presents the results of an investigation into the creation of a Hawaiian system of organizing knowledge. Semi-structured interviews were conducted with a sample of Hawaiian scholars and a sample of information professionals in Hawai‘i to discover successes and challenges in accessing Hawaiian knowledge in libraries and archives and to explore opportunities for a KOS designed for Hawaiian collections and communities. Select KOSs created and implemented by other indigenous peoples were reviewed along with past and ongoing efforts in Hawai‘i to improve access within Library of Congress classification and subject headings. Key considerations for a Hawaiian KOS are presented: the immensity of Hawaiian knowledge, decisions concerning the language of a KOS, the need for Hawaiian library and information science professionals and the importance of collaboration in the creation and maintenance of a Hawaiian KOS.

Introduction

Libraries and archives in Hawai‘i and around the world contain significant collections of Hawaiian knowledge. These collections are often times central to the ongoing settlement of land claims, to genealogy research, to language and cultural revitalization, and to assertions of Hawaiian sovereignty. Language revitalization efforts have made use of audio and written recordings of mānaleo (native speakers), ‘ōlelo Hawai‘i (Hawaiian language) newspapers and other documentation found in libraries and archives (Nogelmeier, 2010). These resources are increasingly being digitized and placed online in searchable formats. Archives in particular have also become a valuable source for documentary materials to bolster political and legal arguments on the sovereignty of the Kingdom of Hawai‘i. A good example of this is the “Kū‘ē Petitions,” which were retrieved from the U.S. National Archives in Washington, D.C. in the late 1990s and circulated throughout Hawai‘i. The 556-page petition signed by thousands of Hawaiian citizens provides “concrete evidence of the will of the people against annexation [of Hawai‘i to the United States]” (Minton & Silva, 1998). This provides some context as to the significant role of libraries and archives for our Hawaiian community and why access to the collections stored and cared for at libraries and archives is important for Hawaiians and for our nation.

And, we have not even really begun to tap into the vast resources that have been preserved in libraries and other repositories. In terms of historical and cultural texts in ‘ōlelo Hawai‘i, it’s estimated that less than one percent have been translated and published. Nogelmeier (2010) explains, “the rest, equal to well over a million letter-size pages of text, remains untranslated, difficult to access in the original form, unused, and largely unknown” (p. xiii). This estimate only accounts for text written in ‘ōlelo Hawai‘i and does not consider existing documentation in English and other languages written by Hawaiians and others.

All of this helps to frame indigenous librarianship in Hawai‘i. Indigenous librarianship is a field of library and information science that focuses on “the provision of culturally relevant library and information collections and services by, for, and with Indigenous people” (Burns, Doyle, Joseph, & Krebs, 2010). It is a developing field locally and internationally that I was introduced to at the 2010 International Conference of Indigenous Archives, Libraries, & Museums (which was conveniently held in Honolulu that year). Indigenous librarianship

provides a lens for examining access to information for the Hawaiian people as an indigenous people.

My search for studies and publications on library and information services for Hawaiians revealed a general need for such research. Information about the mission, history, activities and holdings of individual Hawai'i-based institutions can be found on their websites and in library catalogs. Institutional research, reports and survey information on individual collections are also available though not always listed in library catalogs (for examples, see Rowntree (2008) or Hawaii Public Broadcasting (1987)). However, there seems to be ample opportunity for research on the extent and quality of information services in and across Hawai'i.

With the aim of understanding information services for Hawaiians as a driving motivation and at the same time a kuleana to contribute to the field of indigenous librarianship in Hawai'i, I began a preliminary investigation of the issue of access to Hawaiian knowledge held in libraries and other repositories, including physical access but with particular interest in digital access. Repositories in Hawai'i are increasingly digitizing materials and making them available in an online environment. Many of these online collections are being presented as part of institutional digital repositories; some digital repositories though, like Ulukau: The Hawaiian Electronic Library and Papakilo Database, are composed of collections from multiple libraries and archives.¹ Part of the appeal of digitization is to increase access. However, it isn't enough to simply digitize materials and deposit them online. Otherwise, we are simply recreating brick-and-mortar libraries in an online environment.

Digital technologies allow for more information to be shared and for more ways to link information so that we are no longer limited to the number of words that fit on a note card in a library's card catalog (Cameron & Robinson, 2007, p. 168). Herein lies an opportunity for information professionals and digital repository creators to capitalize on technology's affordances in order to be more inclusive and to provide additional context and relationships. We must pay close attention to the design of digital repositories and to the description and organization of materials if there is to be any realized improvements to access.

¹ See <http://ulukau.org> for Ulukau: The Hawaiian Electronic Library. See <http://papakilodatabase.com/main/main.php> for the Office of Hawaiian Affairs' Papakilo Database.

The provision of access to indigenous knowledge, especially in digital repositories, has commonly led to concerns regarding intellectual property rights and questions about the need for varying levels of access (particularly for objects and knowledge considered sacred). These are all noteworthy inquiries when managing indigenous knowledge in any repository. Still, I'm interested in going further to envision what an indigenous digital repository would look like as opposed to a digital repository that merely includes indigenous collections. This curiosity led me to examine the heart of digital repositories and all libraries really, the Knowledge Organization System (KOS). KOS is an umbrella term referring to any type of scheme for organizing information.

It is important to understand the significance of KOSs in physical collections and progressively more so in digital collections. KOSs are meant to serve as an intermediary between users and collections; the principal purpose is retrieval. Beyond technical considerations, social and cultural implications of using Western systems of knowledge organization must also be considered. Epistemological issues necessarily come to the forefront. The organization of knowledge fundamentally requires epistemological considerations involving what knowledge is, how knowledge is gained and to what extent it can be accessed (Augusto, 2008); all of this of course calls attention to worldviews.

Existing structures must therefore be examined to determine the level of adequacy for users. For Hawaiian communities, this means being critical of the Western KOSs that continue to occupy and control access to repositories of Hawaiian knowledge. In libraries, these systems are namely the Library of Congress Classification Schedule and Library of Congress Subject Headings as well as the Dewey Decimal System. As I will argue, we must be consciously aware of the individuals and institutions that are managing Hawaiian knowledge as they determine what knowledge is valuable and which aspects are important to include in classifications and descriptions. In the same way, they determine what knowledge is visible to researchers and what knowledge will remain unrepresented or unclassified in the KOS and consequently hidden (Augusto, 2008).

In chapter 1, I explain the importance of KOSs, like subject headings and classification schemes, in the provision of access to library and other collections. I also provide an analysis of

Western KOSs and conclude that Western KOSs like the Library of Congress KOS are inadequate for describing and organizing Hawaiian knowledge.

For the specific purpose of improving access to Hawaiian knowledge, theoretical foundations for the implementation of an indigenous system of organizing and representing knowledge are explored in chapter 2. In this chapter, I discuss the need for indigenous KOSs and provide a summary of two indigenous KOSs that have already been implemented – the Ngā Ūpoko Tukutuku Māori Subject Headings and the Brian Deer Classification. These projects were selected because they are widely known and together they offer insight as to options in the design and purpose of an indigenous KOS, including different levels of independence from Western KOSs. Examining these and other KOSs also provides insight into the parties and processes involved in the creation and maintenance of a KOS.

In reviewing the efforts of other indigenous peoples, the aforementioned chapter necessarily leads into a discussion of efforts pursued in Hawai‘i and the opportunities to increase access through the use of a Hawaiian KOS. Chapter 3 examines select past and ongoing efforts to improve access within the Library of Congress KOSs – 1) the University of Hawai‘i Libraries and the Hawaii/Pacific Subject Authority Funnel Project, 2) the KVJ Law Classification, a collaboration between the Library of Congress and the William S. Richardson Law School Library at the University of Hawai‘i, and 3) a Hawaiian cataloging pilot project at Chaminade University. These efforts are significant but limited in the sense that all are chiefly focused on improving Western KOSs and perpetuating their use.

For this reason, I sought to illuminate perspectives on and experiences with current KOSs and ideas about the potential creation of a Hawaiian KOS. Chapter 4 describes my methodology. Semi-structured interviews with information professionals and Hawaiian scholars were conducted.

Chapter 5 presents the results of this study. Participant responses shed light on the sources of information participants commonly look to and the barriers to access they’ve faced in libraries and archives; these responses inform a Hawaiian KOS but are also significant for information services generally. Transitioning into discussions of a Hawaiian KOS, participants shared insight into organization and description; philosophies, metaphors and concepts for design; sources that could inform structure and terminology; language considerations; potential

starting points, and; leadership. Paths to remedying ongoing challenges through the development of a Hawaiian KOS were proposed.

In chapter 6, I provide an analysis of choice thoughts and concerns that I considered most important for early discussions of the establishment of a Hawaiian KOS. Specifically, these considerations are: the immensity of 'ike, the sustainability of a KOS (mainly in terms of funding and making a long-term commitment), the need for Hawaiian LIS professionals, the usability of a KOS and the (digital) repositories that will use it, the language of the KOS, the basic need for education and training, and the importance of collaboration in the creation and maintenance of a Hawaiian KOS.

Finally, chapter 7 describes some of the benefits of a Hawaiian KOS. Its potential impact on language revitalization, scholarship and cultural literacy are explored. Ultimately, the goal of this study is to enable the Hawaiian community to preserve and manage knowledge in a culturally responsible and sustainable manner in order that it can be made accessible to our people and to all those who seek to research our Hawaiian culture and history.

This text includes 'Ōlelo Hawai'i words; to assist readers, English translations are provided in parentheses upon first mention. A glossary of 'ōlelo Hawai'i words and a list of acronyms is also provided in the appendices.

Chapter 1: Knowledge Organization Systems

Knowledge Organization System (KOS) is an umbrella term referring to any type of scheme for organizing information. The principal purpose of KOSs is retrieval – to be able to locate relevant items in the library, archive, museum or other repository. KOSs are meant to serve as an intermediary between users and collections. There are different types of KOSs; the more commonly used KOSs include classifications, subject headings, authority files, and thesauri.

Libraries use KOSs for physical and intellectual control of collections. Accordingly, KOSs are the core of every library. KOSs in libraries usually take the form of classification schemes and subject headings. These KOSs are typically created for and directed by a national institution like the United States Library of Congress. A primary example of subject headings is the Library of Congress Subject Headings (LCSH), which is a set of controlled vocabulary established by the Library of Congress to represent the subjects of items in their collections. Examples of classification systems include the Dewey Decimal System (DDC), the Library of Congress Classification (LCC), and the Universal Decimal Classification; most public libraries use the DDC whereas academic libraries tend to use LCC. Library professionals have yet to agree on a classification scheme that can be applied to all collections – whether or not such a universal system is appropriate will be discussed later.

Use of controlled vocabularies, like LCC and LCSH, is of utmost importance to the stability and reliability of KOSs. By ensuring consistency in the description and organization of materials, controlled vocabularies provide uniform access for users. Generally, controlled vocabularies allow for more complete search results and in turn provide users a more accurate representation of a repository's holdings on a given person or topic.

Controlled vocabularies are preferred to natural language searching. One reason for this is because terms and names, especially the names of people, can vary. To maintain consistency in the terms and names used in library catalogs and other databases, librarians use controlled vocabularies in the form of subject headings, classifications, and thesauri. An authority record is created for authorized names and subjects to document the preferred forms of terms. Authority records enable for uniform access and usually include cross-references to related headings, such as broader and narrower terms.

As an example of the benefits of a controlled vocabulary, Kamehameha, the first person to unite the Hawaiian Islands, is also known as ‘Kamehameha I’, ‘Kamehameha the Great’, and ‘Pai‘ea’ among other names. Users trying to research Kamehameha by performing a free-text search for “Kamehameha I” may retrieve results but may miss all instances where this very same ali‘i (chief) was referred to as ‘Pai‘ea’ or ‘Kamehameha the Great’. In this case, selecting a name authority heading, like ‘Kamehameha I, the Great, King of the Hawaiian Islands, -1819’ in the Library of Congress Name Authority File, is advantageous.² Ideally, by including the authorized heading in item descriptions, users should be able to retrieve all documents that have this heading assigned in its record as well as all documents that have any variant names for Kamehameha that were used by the author or by the cataloger, including ‘Pai‘ea’ and ‘Kamehameha the Great’. This example illustrates the power and benefits of controlled vocabularies and cross-references for search precision, for collocating sources, and for accounting for relationships between terms, including synonyms and homonyms (Hodge, 2000, p. 56-57).

Lastly, it is important to recognize the role of controlled vocabularies, and KOSs generally, in the sharing of information and interoperability across collections. Information professionals work collaboratively to set cataloging standards and contribute to shared KOSs for efficiency. To assist catalogers in applying the vocabulary, scope notes are used to explain term selection and provide definitions within the context of the KOS.

Knowledge Organization in Digital Repositories

As this previous section shows, it is essential for libraries to ensure that they include controlled vocabularies and cross-references to allow precise searching. The library classification and subject heading approaches mentioned above were designed to help users locate a specific book in physical collections. Librarians, archivists, and other information specialists continue to try to find ways of using technology and professional practice in order to maximize retrievability within digital collections.

² The Library of Congress Authorities are available online free of charge. As listed on the “About” page of its website (<http://authorities.loc.gov/>), the Library of Congress Authorities includes approximately 9.3 million name authority records and about .42 million subject and genre/form authority records (as of June 25, 2015).

Digital technologies provide more opportunities to describe and represent items. Metadata is “structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource” (National Information Standards Organization, 2004). Metadata is commonly described as “data about data” and can be viewed as the tool through which KOSs are implemented in digital repositories. Metadata is essentially important because it facilitates information management, discovery and retrieval and “plays a crucial role in documenting and maintaining important relationships, as well as in indicating the authenticity, structural and procedural integrity, and degree of completeness of information objects” (Gilliland, 2008, p. 15). Though not always required for metadata, controlled vocabularies remain vital to knowledge organization within digital environments.

Per the National Information Standards Organization (NISO) (2004), there are three basic types of metadata:

Descriptive metadata describes a resource for purposes such as discovery and identification. It can include elements such as title, abstract, author, and keywords.

Structural metadata indicates how compound objects are put together, for example, how pages are ordered to form chapters.

Administrative metadata provides information to help manage a resource, such as when and how it was created, file type and other technical information, and who can access it. There are several subsets of administrative data; two that sometimes are listed as separate metadata types are: Rights management metadata, which deals with intellectual property rights, and Preservation metadata, which contains information needed to archive and preserve a resource.

It is important to note the value of administrative metadata in providing a provenance or genealogy of sorts about the nature of an item (i.e. file type), how it came into existence (e.g. creation date, creator), and who has the right to access the information contained. Culturally, this information is especially significant for determining the need for differing levels of access depending on the degree of kapu (sacredness; special privilege) reserved for an item. Additional research is needed on the topic of cultural sensibilities and access to information within Hawaiian communities and within the international community.

In this study, I focus mainly on the implications of descriptive metadata on representations of and access to indigenous knowledge with a focus on ‘ike Hawai‘i (Hawaiian knowledge). The intellectual organization of items in (digital) repositories is crucial to the

accessibility and usability of collections and must be made a prominent part of any discussion to pursue a digital project. Digital technologies allow for more information to be shared and for more ways to link information so that we are no longer limited to the number of words that fit on a note card in a library's card catalog (Cameron & Robinson, 2007, p. 168). As such, technology invites us to explore social, political, ethical, and epistemological considerations and to incorporate and present a multiplicity of interpretations and worldviews (Augusto, 2008).

Problematizing Current Systems

The Dewey Decimal Classification (DDC), currently used to organize the collections of the Hawai'i State Public Library System, is the most commonly used classification system in the world (Doyle, 2006, p. 438). The Library of Congress Classification (LCC) and the Library of Congress Subject Headings (LCSH) are also widely used in the English-speaking world. Many academic libraries, including all 10 libraries in the University of Hawai'i System, employ LCC and LCSH in the organization and description of their library collections. Access is largely dependent on users' abilities to map their information needs with these KOSs. This can be problematic as KOSs are culturally-specific. Both the DDC and the LCC were created based upon American and European histories and perspectives and thus maintain their biases. In fact, the LCC and LCSH are intended for the 'majority users' of the Library of Congress and therefore designed for white, Christian, heterosexual males (Olson, 2002).

Nevertheless, it is probably impossible to create or apply a KOS objectively. KOSs impose a knowledge order essentially requiring decisions about value and what to include or exclude. At a basic level, the very practice of naming that is fundamental to KOSs like classification and categorization is intrinsically biased (Olson, 2002). Moreover, Olson (1998) asserts that classifications cannot be all inclusive as limits are inescapable in notationally controlled vocabularies (Olson, 1998, p. 235). Still, while these often unspoken biases and limitations may be inherent to classification and to knowledge organization as a whole, they do not have an impartial effect.

Doyle (2006) asserts cultural bias in subject access has been documented since the 1930's. Of those who have brought awareness to the issue of bias in KOSs, perhaps the most well known is Sanford Berman (former Head Cataloger at the Hennepin County Library in

Minnesota). Berman has been recognized as a leading advocate for correcting biased and outdated headings in the LCSH. Berman (1971) and other critics of Western KOSs have raised issues including censorship, marginalization, historicization, omission, lack of specificity, lack of relevance and lack of recognition of sovereign states (Doyle, 2006; Olson, 2002).

While pointing out these problems, Berman (1971) called attention to the need to update KOSs – specifically, the LCSH. On the tendency for subject headings to be outdated, David Haykin, chief of the Library of Congress' Subject Cataloging Division at the time, explained “they have remained unchanged because the need for change did not appear urgent or because the cost, in light of more urgent needs, made change inexpedient” (1951, p. 5-6). The argument hasn't changed much from Haykin's time at the Library of Congress; still, the issues Berman and others raise remain in present-day.

KOSs may not always include pejorative descriptions or be otherwise harmful but KOSs are not neutral (Byrne, 2005, p. 205). The KOS implemented directly affects the level of access afforded to users. This can be particularly disenfranchising for indigenous peoples and marginal groups. Lorraine Johnston (2006) explains:

For those, the Other, whose knowledge processes follow different paradigms, the traditionally structured Western library becomes almost completely inaccessible. The division of knowledge into disciplines in Western science is at complete odds with the Indigenous view of knowledge as holistic and inter-related, and it is this disciplinary division which forms the basis of library classification systems. (p. 2)

To illustrate, let us revisit the dominant KOSs introduced above. Consistent with Western KOSs, both the DCC and LCC are hierarchical and linear in structure. These features may make these systems problematic for the representation of indigenous knowledge, which is often non-linear and essentially based upon relationships (principally genealogical in nature) (Olson, 2002). As a result, the materials and the knowledge being organized and described are necessarily stripped of their original cultural context and arranged according to their relatedness to other knowledge (Byrne, 2006, p. 202). Byrne (2006) explains:

Among other examples, these processes of objectification and description demonstrate the contradictions which arise when the practice and traditions of library, archive and information professionals seek to engage with other knowledge systems and especially Indigenous knowledge and Indigenous peoples. However well intentioned the engagement may be, the process unavoidably juxtaposes different knowledge systems. (p. 202)

Thus, Western KOSs are inadequate for indigenous knowledges and communities because Western KOSs originate from (and perpetuate) Western worldviews as opposed to the worldviews of indigenous peoples. Adding to this, Western KOSs can also be harmful to indigenous peoples when the KOSs represent the worldview of the very cultures that colonized them (an example of this being the LCSH “Hawaii--History--Revolution of 1893” which will be discussed later).

Dangers of Universalism

Monica A. Greaves (2000) explains the mission of knowledge organization in a sense and recognizes the importance of individual experience and more importantly, language:

Classification and subject cataloging are concerned with relating library materials according to subject. Human knowledge is ever growing, ever changing, and unique in its extent and meaning to each individual, since each human interprets differently. Knowledge may be construed in many languages and in many ways in the same language. This is what we are trying to store, to organize, and to disseminate. (p. 22)

This explanation by Greaves highlights the purpose and, at the same time, the gravity and ongoing challenge of knowledge organization.

It may be easiest to adopt a system that has already been created and is widely used. In part for this very reason, libraries have formed networks and consortia to facilitate the copying of library catalog records (Olson, 2002). For example, the OCLC (Online Computer Library Center), an organization dedicated to furthering access, represents a global library cooperative that allows for sharing of data and catalog records amongst member libraries in an effort to increase access and decrease costs to individual libraries. These cooperative efforts support efficiency and consistency and can be especially useful for libraries with a small (cataloging) staff. It’s not surprising then that the KOSs that gain the most popularity, that is the Western systems, would become the international standard as they continue to be employed not only in physical collections but also in digital collections worldwide. Yet, while having a standard, stable system is crucial to the success of KOSs, there cannot be a “one-size-fits-all” system that fits all collections and communities. An international standardized KOS would undoubtedly allow for unparalleled information sharing however it would be at the cost of the diversity of human experience and understandings, including that of indigenous peoples (Doyle, 2006).

Accordingly, the international standardization of any Western KOS is likely to result in a monocultural tool that cannot adequately represent or serve indigenous knowledges and peoples.

The notion that Western KOSs are at the same time inadequate for and a danger to indigenous peoples is not a new notion. The limitations of the dominant KOSs currently in use along with changes in users' information needs makes it necessary to seek out new approaches to library services – even more so in special collections. There is a growing sense of urgency among librarians and researchers as the number of publications (in various languages) increases and become popular worldwide in part thanks to the increased exposure and access afforded by the Internet. At the local level, here in Hawai'i, the increase of research of our Hawaiian culture and history, coupled with the trend within the community of scholars to promote the use of Hawaiian language primary source materials are also contributors to the sense of urgency for innovative approaches to library services. As will be discussed in the next section, indigenous KOSs present one such approach for improving access.

Chapter 2: Indigenous Knowledge Organization Systems

Throughout the world, indigenous peoples have initiated projects to establish their own KOSs. Some have decided to create an entirely new system of classification whereas others have chosen to begin with sets of controlled vocabularies, like subject headings lists. In this section, I provide an overview of two indigenous KOSs that have approached knowledge organization at different levels. The first, the Ngā Ūpoko Tukutuku Māori Subject Headings, is an example of an indigenous subject headings list. The second, the Brian Deer Classification Scheme, is an example of an indigenous classification scheme. Both systems inform the development process as well as the type of Hawaiian KOSs we could potentially pursue in Hawai'i.

Ngā Ūpoko Tukutuku Māori Subject Headings

The Ngā Ūpoko Tukutuku Māori Subject Headings (MSH) was created in Aotearoa (New Zealand) in response to surveys of the information needs of Māori in the 1980's and 1990's. Research projects like *Te Ara Tika Māori and Libraries: A Research Report* (MacDonald, 1993) and *Te Ara Tika: Guiding Voices: Māori Opinion on Libraries and Information Needs* (Szekely, 1997) brought greater awareness to barriers to access for Māori and the inadequacies of Western KOSs when looking for Māori information. These studies along with the principles of Te Tiriti o Waitangi (the Treaty of Waitangi) led to the formation of the Māori Subject Headings Working Party (MSHWP) in 1998 (Māori Subject Headings Working Party, 2000).

The Ngā Ūpoko Tukutuku Māori Subject Headings Project is a collaborative project of the Library and Information Association of New Zealand Aotearoa (LIANZA), Te Rōpū Whakahau³ and the National Library of New Zealand (Simpson, 2005). The initial aim of the MSHWP was to develop local standards of bibliographic description in reo Māori (Māori language) (Simpson, 2005, p. 8). In looking to further guide development of a thesaurus in te reo Māori that would be more relevant for Māori and lead to improvements in access to information for and about Māori, the MSHWP eventually implemented initiatives to create a names authority file for iwi (tribes) and hapū (clans or descent groups) and to create a subject headings list (Simpson, 2005, p. 8-9). A third initiative was also implemented to develop guidelines for

³ Te Rōpū Whakahau is the professional association for Māori who work in libraries, archives and information services. See <http://www.trw.org.nz/about-us/>

catalogers when handling material on ‘Māori subjects’ and when applying the headings to this material (Simpson, 2005, p. 8-9).

The Iwi Hapū name authority file was launched in 2004 as a web-based names authority list for libraries and archives. The names list ensures consistency through the use of controlled vocabulary that accounts for variant names and spellings (Hodge, 2000, p. 5). In this case, the authority list pertains to names of waka (canoes), iwi (tribes) and hapū (clans or descent groups) and has been reviewed by Te Taura Whiri (the Māori Language Commission).

The subject headings list created by the MSHWP, Ngā Ūpoko Tukutuku Māori Subject Headings (MSH), currently includes over 1,400 headings. Topics covered by the MSH include:

spirituality (Ao wairua) and religion (Whakapono), gods (Atua), general aspects of health (Hauora), the arts (Mahi toi), education and learning (Mātauranga), economics and business (Ohaoha), warfare (Pakanga), broadcasting and media (Pāpāho), general aspects of science (Pūtaiao), language including mythology (Reo Māori), the environment (Taiao), people and customs (Tāngata and Tikanga), values (Tikanga tuku iho), politics (Tōrangapū), law (Ture), whakapapa (genealogy) and a list of different types of waka (boats, canoes).⁴

The depth at which a given topic is covered is dependent on the extent of published materials for or about Māori on that topic; this is consistent with the library and information science concept of “literary warrant.”

The MSH is in te reo Māori. In reviewing the reports and presentations of the creators of this system, it is clear and quite understandable that they were intentional in their preference for Māori terms and names throughout the system. Use of English is limited to the scope notes and references. Scope notes generally provide definitions and explanations for the use of each term. In effect, the inclusion of both te reo Māori and English scope notes extends the usability of the subject headings and ultimately makes the system more accessible to non-Māori speaking users and information professionals.

The structure of the MSH is based on Māori cultural values. A Māori methodology and framework are used. At a basic level, the Māori theoretical framework encompasses the following:

⁴ These topics were listed in “Ngā Ūpoko Tukutuku / Māori Subject Headings (MSH) Handout,” a handout given to participants of a Mātauranga Māori in New Zealand Libraries Workshop held at Ngā Kete Wānanga marae, Manukau on August 21, 2012.

- Wairua / Te Kora – the spiritual
- Hinengaro / Te Po – the intellectual and emotional
- Tinana / Te Ao Marama – the physical

The whareniui (meeting house) provides a visual order to the structure and is the basis of the Māori methodology used. Headings show broader and narrower relationships, related subjects, and alternative dialect terms. The inclusion of dialect terms in particular shows an understanding of the language and the significance of the genealogies of Māori tribes. It subsequently allows for broader use as opposed to limiting use to a particular group. In order to remain as neutral as possible in regard to regional language variations, subject heading terms are chosen based on the words or phrases that are most commonly used and documented in Māori language resources or created in consultation with language experts.

While the subject headings list could be further developed for use in special collections, the current version is more appropriate for public library collections (Te Rōpū Whakahau, Library and Information Association of New Zealand Aotearoa, & National Library of New Zealand, 2015). Both the National Library catalog and the National Bibliographic Database include the terms as authority records, thereby making the system practical for users of the OPAC (Online Public Access Catalog). Furthermore, the MARC Standards Office of the Library of Congress has authorized a source code ‘reo’ for MSH terms (Te Rōpū Whakahau et al., 2015). As such, the thesaurus could potentially be used for Māori collections beyond Aotearoa that rely upon Library of Congress systems of knowledge organization.

Still, libraries and other repositories are encouraged to create their own policies for deciding when to add MSH to bibliographic records. As illustrated by the policies of the National Library of New Zealand, the MSH are not used as a replacement but rather as a supplement to Western KOSs. The National Library uses a hybrid system for subject access to all materials written in te reo Māori or about Māori by incorporating both the MSH and the LCSH in their bibliographic records. Thus, in practice, the Māori system represents a hybrid approach to indigenous knowledge organization.

Brian Deer Classification

The Brian Deer Classification (BDC) is a KOS created for First Nations materials. Named after its creator, A. Brian Deer – a Kahnawake librarian in Canada – the classification scheme was designed in the 1970s for use at the National Indian Brotherhood (now the Assembly of First Nations). Deer aimed at creating a scheme that reflected First Nations perspectives and that was to be used for First Nations materials in the collection he worked with at the time.

The structure and design of the BDC allows for more specificity for topics of interest to First Nations people than is provided by Library of Congress. For example, the BDC allows for more detailed descriptions of concepts of self-government. It also includes sub-classes for elders and legends. As a result, topics and sources that are difficult to find in Western systems are more visible and therefore more accessible in repositories using the BDC.

Similar to the LCC, the BDC uses letters to identify and organize topic areas. Broad topics are identified by one letter (i.e. E for Education) and additional letters are appended to identify specific topics within each broad topic (i.e. EE for Teacher Training; ES for Curriculum Development, Textbook Analysis; ET for Curriculum Material) (Xwi7Xwa Library First Nations House of Learning, n.d.).

To support access, the BDC reflects the worldviews of First Nations people to not only improve specificity but also collocation. Like the MSH, relationships in the BDC are based on cultural values and understandings. Traditional names are used instead of Anglicized ones. As a result, materials on culturally similar groups are collocated in the classification schedule and subsequently in the physical collections.

Nevertheless, the scheme is not without its criticisms. One of the main limitations of the BDC is that it does not account for the interdisciplinary nature of indigenous studies and topics (Doyle, 2006, p. 436). This may be the case mainly because it was intended for use by a single organization and not meant for wide use nonetheless for First Nations studies as a whole.

In spite of criticisms of the scope of the system, libraries have chosen to use the scheme for First Nations collections – with adjustments to fit their needs. The Union of British Columbia Indian Chiefs Library and Resource Center in Vancouver, British Columbia uses the BDC. The Xwi7xwa Library at the University of British Columbia also uses a version of the BDC

(Xwi7xwa Library, 2013). The university has provided funding for the further development of the scheme to improve access to the university's resources for First Nations peoples and is developing a new thesaurus, the First Nations House of Learning Thesaurus, authorized by the Library of Congress MARC Standards office (Webster & Doyle, 2008, p. 192; Xwi7xwa Library, 2013).⁵

As a result of these various local adjustments, there are now differences in what each refers to as the BDC. Nevertheless, as demonstrated by its continued use and maintenance by these institutions, the BDC provides a preferable KOS and a foundation for other indigenous KOSs for First Nations in Canada. It is somewhat surprising that the BDC has not been more widely adopted (Maina, 2013). But, as First Nations and other information professionals continue to revise the scheme for broad application by their communities and by other indigenous peoples, use of the BDC will likely increase.

Summary

As is evident by these examples, indigenous KOSs may have different purposes and objectives and therefore differ in degree of independence and relation to Western KOSs. Some, like the Ngā Ūpoko Tukutuku Māori Subject Headings, are hybrid systems that work to supplement the systems already in place while others, like the Brian Deer Classification, are entirely separate systems and could be used to replace Western systems. All projects regardless of their level of independence from Western systems provide a resource for information professionals who manage indigenous materials, particularly when it comes to the task of describing documents in indigenous languages and documents by and about indigenous peoples in digital environments.

The emphasis here is that indigenous peoples have already created and applied their own KOSs in repositories. Variations in the processes and designs of indigenous KOSs illustrate differences among indigenous peoples and suggest a preference for local approaches. These (and other) indigenous KOSs set substantial precedents for the creation of a Hawaiian KOS.

⁵ Xwi7xwa Library is also developing an authority list of the preferred names and spellings for First Nations. An online copy of "BC First Nations Subject Headings," a First Nations name authority list, provides the Xwi7Xwa headings along with Library of Congress and "other" headings (Xwi7xwa Library, 2009).

Furthermore, the extensive documentation and reports on the MSH provide a valuable resource for the creation of a Hawaiian KOS as these documents present the mission, policies and procedures, findings and recommendations of those involved with the development of the MSH. The creators of a Hawaiian KOS would likely benefit from also documenting their own creation process and findings.

Chapter 3: Efforts to incorporate Hawaiian Knowledge in Knowledge Organization Systems

In Hawai‘i, there have been a few efforts to incorporate Hawaiian perspectives and understandings in KOSs. Efforts thus far have focused mainly on infusing Hawaiian into the dominant Western KOSs as opposed to creating a supplemental thesaurus or a completely separate KOS. Institutions and information professionals have opted to maintain dominant systems like Library of Congress Subject Headings (LCSH) and to enhance access as appropriate by either revising terms or adding terms to these systems. There are inherent limits with this type of work because no matter how many terms are added to or changed in a Western KOS, the system itself remains a Western system based on Western ontologies. In this way, efforts in Hawai‘i have been limited.

This is not to say that there haven’t been substantial changes to how Hawaiian materials are cataloged and accessed. In this section, I provide an overview of three noteworthy efforts put forth principally by academic librarians.

The Hawaii/Pacific Subject Authority Funnel Project at the University of Hawai‘i Libraries

Through the Program for Cooperative Cataloging (PCC), the University of Hawai‘i Libraries have worked with the Library of Congress to improve LCSH. The PCC is “an international cooperative effort aimed at expanding access to library collections by providing useful, timely, and cost-effective cataloging that meets mutually-accepted standards of libraries around the world” (Library of Congress, n.d.-c). The Hawaii/Pacific Subject Authority Funnel Project was begun in the winter of 2002 to create new subject headings and to change or update old subject headings that are used for Hawaiian and Pacific collections (Library of Congress, n.d.-a). The Hawaii/Pacific Funnel is one of twelve funnels in the PCC’s SACO (Subject Authority Cooperative) Program. A SACO funnel is a group of libraries that work collaboratively to contribute subject authority records to the LCSH; funnels focus on either a subject area, such as the SACO Music Funnel or the SACO Slavic Funnel, or a region, such as the SACO Hawaii/Pacific Funnel or the Colorado/Mountain Funnel (Library of Congress, n.d.-

d). The University of Hawai‘i at Mānoa is the project’s host institution but all UH System campus libraries are participants in this regional subject funnel along with the Bernice Pauahi Bishop Museum and the University of Guam (Library of Congress, n.d.-a). The overarching objective of the project is to develop LCSH to allow for greater subject access to library collections.

The Hawaii/Pacific Subject Authority Funnel Project has made a number of successful proposals to the Library of Congress to change inadequate headings and incorrect spellings and to also add new terms. These proposals have resulted in both changes and additions to the LCSH – select examples are listed below:

Subject Headings Changed:

From: Kaho(ayn)alowe Island Reserve (Hawaii)
To: Kaho(ayn)olawe Island Reserve (Hawaii)
Accepted in 2009. The change was to correct a spelling error.

From: Moku(apostrophe)ula (Lahaina, Hawaii)
To: Moku(ayn)ula (Lahaina, Hawaii)
Accepted in 2008. The change was to replace an apostrophe with the correct diacritical marking, an ‘okina (noted as the symbol ‘ayn’).

New Subject Headings:

Iiwi – Topical term accepted in 2012.

Menehune – Topical term accepted in 2010.

Ke(ayn)ehi Lagoon (Hawaii) – Geographic name accepted in 2012.

Ko(ayn)olauloa (Hawaii) – Geographic name accepted in 2008.

Wa(ayn)ahila Ridge (Hawaii) – Geographic name accepted in 2004.

Hawaii--Annexation to the United States – Geographic name accepted in 1998; with cross-reference to: Hawaii--History--1893-1900.

As demonstrated by these examples, ‘ōlelo Hawai‘i terms are being added for topical terms and geographic names in LCSH.⁶ Changes are also being made to correct misspelled ‘ōlelo Hawai‘i

⁶ ‘Ōlelo Hawai‘i terms can be used in LCSH as prescribed in the Subject Headings Manual H1332 which states, “Prefer the common name if it is in popular use and unambiguous... Prefer the common name for animals and plants of economic importance, such as pests or cultivated plants” (Library of Congress, 2015, p.1).

names as well as to add diacritical markings where previously omitted or where apostrophes were used. That the effort to improve LCSH has included proposals to use ‘ōlelo Hawai‘i terminology should not be overlooked. It is both an indication of the possibilities within LCSH and also a testament to the significance of language and the value of ‘ōlelo Hawai‘i within a KOS.

One of the librarians who has been a key individual in the UHM Library’s proposals to the Library of Congress even before the Funnel Project is Ruth Horie. In her position as Catalog Librarian, Horie was responsible for cataloging Hawaiian and other Pacific materials for the UHM Library. Of the changes she made to the LCSH, perhaps the most critical change Horie helped make was to the subject heading used for works about the overthrow of Lili‘uokalani in 1893.⁷ Prior to the change in 1994, the subject heading used referred to the overthrow as a “revolution.” This term choice reflects the American bias in the LCSH and the issue of currency and lack thereof in the LCSH in regard to the history of Hawai‘i and current scholarship. More significantly, the term selection exemplifies an imperialist perspective.

Thanks to Horie’s research and proposal, the subject heading was changed in 1994 to more accurately reflect our nation’s history:

From: Hawaii--History--Revolution of 1893
To: Hawaii--History--Overthrow of the Monarchy, 1893

This is an obvious example of how work like this improves the LCSH. The corrected subject heading has been applied to works like *Act of War: the overthrow of the Hawaiian nation* (Puhipau & Lander, 1993) and *Aloha Betrayed: native Hawaiian resistance to American colonialism* (Silva, 2004). That the older subject heading containing the term “revolution” would have been applied to these works underlines the inadequacies of the LCSH. The former, a documentary film that discusses the overthrow from a Hawaiian perspective, continues to be

⁷ For more information about the overthrow, see “Joint Resolution to Acknowledge the 100th Anniversary of the January 17, 1893 overthrow of the Kingdom of Hawaii,” Pub. L. 103-150, 107 Stat. 1510 (1993). Commonly referred to as the “Apology Resolution,” the resolution “apologizes to Native Hawaiians on behalf of the people of the United States for the overthrow of the Kingdom of Hawaii on January 17, 1893 with the participation of agents and citizens of the United States” and acknowledges that “the indigenous Hawaiian people never directly relinquished their claims to their inherent sovereignty as a people or over their national lands to the United States, either through their monarchy or through a plebiscite or referendum.”

regularly used in Hawaiian Studies curriculum at the University of Hawai‘i. The latter, which contests the idea that Hawaiians passively accepted the effects of American imperialism, is used in political science and other university courses. Accordingly, it is inaccurate and possibly also offensive to describe either of these works with a heading portraying the events of 1893 as a “revolution.”

These are just a few examples of the improvements to the LCSH made possible by academic librarians. It is important to acknowledge this ongoing work of the Hawaii/Pacific Subject Authority Funnel Project participants in the development and maintenance of the LCSH and in keeping the bias of the Library of Congress KOSs in check. However, there is still a lot more to do to improve access within LCSH.

In looking at the position announcement, the Hawaiian Materials Cataloging/Metadata position (formerly Horie’s ‘Catalog Librarian’ position) at the University of Hawai‘i Hamilton Library will be responsible for contributing authority records through the SACO Program.⁸ So, the individual who fills this position will continue the work of the Funnel Project and will, hopefully, support the further integration of ‘ōlelo Hawai‘i in KOSs not limited to the LCSH.

KVJ Law Classification

There is an effort underway at the University of Hawai‘i William S. Richardson School of Law Library to improve the law classification schedule for Hawai‘i. The main focus of this project is to more appropriately classify items relating to the Kingdom of Hawai‘i.

The KVJ law classification project is being spearheaded by the Library of Congress in consultation with an invited group of law librarians and other librarians in Hawai‘i. Jolande Goldberg, a Library of Congress Law Specialist, and Keiko Okuhara, a UH Law Librarian, are the principal leads for this project. Goldberg had previously worked on the development of the classification KIA-KIK, Law of Indigenous Peoples in North America, and so brings that experience and expertise into this Hawai‘i law re-classification project.

After a series of meetings and discussions, a decision was made to create a new

⁸ As stated in the position announcement posted April 17, 2015, the Hawaiian Materials Cataloging/Metadata position will “serve as the lead cataloger of materials for the Hawaiian Collection.” Duties include: “Contributes name, series, and subject authority records through NACO/SACO cooperative programs.”

classification. As a result, Hawai‘i law up until the year 1900 (when Hawai‘i became a Territory of the United States) will be classified under KVJ1-2998 “Pacific area: Pacific area jurisdictions: Hawaii (to 1900).” The scope note explains,

Class here the indigenous law of the pre-Kingdom period (to 1810), the period of the Kingdom of Hawai‘i (1810-1893), including overthrow of the monarchy and Provisional Government (1893-1894), and the Republic of Hawai‘i (1894-1900), including the Transitional Government (1894-1900).

This new classification is more accurate considering Hawai‘i’s political and legal history as an independent nation. Prior to this project, the schedule classified Hawai‘i as a state under the United States (KFH) even for the period of the Kingdom of Hawai‘i and the pre-Kingdom period.

The UH Law Library will utilize the new KVJ classification and is planning to apply it retrospectively. This is a significant decision considering the staffing needs it will require to re-catalog items. Still, re-cataloging according to the revised schedule is crucial to ensuring consistency and good practice. Furthermore, it is vitally important that the Law School lead by example – after all, it would not send the right message if the creators of the new classification did not intend to fully implement it in their library. This brings up a point raised earlier about the urgency for a Hawaiian KOS and helps to emphasize the need for a system to be implemented sooner rather than later to avoid the need to retrospectively apply a KOS.

A Hawaiian Cataloging Pilot Project at Chaminade University

In an effort to address the problems posed by implementation of Western-oriented KOSs, Puanani Akaka and Eric Leong piloted a project to reclassify the Hawaiian-Pacific collection at Chaminade University’s Sullivan Family Library. Both librarians were dissatisfied with how the systems, namely the Library of Congress Classification System and the Library of Congress Subject Headings, separated same-subject documents throughout their library’s collection (Akaka & Leong, 2009). The objective of their project was to reclassify a sample of books from a Hawaiian worldview within the Library of Congress system in order to improve the organization of the collection.

Akaka and Leong presented their findings at the 2009 Hawai‘i Library Association Conference. Their presentation noted that there was “no Hawaiian or Pacific-relevant system” to

implement or draw from at the time (Akaka & Leong, 2009). Perhaps to begin to address this need, Akaka and Leong chose to focus more on their overall process and also shared resources on criticisms of the dominant KOSs as well as examples of already established or proposed indigenous KOSs.

In addition to successfully collocating items, they recognized two opportunities for the future of cataloging. The first is that there was an opportunity to establish local subject headings and to create a “Hawaiian-Pacific collection Subject cataloging guide for future catalogers (esp. for related concepts)” (Akaka & Leong, 2009). The second is that there is ample opportunity for “added access points for future cultural relevance.” Both of these findings are still relevant today and are significant to my own study as I hope to continue this conversation by not only highlighting the opportunity to create a Hawaiian KOS but by also emphasizing the value and growing need for one as well.

Moving Beyond Western Systems

There are inherent limits with this type of work because no matter how many terms are added to or changed in a Western KOS, the system itself remains a Western system. Western worldviews form the foundation and inform the structure of Western KOSs so even as efforts such as those highlighted in this section work to improve these KOSs, the KOS remains Western and will continue to perpetuate Western worldviews. In this way, efforts in Hawai‘i have been limited.

This is not to say that there haven’t been substantial changes to how Hawaiian knowledge is classified, categorized and described. However, Western KOSs remain inadequate for Hawaiian knowledge. We must therefore make inquiries as to other paths and tools that might improve access. One of these paths could very well be the creation and implementation of a Hawaiian KOS, which is the focus of this study. My methodology in considering a Hawaiian KOS for the purposes of organizing and describing Hawaiian knowledge and for providing access to Hawaiian communities is explained in the next section.

Chapter 4: Methodology

The initial question that drove me to write this thesis was: To what level Western systems of knowledge organization are adequate for describing and organizing Hawaiian knowledge in its various forms? Having done various research for my family and for my undergraduate studies, and having reviewed literature about the experiences of other indigenous peoples with information services, I questioned whether there was a better approach to bibliographic access and access to information generally.

Eventually, I began to ponder the possibility of creating our own system of knowledge organization for libraries and repositories. So, I considered potential benefits and challenges posed by the creation and implementation of a Hawaiian KOS. The main question I became interested in was: What would a Native Hawaiian KOS look like? In furthering this inquiry, I also explored potential starting places for the establishment of such a system – what might it be based upon? How might it be organized? Who should participate in its development?

To gather answers to these questions, I conducted semi-structured interviews with a sample of Hawaiian scholars and a sample of information professionals actively working to preserve and share Hawaiian knowledge and its manifestations (i.e. physical formats). The principal goals of these interviews were 1) to discover the experiences of Hawaiian scholars in accessing Hawaiian resources in libraries and archives both physically and digitally (with an emphasis on the latter) and 2) to learn about the institutional practices of information professionals in Hawai‘i with regard to KOSs. The ways in which the current dominant KOSs are used to represent and organize Hawaiian knowledge was discussed with both groups. Of primary consideration was whether cultural relationships and understandings, which are embedded in the land, in genealogies and in ‘ōlelo Hawai‘i, are represented in the KOSs implemented in Hawai‘i repositories. But, rather than focus solely on the systems currently in place, I thought it more advantageous to devote the major part of each interview focusing on opportunities for a Hawaiian KOS and exploring design aspects of an ideal system for Hawaiian collections and communities.

The semi-structured format was ideal for this inquiry because the interview was based upon a pre-determined set of questions but allowed for flexibility depending on the interests of the participant. This interview format was therefore helpful in discovering what aspects of

knowledge organization are deemed significant from the user perspective, in this case from the point of view of Hawaiian scholars, and from the information professional perspective with regard to ensuring access to Hawaiian knowledge.

Interviews

My initial plan was to interview four Hawaiian scholars and four information professionals from different repositories in Hawai‘i. I ended up being able to interview four Hawaiian scholars and six information professionals. Note that due to geographic and budget limitations, the samples chosen for this study were selected from institutions located on the island of O‘ahu. In all, I conducted eight interviews – one of which was a group interview held with three information professionals all representing the same repository. All interviews were conducted in person at various locations in Honolulu between February and May 2014. As intended, the average length of the interviews was 60-90 minutes; two of the four interviews with information professionals were two to three hours long.

For the sample of Hawaiian scholars, I selected four faculty members from the Hawai‘inuiākea School of Hawaiian Knowledge at the University of Hawai‘i at Mānoa – two from the Kawaihuelani Center for Hawaiian Language and two from the Kamakakūokalani Center for Hawaiian Studies. All four earned master’s degrees and three of the four earned a doctorate degree from the University of Hawai‘i at Mānoa. To protect the privacy and confidentiality of participants, I will not share any other specific information about their personal or academic backgrounds.

Discussions with faculty members focused on their research practices and experiences with Hawai‘i-based institutions and online resources. Participants reflected on their experiences while conducting academic research and family research on genealogy and land. Gradually, discussions transitioned into barriers to access each continue to face at Hawai‘i repositories in the physical collections and in the digital collections. After prompting participants to reflect on and share their experiences, I then asked them to share any ideas they might have about a proposed Hawaiian KOS – would it benefit our community? What might it be based upon? How might it be organized? Who might participate in its development? And, what challenges might it face?

For the sample of information professionals, I first selected four Hawai'i-based collections then identified the information professionals responsible for cataloging and metadata at each. I was mainly interested in institutions with a primary focus on preserving Hawaiian materials and/or who manages a significant collection of Hawaiian materials. I also wanted to select institutions that have a publicly searchable database or an online catalog of some sort. After identifying the four institutions, I contacted the primary staff member either responsible for metadata-related decisions or tasked with creating and editing metadata on a regular basis at each institution. It is these individuals who have a close familiarity with the metadata practices of their institution and are able to provide constructive insight specific to the topic of study. In the case where this individual was not readily identifiable, I contacted the repository and asked them to refer me to the appropriate staff member.

Discussions with information professionals were twofold – 1) to determine the descriptive metadata practices of their institutions including qualitative information about the background (e.g. education and training) and attitudes of information professionals working to preserve and share Hawaiian knowledge and its manifestations and 2) to learn about their ideas regarding a Hawaiian KOS based on their professional and personal experiences. The principal point of discussion revolved around whether or not they view the development of a Hawaiian KOS as beneficial for users and for the profession itself. These interviews were meant to provide information professionals a chance to reflect and share their experiences with providing access to Hawaiian knowledge as well as their perspectives on possible futures for descriptive metadata practices relating to Hawaiian knowledge.

In order to protect the privacy and confidentiality of participants, I will not share specific information about the personal or academic backgrounds of the information professionals in this sample. However, it is important to note that while all of the individuals in the information professionals sample are employed by a Hawai'i repository and have earned at least a bachelor's degree, only two hold a Master's in Library and Information Science (MLISc) degree. This may have had an effect on the results of this study as library standards are heavily emphasized as part of professional MLISc education. Nevertheless, there wasn't a huge difference in the attitudes and perspectives of the information professional participants so it is difficult to say with certainty how much of an impact having a MLISc degree had on the results.

Interview Questions

All interviews included nine open-ended questions that are listed in Appendix B. Interviews with information professionals included an additional 7 questions, which are also listed in Appendix B. Questions were provided to participants prior to the interview to allow time for them to reflect on their experiences.

Interview questions were developed after informal conversations with information professionals currently responsible for cataloging and managing collections of Hawaiian materials. These conversations took place over the duration of my graduate studies leading up to my decision to write this thesis.

To support and supplement these questions and the discussions they initiate, related surveys on metadata and current practice were researched. Questions were adapted from Deborah Lee's survey which she writes about in her article, "Indigenous Knowledge Organization: A Study of Concepts, Terminology, Structure and (Mostly) Indigenous Voices" (2009). In her abstract, Lee explains, "the lack of published information (especially in Canada) on modified classification systems and thesauri for describing and organizing Aboriginal materials sparked the idea to conduct a survey study." In part, Lee sought to collect and evaluate individual's viewpoints on the "inaccuracy or inappropriateness of Library of Congress Subject Headings to describe Aboriginal-related materials in a Canadian context" (Lee, 2011, p. 2). While her questions were more specific, particularly those related to use of the Medicine Wheel for classifying indigenous knowledge (with a particular interest in First Nations), Lee's survey provided a clear example of what I hoped to achieve with my research

Questions for information professionals regarding staffing were adopted from Mun-Kew Leong, Keat-Fong Tan and Wee-Seng Tao's survey which they discussed in a 2009 IFLA General Conference. While their study was mainly interested in current structures and practices in dealing with digital vs. "traditional" (print) content, their survey included questions on the structure of organizations and cataloging policies and practices which informed the interview questions utilized in this study.

Institutional Review Board Approval

The study was approved by the Institutional Review Board – the Human Studies Program at the University of Hawai‘i at Mānoa – as mandated for research involving human subjects. Participation in this study was entirely voluntary. To obtain informed consent, all participants were required to sign a consent form which outlines the study’s objectives and informs participants of their right to terminate participation at any time.

To ensure the safety and privacy of participants, confidentiality will be respected. Survey responses will remain confidential and no identifiers for individual responses will be used in reporting. The majority of interviews were audio-recorded to maintain a degree of accuracy in reporting responses; some participants preferred not to be recorded because of their spiritual beliefs in which case I was left to rely on my notes and my memory when reviewing and analyzing their responses.

Chapter 5: Results

There was a consensus among interview participants that current, Western systems of knowledge organization are not entirely adequate for organizing and describing Hawaiian collections. All participants were interested in a Hawaiian KOS for use in libraries and other repositories. Not surprisingly, participants had varying ideas about what such a system would look like and who might lead and contribute to the establishment of the system. In this section, I present and summarize the experiences and perspectives of participants and some of the ideas and concepts proposed. All bullets represent the comments of participants – those labeled “FP” are from a faculty participant, those labeled “IPP” are from an information professional participant. Direct quotes have been included where noted.

Barriers to Access

Participants described barriers to access on a number of levels – physical, digital, and intellectual. I briefly summarize these barriers below and include direct quotes where noted. While a Hawaiian KOS would primarily address intellectual access, solutions to other barriers to access may very well be found in the process.

Physical Barriers

Barriers to physical access included closed collections, repositories’ hours of operation, and difficulties with transportation in getting to repositories – mostly related to parking fees, time limits (e.g. 2 hour maximum parking) or an overall lack of adequate parking. Another major barrier to physical access discussed was geographic limitations. As most repositories, including the Hawai‘i State Archives and Bureau of Conveyances, are on O‘ahu, it is difficult and costly for neighbor island residents to access the documents in these repositories. Two faculty participants also discussed the difficulty even for O‘ahu residents to access repositories because they are located in or near downtown Honolulu.

Library and archives staff were also described as a barrier to access. All faculty participants alluded to what one referred to as “a general lack of cultural understanding in library services.” Each described various instances where they felt “unwelcomed” in a library or archive. In addition, faculty participants discussed the challenges they face when trying to

explain Hawaiian topics with library staff, especially when the topic is in ‘ōlelo Hawai‘i. There was general awareness that most library staff do not have ‘ōlelo Hawai‘i skills much less at the level of proficiency necessary to assist researchers in ‘ōlelo Hawai‘i. Still, there was an expressed preference by faculty participants for information professionals with a formalized education or other experience in ‘ōlelo Hawai‘i and Hawaiian history and culture. Going beyond their own needs, faculty participants talked about the need for and importance of language skills for serving students for whom ‘ōlelo Hawai‘i is their first language and how they would be better served if reference interactions were conducted in ‘ōlelo Hawai‘i.

Now more [Hawaiian] immersion [school] graduates are coming here [to UH] and I mean 5 people from Ni‘ihau just graduated... their stronger suit would be in Hawaiian, so if we can help them in Hawaiian that would be way better... if you can help them in their own language that would probably make them feel better and then make them feel more comfortable, especially when they’re asking [for research help].” – FP

Information professional participants also acknowledged the lack of ‘ōlelo Hawai‘i skills within the local profession and recognized a growing need for information professionals with ‘ōlelo Hawai‘i skills as well as a background in Hawaiian culture and history.

Digital Barriers

Digital access was viewed positively by all participants partially as a way repositories can remedy some of the physical barriers to access mentioned. Faculty and information professional participants alike appreciate being able to search and utilize collections 24/7 from anywhere with Internet access. However, there are a lot of documents still awaiting digitization. Moreover, faculty participants raised criticisms about the format types available for digitized texts – for example, there was mention of a preference for TIFFs because it enables researchers to zoom in and read the text which is particularly useful when viewing digital scans of Hawaiian language newspapers. The poor quality of microfilms was also mentioned in at least 4 interviews (2 with faculty participants, 2 with information professional participants); the reliance on microfilm for producing other digital copies can be problematic and is therefore a concern. Also, both information professional and faculty participants noted OCR software as a major concern, particularly for documents in ‘ōlelo Hawai‘i; searching is sometimes difficult because the software cannot yet recognize the ‘ōlelo Hawai‘i.

Intellectual Barriers

The majority of comments related to intellectual barriers had to do with spelling and use of diacritical markings. All participants commented on either misspellings or variant spellings in KOSs and the challenges these pose for researchers. At least half of all participants also pointed out word and name variations, especially for ali‘i (chief or chiefess) names, and discussed their experiences in trying to determine usage employed by KOSs and by authors themselves.

Faculty participants commented on difficulties learning the library system and navigating library catalogs. As expressed by two of the four faculty participants, there is a need for more instruction on search strategies whether via help resources within a digital environment or information literacy instruction held in-person. One of these participants shared that she never learned the “proper” way to search. Paraphrasing a faculty participant’s comments – often times it seems that researchers are our own challenge when doing research because it is easy to fall into the trap of thinking that since a database or catalog doesn’t work the way we do things (in other words, a database doesn’t return relevant results when we compose searches) it must mean the resource or collection is just “junk.” It’s easy to see how this is probably the case more often than not. Researchers rely on the library catalog or database to provide an accurate representation of collections and can very easily be misled and/or led to believe a collection is not of value to their research, as indicated by this faculty participant.

Admitting the limitations of their repository’s catalogs and databases – almost as if to answer the above concern – information professional participants explained that librarians and archivists can often times provide a more accurate representation of collections, especially in the case of archival collections where materials are usually cataloged at the collection level rather than the item level, like libraries. Thus, they recommend researchers request assistance from librarians and archivists, as repository catalogs are sometimes out-of-date or lacking adequate description.

Conceptual Design

Participants were invited to brainstorm ideas about the organization and description of an ideal system, including philosophies, metaphors or sources it might draw from and topics it would include.

Organization and Description

This section includes participants' ideas about how Hawaiian knowledge materials might be better organized and described to help improve access for the Hawaiian community.

Participants in both groups shared that novice researchers may not know to look in other places so it would be helpful to provide pointers to other resources, subject headings or search terms that might retrieve additional results. This was viewed by participants in both samples as particularly important for those researching Hawaiian knowledge as it allows for connections to be made on any given topic and is more consistent with the holistic nature of a Hawaiian worldview.

- “[Current systems] don’t make sense to us and it makes it challenging to locate [resources] because [the people creating and implementing these systems] are looking at it through a different lens that doesn’t make sense for us... We know that you gotta look at it through a different lens. It’s kinda like one of my kumu (teachers) told me when I was first learning Hawaiian – to think in Hawaiian means to think in a totally different world. It’s a totally different worldview that you have to look at, it’s not the same as English.” – FP
- Knowledge Organization Systems are like genealogies. They provide an outline of the relationships between items and provide a general order. – FP
- “It should be based on ways of knowing. It should include levels and a way of going forward and backward to reveal the genealogy. It should also be able to collapse because that’s how genealogy works. Part of the genealogy should establish how things can “marry” or in other words how and why two things could be related to each other.” – FP
- In Library of Congress Subject Headings, you need literary warrant to be able to add cross-references – you can’t just pull all words or synonyms from a dictionary and add it as ‘see also’ or to the authority record. This may be different in a Hawaiian system because “we prefer as many layers as possible and even support the continuous building of these layers and relationships.” – IPP
- Discussing the ‘search by location’ feature in the Papakilo Database... “One of the good things about breaking it down into search by location – to that cultural aspect [of place] – is once again increasing [the] education of our users. So, I don’t know, maybe in the future we’ll deal with another set of data that allows us to do kind of like that, say la‘au lapa‘au or even how hula is broken down – kahiko versus [hula] ‘auana versus mele.” – IPP

- “One of the things I try to be conscious of is who is the end user and how they will access things. I think that’s something people always forget because it’s really easy to get lost and bogged down in handling the metadata, data mining and standardizing. So, by us trying to keep the end user in mind and how they would essentially do a search, and early I mentioned how my tutu would search right, that’s the kind of level that we need to think, like bottom level – because if my tutu can do it then anybody can do it. With that said, there is different approaches with how information gets presented, if it’s say information pertaining to something a little bit more culturally sensitive – items such as burial information, we go to like burial council or we talk to our legal department to see what we can limit as far as public dissemination and what gets held internally.” – IPP
- It would be advantageous to design databases of Hawaiian materials in a way that provides for a clear search process “with clear start and end points.” – FP
- “It’s wonderful if [a resource] is sitting someplace, but if no one ever sees them what’s the point? And if [researchers] can’t see it, it’s because they can’t find it.” – IPP

All participants were familiar with *Ulukau: The Hawaiian Electronic Library* and referenced or at least mentioned it once during interviews. Participants seemed to especially like the concept of this resource in that it provides a convenient portal for researchers. Comments, good and bad, were made about the usability of the site. Faculty participants even constructed their comments on KOS design based on the design and organization of Ulukau; the ideas they offered for the design of a Hawaiian KOS were based on what they liked about Ulukau and how they thought Ulukau (and similar digital collections) could be improved.

- “Ulukau was a godsend.” – FP
- Ulukau “Wings” – Participant only uses the ‘Books’ and ‘Newspapers’ wings which (as implied by their names) are format-based categories and therefore intuitive as to the content it includes. However, she is deeply puzzled by the selected categories highlighted via the “wings” interface, partially because of crossover among the categories. – FP
- An introductory paragraph should be included for each “wing” in order to provide users with a basic understanding of the content they could expect to find when choosing a particular category to browse. – FP

While Ulukau’s “wings” were somewhat ambiguous, most participants liked the idea of having browse options (which is the function of the “wings”).

Philosophies, Metaphors and Concepts

Participants had a variety of ideas about the philosophies and concepts that might inform the basis of the system. Whether it's based on a metaphor, a mo'olelo (story), a genealogy, or another system or structure, it's important to keep users in mind when designing a KOS. As one information professional participant cautioned, "do not over-intellectualize [the KOS]. It needs to be understandable to users today."

- "The foundation [of the system] needs to be logical – regardless of whether there's a historical precedent for it or not... When you look around in the world, what way does it make sense to do it?" – IPP
- "Emphasize public, it can't just be for librarians, it can't just be for professionals, the public's got to use it and it's got to be understandable by the public. So that's why MARC cataloging was a sort of fun, interesting... I mean it was a good thing but conventions for MARC cataloging are so icky and silly that you ended up with a cataloging record that really wasn't that useful if you were an outsider." – IPP

A faculty participant mentioned one reason it might be beneficial to base the system's design on a commonly understood metaphor is that users will already have some general familiarity with the system of organization. The Kumulipo was discussed in the majority of interviews. Because it is a major genealogy accounting for the birth of all things in nature and thus the relationships between all things, this is a conceivable foundation for a KOS. One information professional participant criticized the idea of basing a Hawaiian KOS on the Kumulipo believing it will be a challenge to find places for 21st century tools and words, like cars and iPods, within this framework. Nevertheless, as posited by a faculty participant, if a technology like newspapers or 'auwai (irrigation canals) can be placed within this framework then it isn't much of a leap to be able to incorporate all modern technologies since things like newspapers and 'auwai were at one time viewed as 'modern' technology. To show readers what a Hawaiian KOS based upon the Kumulipo could look like, I have included an example of a Hawaiian KOS heading in appendix C. It is a basic example of a heading and certainly only a fragment of what would be a much richer descriptive system. Again, the purpose of sharing this example is simply to help readers visualize a Hawaiian KOS.

Other metaphors and concepts shared were:

- Genealogy – After all, genealogies reveal our exploits, concept of time, and ways of organizing and subsequently understanding our world. – FP, IPP
- Fishing net – Throw net and catch results. When throwing net, it usually happens that a couple of fish get away. Similarly, there should be a general understanding that there may be some resources that aren't being retrieved with each query. – FP
- 'ōlelo no'eau (proverb, wise saying) – “That ('ōlelo no'eau) is another example, you know, how do you break it down and catalog it into a cultural, meaningful way? Because not only can you break it down to the actual subject of it, you can break it down to the kaona of it... and place names – so there's subject, place, kaona, even like timeframe [because] you'll see, what would be an interesting thing and you can kind of see it in the newspapers, but over time you start seeing what words become more popular or fall out of favor and so on so forth – even uh sentence structures, so those are all things that I think once, like I said we're at a base level, but like once the total aptitude of the, not even the Hawaiian community, but the research community starts to rise, then we're able to break it down to other places.” – FP

Sources

The following are resources participants brainstormed as potential sources for term selection and for the development of the system generally.

- “Davida Malo's structure of land and lewa [(sky, atmosphere, space)]”⁹ – FP
- Works by Samuel Kamakau, David Malo, John Papa 'Ī'ī, and other Lāhainaluna seminary students as well as other 19th century sources – FP, IPP
- The moon calendar, star constellations – FP, IPP
- Names of winds, currents, people and places – FP, IPP
- “For place names – Mahele records, Thrums... something from 19th century with names of settlements or towns or plantations that aren't strictly Hawaiian but you'll find them Hawaiian-ized... [there is an issue of contemporary versus older names but] this is natural and will likely continue... [there are also] Hawaiian names for other places abroad... sometimes [Hawaiian names will be] transliterations but not always.” – IPP

⁹ The participant makes reference to a manuscript that has since been translated and reprinted: Malo, D. (1951). *Hawaiian antiquities: Mo 'olelo Hawai 'i* (N. B. Emerson, Trans.) (Bernice Pauahi Bishop Museum Special Publication 2). Honolulu, HI: Bishop Museum Press.

- “The usual reference books... place names (multiple books on this); *Notable Women of Hawai‘i*, limu book, bird book, different subject areas, atlas of Hawai‘i with all the ali‘i inside, little book detailing Kamehameha to governors of Hawai‘i... Is there a list of all the books that are on Hawaiian history? ... This would be useful to researchers too.” – FP
- Hawaiian language dictionaries, such as *Māmaka Kaiiao* – FP, IPP

When discussing the use of Hawaiian language dictionaries, participants acknowledged the politics involved in choosing one dictionary over another for term selection. Participants made specific mention of *Māmaka Kaiiao* (Kōmike Hua’ōlelo, 2003); some expressed concern about the inclusion of “new” words in the dictionary where “old” or “traditional” names exist. One faculty participant recommended using terms that Hawaiians from the 18th century would have thought about new words or things. Perhaps this is a discussion better suited for kumu ‘ōlelo Hawai‘i (Hawaiian language teachers) and others in language studies, but it is important to understand that the results of this discussion will certainly influence a Hawaiian KOS (i.e. the selection of controlled vocabulary terms).

Language

Most participants agreed a Hawaiian KOS would need to include English, at least at first. Some felt it would need to be almost entirely in English with the exception of Hawaiian words that ‘broke through’ and are commonly accepted (examples include: lo‘i, kalo, and heiau¹⁰) as evidenced by their conversational use by those who grew up and/or live in Hawai‘i. Some thought it could be more of a bilingual undertaking. Still even as there was general agreement that English would be used at some level, it seemed like all participants described the ideal Hawaiian KOS as being entirely in ‘ōlelo Hawai‘i.

- The system should use a combination of English and Hawaiian – it would include the standardized Hawaiian words that everyone uses (lo‘i and heiau). – IPP
- “[Subject headings] don’t have to be in Hawaiian – they can be other languages but if they’re in common usage to a degree that we think they’re useful, we should have those as subject headings for our own collections.” – IPP

¹⁰ See Glossary on page 67 for English definitions.

- “Once we start getting people more ma‘a [(accustomed, used to)] with ‘ōlelo that’s gonna unlock a lot of secrets [because we can tap into the rich resource that is newspapers] – it’s just waiting for us.” – FP

Regardless of the language(s) chosen, both groups agreed the system should include citations for term usage.

Starting Points

This section summarizes participants’ recommendations for which topics a Hawaiian KOS should begin with – whether because it is a topic that would most benefit by the application of a Hawaiian KOS or something that they thought made most sense to start with.

- It’s important to know the relevant materials in order to know how best to structure the organization of Hawaiian knowledge. – “This [idea] is very similar to the idea of ahupua‘a – an ali‘i must know the resources within a given ahupua‘a before giving out shares and must also know what resources are available in the neighboring ahupua‘a so that exchange and a reciprocation of aloha can take place to meet the needs of all parties.” – FP
- “Start with newspapers because 1) newspapers cover all sorts of topics and 2) Hawaiians already used a particular system to organize the newspapers. [So] by starting with this [format] not only are we challenged to find ways to organize a variety of topics, but we’ll also be able to study and duplicate or at least learn from the organization [system applied to newspapers].” – FP
- Hawaiian history, mo‘olelo, genealogy, language, ‘ōlelo no‘eau, Hawaiian issues (e.g. GMOs) – FP
- “Genealogy. I think genealogy, just the way that genealogy works takes us to the very core of everything right... there’s a whole bunch of things we could talk about but I think the thing that kind of ties everything together is genealogy... you can find genealogies in the newspapers all the time – the newspapers is a huge resource too because that was the first Facebook yeah, that was the world’s first Facebook because it was populated by the community.” – IPP
- “Kahuna. Look at “kahuna” in Pukui dictionary – that gives you categorization right there as in types of kahuna. Then go check kahuna in Pukui HEN notes (some 3000 of 9000 pages) & check for descriptions. Then Pukui’s daughter has Pukui’s notes that didn’t go to Bishop Museum so go check those raw notes. Then read anything you can find on each kahuna category. Word search Hawaiian nupepa, maybe 30% online?” Use Ulukau and Papakilo for title and word searches. – IPP

- “People. A name authority list would be really useful for newspapers, diaries, genealogies, etc.” – IPP
- “We have names for ships, places, people, buildings, stores, streets, churches (e.g. “the stone church” – Kawaiha‘o Church)... We need a list of names (people, places, boats, etc.) that includes variant names – names changed often depending on things that happen in your lifetime... people had more than one name... Hawaiian-ization of names, shorthand of names, nicknames, etc. – IPP
- Maybe the narrow down [in terms of narrowing down what is to be included in a Hawaiian KOS] is still getting as much breadth as you can but not filling it up as much [for] each [area] right now – so narrowing it down in a different way.” – FP

The question of ‘knowledge’ and ‘Hawaiian knowledge’ – what it is and includes (or doesn’t include) – is a “big question.” This was acknowledged by all faculty participants and by most information professionals. One faculty participant drew a connection with our discussion on Hawaiian knowledge and what knowledge would be included in a Hawaiian KOS with recent inquiries about ‘what is [or qualifies as] Hawaiian art?’

Leadership

To ground the conversations about a Hawaiian KOS, usually the last question posed to participants was: *Who would be in charge of creating a Hawaiian KOS? And, who would contribute to and/or coordinate its creation?* In asking this question, I wanted participants to consider the stakeholders of such a system and all the people and organizations that would need to be involved in the creation process in order to establish the system they had just spent an hour or more describing during the interview.

Participants considered these organizations important to the creation of a Hawaiian KOS. They are listed in order of number of mentions. Bernice Pauahi Bishop Museum Library & Archives and the University of Hawai‘i libraries were the top two institutions named by participants as potential contributors to a Hawaiian KOS. It is worth noting that the Bernice Pauahi Bishop Museum was once a repository for the Hawaiian Government and received the collection formerly known as the (national) Government Museum (Kahane, 1988, p. 37).

- Bernice Pauahi Bishop Museum Library & Archives
- University of Hawai‘i Libraries

- Office of Hawaiian Affairs
- Hawai‘inuiākea School of Hawaiian Knowledge
- Kamehameha Schools
- Hawaiian Historical Society
- Hawai‘i State Public Library System
- Hawai‘i State Archives
- Brigham Young University – Hawai‘i Library
- Hawai‘i Mission Houses Museum & Library

Other organizations that came up, though not as often, were local professional associations:

- Hawai‘i Library Association
- Association of Hawai‘i Archivists

It’s somewhat surprising that these two Hawai‘i library and information science professional associations weren’t listed as necessary participants in the process by all information professional participants.

No matter who participants named as potential contributors, all seemed to agree the creation of a Hawaiian KOS is not a job for one library rather the success of the system demands the cooperation of multiple institutions. Moreover, they agreed the resulting KOS would be beneficial for all Hawaiian collections:

I think that what you’re talking about and ways of understanding and organizing and setting up structures and process and procedures, I think it’s important because other libraries, such as Midkiff [Library at Kamehameha Schools], they can adopt this [Hawaiian system] too and I don’t think it’ll be that hard... so I think that the impact will be phenomenal. – FP

Still, there wasn’t a clear consensus of who should lead the process or whether or not a single organization should take the lead. Ideas about which institution should take the lead tended to focus on the University of Hawai‘i (UH). Being the state university system, the UH has

a dedicated funding stream and will likely be around for generations which provides some level of sustainability. On a practical level, it makes sense to incorporate the UH Libraries in the process because, as one information professional participant pointed out, “they have the most catalogers.” Still, as a faculty participant commented while talking about including librarians from the Hawaiian Collection at Hamilton Library, “the university should hire more [librarians] to help with this [Hawaiian knowledge organization] project.” Having a full-time staff devoted to the creation of a Hawaiian KOS would certainly show a strong commitment to the project and bolster the university’s mission to:

... provide environments in which faculty and students can discover, examine critically, preserve and transmit the knowledge, wisdom and values that will help ensure the survival of the present and future generations with improvement in the quality of life...

As the only provider of public higher education in Hawai‘i, the University embraces its unique responsibilities to the indigenous people of Hawai‘i and to Hawai‘i’s indigenous language and culture. To fulfill this responsibility, the University ensures active support for the participation of Native Hawaiians at the University and supports vigorous programs of study and support for the Hawaiian language, history, and culture. (Office of the Executive Vice President for Academic Affairs/Provost, 2011, p. 1)

In discussing the leadership UH Libraries already provide for other repositories and for her own cataloging practice, one information professional participant shared:

Sometimes if I’m in doubt, I look in [the] UH [library catalog]. Because that’s another good thing, I’m so glad UH has approved a Hawaiian cataloger position because we really need that. And, other libraries besides us look to UH – I mean, they’re the famous ones for the Pacific, and I don’t know about Australia and New Zealand, but certainly for Pacific Islands yeah everybody looks to UH.

The position she makes reference to is the “Catalog librarian” position that already existed at UH but was recently renamed “Hawaiian Language Cataloging/Metadata Librarian.” The change was made thanks in part to the efforts of a recently retired cataloger, Ruth Horie (whose contributions to Hawaiian cataloging are discussed earlier in this paper), and recognition by UH librarians of the importance of a dedicated cataloger for Hawaiian documents. The position hasn’t been filled yet. But, whoever takes on this job could certainly have a role in the creation of a Hawaiian KOS.

Nevertheless, an information professional participant cautioned:

I don't think [creation of the system] should just rely on institutions because whether we like it or not there's always going to be some sort of either ulterior motive or some sort of thing that binds us... kind of like a tag leash, where we won't be able to fully support or fully pursue what may be the right thing to do. So, by bringing people who won't have those ties but are respected within the community, I think that's how you do it in the most pono [(moral, fitting, proper)] way.

Based on experiences working with institutions, the participant was cautious of relying on UH or institutions in general as either leaders or partners.

Perhaps one of the most honest and realistic answers to the question of who will contribute to a Hawaiian system is “Na ka ‘eleu!” Beyond meaning whoever is simply ‘up to the job’, the faculty participant who shared this idea explained that she believed whoever is called to the kuleana (responsibility, privilege) should contribute.

Process

Participants had various ideas about the process through which a Hawaiian KOS could be established. There seemed to be general agreement that users need to be involved and given the opportunity to provide feedback. Most agreed the diverse group of stakeholders should be involved – kūpuna (grandparent, relative or close friend of the grandparent's generation), mānaleo (native speakers), academics, practitioners (from different areas and communities of practice), language people, information professionals. It was also pointed out that each island should be represented by the people involved as it will help to account for the different ways of doing things and the different word choices used (in Hawaiian and in English) on the different islands.

One idea raised by a faculty participant was to have the Hawai‘inuiākea School of Hawaiian Knowledge coordinate its creation and then have the system grow globally from there:

I would like to see it start at Hawai‘inuiākea and purvey every single existing level globally after that... Because I think in the past, we’ve relied on other people to lead the charge for us and we get stuck holding an empty bag... It’s like ‘no, we’re gonna do this’. These [referring to Hawaiian information professionals who are also graduates of Hawai‘inuiākea] are our own people who have prepared their life work to do this, they are the ones that we trust to do this. We’re talking about being pono [(righteous)]. So the way I see it is, we cannot start in hewa [(wrong, error)] because then [it] can never be pono.

In further justifying this point, the faculty participant explained that the School is a microcosm of Hawaiian society. Taken altogether, its departments – Kawaihuelani Center for Hawaiian Language, Kamakakūokalani Center for Hawaiian Studies, Ka Papa Lo‘i o Kānewai and Native Hawaiian Student Services – and concentration units – Hālau o Laka: Native Hawaiian Creative Expression, Kūkulu Aupuni: Envisioning the Nation, Kumu Kahiki: Comparative Hawai‘inuiākea and Indigenous Studies, Mālama ‘Āina: Hawaiian Perspectives on Resource Management, and Mo‘olelo ‘Ōiwi: Native History and Literature – could be understood as representing various aspects of Hawaiian culture and groups within our communities (e.g. hula, arts, farming, etc.). The basic premise is that if the Hawai‘inuiākea School of Hawaiian Knowledge can develop a system of knowledge organization that works for the School (its collections, faculty and students), the system can then be applied to other repositories. The same faculty participant added the following hope:

I would hope that we have arrived now and that our own people would be seen as having significant enough understanding and value that they would ask our people to step forward to do it. Why? Because we can now. Because we exist. And where they said ‘oh no can ‘cus no more palapala [(diploma, degree)], guess what we get, so move over.

The assertion being that Hawaiians must play a central role in the process and are more than capable of creating a KOS.

Generally speaking though, all participants acknowledged the magnitude of a Hawaiian KOS and most agreed a collective effort is required to create an ideal system.

- “I think you’re kind of like leaning towards ‘can we create some sort of symposium where we can come up with [subject] headings [for a Hawaiian KOS] and we should!’” – IPP
- “Work smarter, not harder.” Create a consortium and shared knowledge organization system (i.e. controlled vocabulary) which will help users when searching the various catalogs and databases and which might eventually be used to facilitate federated searches and the like. – IPP
- Community meetings preferred to a dependence on an advisory board. In holding community meetings, it is hoped that a set of recommendations can be achieved while avoiding the need to serve an advisory group. – FP
- “It’s important that you keep a handle on this immeasurable project and not let it get away from you.” While the importance of keeping an open mind will be integral to the

mission of trying to fulfill the needs of as many stakeholders as possible, it is perhaps equally important for there to be a kahu (caretaker, keeper, administrator) or a core group of kahu who can hone in discussions and findings. – IPP

- “Keep it simple, no need to suffer to succeed.” – IPP
- “Once you get that model from [the] core group, then you can approach some of the organizations to try and get behind it. It's like what we were talking about before - you can't involve the whole community of lawai‘a (fishermen) to set up fishing standards... you can't involve everybody who has a Hawaiian name.” – IPP

Information professional participants recognized a need for collaboration amongst institutions.

- “That is applicable to what you’re sort of talking about [in terms of collaborating on cataloging and controlled vocabularies] is we don’t, we’re not in contact with each other a lot to figure out who has the best collection of this and how do you find it, [because we don’t always know] what it’s called in different places?” – IPP
- “Have a central database in which we can all put stuff... a central portal for Hawaiian materials like WorldCat¹¹ but for Hawaiian materials... [it] would provide a central place to search but then you can get into different collections so you don’t have to go through and search each institution’s collections [individually]... And then all institutions who agreed to be included in this database could then come to agreements about how to catalog things... like heiau and hula as subject headings... and don’t make the rules onerous otherwise people will get annoyed.” – IPP
- Need a symposium, a committee who meets regularly, to discuss this issue and deal with this kind of stuff – users and language people need to be involved so you have the people who use the records not just those who create the records. – FP & IPP
- There have been collaborative efforts put out in the past to create similar symposia – “... way back when, they had an indexing seminar where they all got together at BYUH to share who was indexing what journals to avoid duplication... that was before computers.” – IPP
- “[We] must accept that it’s going to take time [to create an ideal KOS system and to improve access on the whole] – it’s an ongoing process... it’s trial and error... [but we] need to start somewhere.” – IPP

¹¹ WorldCat is a global catalog provided by OCLC (Online Computer Library Center) that enables users to search thousands of library collections worldwide at once and then locate items nearby (see <https://www.worldcat.org>). As previously mentioned, OCLC represents a global library cooperative that allows for sharing of data and catalog records to increase access and decrease costs to individual member libraries.

The question of process, and leadership and participation within that process, prompted participants to reflect on their own experiences with collaborative projects and to contemplate what and who would be critical to the successful establishment of a Hawaiian KOS. As illustrated by the responses highlighted above, various suggestions were offered on process and on the general framework and design of the KOS. In the next section, I provide an analysis of select concerns and recommendations offered by participants that I consider most important to early discussions of a Hawaiian KOS.

Chapter 6: Considerations in the establishment of a Hawaiian Knowledge Organization System

While the wide array of participant responses and concerns will likely need to be addressed at some point in the creation of a Hawaiian KOS, I have chosen to focus my analysis on select aspects which I view as key to the establishment of a Hawaiian KOS. Participants expressed these areas as either challenges or areas of uncertainty. While these could very well be considered challenges, I have chosen to instead present these as aspects that will need to be considered in establishing the system – not so much as challenges but as areas that will need clarification and perhaps reimagining as they essentially determine the audience and also provide guidance for key areas in the design process. These considerations are: the immensity of ‘ike (knowledge); the sustainability of a Hawaiian KOS; the need for Hawaiian LIS professionals; usability; language; education and training; and the importance of collaboration in the creation and maintenance of a Hawaiian KOS.

Immensity of ‘Ike

Throughout this study, I was asked to define ‘ike Hawai‘i (Hawaiian knowledge). Many of the questions posed to participants also touched upon this question and on the articulation of relationships and knowledge within a Hawaiian worldview. This information and understanding is important for defining the purpose and scope of the KOS as well as its intended audience.

As illustrated by participant responses, a Hawaiian KOS could potentially be used for 1) a specific area or areas of Hawaiian knowledge (as in a subject area like farming, all things related to hula, or by language - all things written in Hawaiian), 2) a particular collection or collections of Hawaiian materials, 3) all Hawaiian knowledge, or 4) all knowledge. Part of deciding the purpose and scope of the KOS involves defining what knowledge will be included in the KOS. This is not necessarily an authoritative definition of Hawaiian knowledge but clear statements about what will be included in the KOS - what types of knowledge, what forms (mele, nupepa, etc.), etc. In regard to scope especially, decisions will need to be made about the breadth and depth of the KOS. Will it cover the breadth of Hawaiian knowledge but not go very far in depth? Or, will it have in depth coverage but of only a specified topic or practice (e.g., hula or lawai‘a (fishing))?

The level of specificity of the KOS will ultimately depend on its scope. If a KOS has a narrow focus and is being tailored to a small collection or to one with all very similar materials, more specific terminology will be required to be able to differentiate between materials. On the other hand, if a KOS is being applied to a large collection or one with a broad breadth but not as much depth, general terminology is all that is needed. In fact, in the latter case, specificity may not be a priority because resources are likely limited but also because it would not be efficient as a highly granular vocabulary wouldn't provide much added value to users in this case. With this, it's easy to imagine how applying a vocabulary that was designed for a particular collection to another collection with a different focus or size could pose a problem. A KOS focused on Hawaiian knowledge would provide increased specificity in terminology; a KOS focused on hula (or any other topic) alone would provide even more granularity. So, the more depth the KOS covers, the higher the level of specificity sought - of course the size of the collection the KOS is being applied to must also be taken into consideration. More analysis is needed as to the scope of a Hawaiian KOS as this not only informs term selection but the structure of the KOS as well.

Going further, in establishing a Hawaiian KOS we must negotiate balance between our understandings and information science practices. As expressed by a faculty participant, “everything is related, so how do we separate it [into categories]?” This touches on a foundational difference between Hawaiian and Western classifications. In current practice, an item would be classified to fit the area that is considered most relevant. Generally speaking, all living things are related in Hawaiian thinking so it is difficult to divide Hawaiian knowledge into subject areas or other standard categories. If a Hawaiian KOS is to truly follow Hawaiian understandings then it will be difficult to apply the information science practice of assigning a classification and placing an item in a single place. It would be preferable, as expressed by a faculty participant, to have items in 2, 3, 4+ places. Considering ongoing developments in database systems wherein multiple relationships can now be defined, current technologies no longer limit us to one-to-one relationships and therefore bring us closer to representing relationships more completely in digital environments.

So, perhaps we need to reframe this predicament into a question of “how do things marry?” as one faculty member put it. It is important to think about how things “marry” or relate because these relationships inform the framework and design of a Hawaiian KOS. In the end,

one of the aims for a Hawaiian KOS is to more accurately represent Hawaiian cultural understandings and therefore incorporate the relationships that are currently missing in dominant library KOSs. Admittedly, clear boundaries must be set between whichever categories are eventually selected. But, I emphasize here that the way in which these categories relate to each other and may even have crossover between them should somehow be represented in the system and therefore discussed at the outset.

Sustainability

Uncertainty about the sustainability of a Hawaiian KOS is perhaps the biggest question and is probably therefore the primary reason such a system has not yet been created despite the informal and formal conversations that have been occurring over the years – before I began library school and perhaps even before I was born.

Grant funding would definitely help toward the sustainability of a Hawaiian system. Funding might be acquired from private, state and federal granting agencies, including the Office of Hawaiian Affairs and the Institute of Museum & Library Services (IMLS).

The Office of Hawaiian Affairs awards funding for projects related to education and information science. In 2013, the Hula Preservation Society received a programmatic grant for nearly \$90,000 for the “Nā Mākua Mahalo ‘Ia Collection digital repository of cultural resources for hula and music” and the Lāna‘i Culture and Heritage Center received just over \$38,000 for “educational and interpretive programming for culture and history of Lāna‘i” (Office of Hawaiian Affairs, 2013, p. 12). OHA also administers the Papakilo Database and Kipuka, which “provides a window into native Hawaiian land, culture and history” (Office of Hawaiian Affairs, 2013, p. 6); both databases would certainly benefit from and be informed by a Hawaiian KOS.

According to their website, the mission of IMLS is “to inspire libraries and museums to advance innovation, lifelong learning, and cultural and civic engagement” (IMLS, n.d.-a, Mission section). IMLS offers a Native Hawaiian Library Services (NHLS) grant to nonprofit organizations “that primarily serve and represent Native Hawaiians (as the term is defined in 20 U.S.C. § 7517)” for projects that “enhance existing library services or implement new library services” (IMLS, n.d.-b, Program Overview section). This NHLS grant provided the principal funding for ALU LIKE, Inc.’s Native Hawaiian Library and has been awarded to a handful of

other Hawaiian organizations over the past few years. In 2013, ALU LIKE, Inc., Hula Preservation Society, Kanu o ka 'Āina Learning 'Ohana, and Papahana Kuaola were each awarded NHLS grants (IMLS, 2013). Two of these four organizations were led by Hawaiians with a Master in Library and Information Science degree at the time of application. In 2014, IMLS awarded just over \$550,000 in NHLS grant funding to Hula Preservation Society (\$107,125), Kanu o ka 'Āina Learning 'Ohana (\$298,350), and Papahana Kuaola (\$146,094) (IMLS, 2014). The creation of a Hawaiian KOS would undoubtedly fall within the scope of the NHLS grant.

It may take years to plan and design a Hawaiian KOS. This of course means that those involved need to make a long-term commitment to the project and that in turn those organizations and institutions need to also be long-lasting. This is a serious challenge considering ongoing budget cuts and the shortages of funds to support the normal operations of cultural institutions notwithstanding taking on a huge project such as is being proposed here. Still, it is a worthy undertaking not out of reach.

Time is certainly of the essence though. With the increase in digitization projects in Hawai'i and the exponential growth in born-digital documents, there is a sense of urgency for the establishment of a Hawaiian KOS. While this is a process that involves considerations at various levels in terms of a framework, concepts, language, stakeholders, designers and so on, we must remember that the KOS is something we must continuously maintain. I say this only because it has been made apparent to me in conversations with information professionals that we cannot adopt a leisurely approach and take decades to create a system. Digital projects have already been launched; some utilize dominant KOSs, some are without controlled vocabularies altogether. If the creation of a Hawaiian KOS takes too long, we may miss this window of opportunity provided with digital collections; and, while it will be necessary for catalogers and other staff to retrospectively apply the KOS, it can be both expensive and time-consuming.

Need for Hawaiian LIS Professionals

Another related issue is the number of Hawaiians in the information science field who might contribute to, implement and utilize a Hawaiian KOS and enhance services to our Hawaiian communities generally. Hawaiians have a kuleana (right, privilege, responsibility) to

be the stewards of our knowledge. Kawika Makanani, a recently retired Librarian from Kamehameha Schools Kapālama, recognizes the efforts of non-Hawaiians in caring for our knowledge in repositories while at the same time calling for the training of Hawaiian information professionals to take on these roles:

While indigenous peoples are rightly wary of outsiders, we need to acknowledge that some have contributed to our survival and endured their own hardships in doing so. Although their own people wrought great harm, they collected and preserved traditions that might have been lost forever... Nevertheless, it is the responsibility of such selfless individuals to consider that their best work will be to train and prepare native peoples to conduct such work for themselves. Correspondingly, indigenous peoples must accept the responsibility of being the stewards of their own knowledge. (2011, p. 39)

To further Makanani's thought, I would argue a concerted effort is needed to recruit Hawaiians into Master's in Library & Information Science (MLISc) programs and the information science field. In "History and Status of Native Americans in Librarianship," Lotsee Patterson (2000) gives an overview of the development of tribal libraries and suggests strategies for the recruitment and retention of Native Americans in the field. Patterson (2000) states:

It will take a concentrated effort on the part of library school faculty to actively recruit American Indian/Alaska Natives if the number of librarians from this ethnic group is to increase. Retention in the program is an additional issue. Arranging mentors, recruiting from the ranks of the paraprofessional workers in libraries, providing financial aid, having an extensive support system in place, and having Native American role models as practitioners and library school faculty are all important elements in attracting and retaining students of this ethnicity. (p. 188)

Over the past three years, Nā Hawai'i 'Imi Loa (NHIL), a graduate student organization at the University of Hawai'i at Mānoa, has already begun a humble effort to recruit Hawaiians and graduates of the Hawai'i inuiākea School of Hawaiian Knowledge. Nā Hawai'i 'Imi Loa's mission is:

To service the Hawaiian community, by strengthening the Native Hawaiian presence in the Library and Information Sciences profession, and by building the capacity of the Hawaiian community in Library and Information Sciences practices.¹²

The organization initiated the Ho'okele Na'auao: A Hawaiian Librarianship Symposium to show students and the public how an MLISc degree and information science can be a tool for our

¹² For more information about its mission and objectives, see Nā Hawai'i 'Imi Loa's website (<http://nhil.weebly.com/>).

communities and to recruit Hawaiians into the MLISc program. With the support of the Hawai‘inuiākea School of Hawaiian Knowledge and the Library and Information Science Program at the University of Hawai‘i, NHIL has co-hosted the symposium annually since 2013.

Even as a student organization, NHIL has the potential to serve the people of Hawai‘i similar to the way in which the American Indian Library Association serves the information needs of American Indians and Alaska Natives in the United States. Considering its membership and successes thus far, I would argue NHIL brings us a step closer to establishing an “indigenous identity” in librarianship – something that hasn’t occurred yet for Hawaiian librarians, as Kawika Makanani (2011) observes:

The American Library Association (ALA) does address the unique status of Native Americans to some degree, with its support of the American Indian Library Association. Hawaiian and Pacific Islander librarians would find few places to express their own indigeneity in ALA, but the same would be true in the Hawai‘i Library Association, partly because Hawaiian librarians have yet to develop an indigenous identity. (p. 35)

Among its successes, NHIL provides a support system for students, connects them with local professionals and provides professional development opportunities for students as well as for the community. From my own experiences as a member, I would say NHIL provides a forum for expressing indigeneity and thus provides a foundation from which to start, but more can certainly be done to support Hawaiians in the information science field.

As discussed, increasing the number of Hawaiians with Library and Information Science degrees and the number employed in the information field is imperative. Going further, LIS education would be more desirable if the curriculum were more sensitive to and inclusive of the cultures and worldviews of indigenous and ethnic communities. It may even benefit from this inclusivity. There is a recognized need for more adequate archival education that “addresses the needs and sensitivities of a single local community or multiple diverse communities, as well as the needs of the individual archival student often studying without the benefit of a student or professional cohort” (McKemmis, Gilliland, & Ketelar, 2005). The integration of culture, language and epistemologies in LIS education is a critical step toward this end. In Hawai‘i, it’s principally important that LIS education be inclusive of Hawaiian culture and traditions (Wareham, 2002).

Critical discussions are taking place at the University of Hawai‘i about how this might be realized in the Library & Information Science Program and in other programs across the university. The Library & Information Science Program has made some attempts to address Hawaiian issues. A special topics course on Hawaiian and Pacific resources and librarianship is offered every year or so by librarians from the Hawai‘i and Pacific collections at the University of Hawai‘i at Mānoa. Dr. Loriene Roy, a Professor at the University of Texas at Austin and a well-known indigenous librarian, has also been brought in as a visiting professor to teach a special topics course on indigenous librarianship. But, a more concerted effort on the part of the Program and university is needed to develop the curriculum and program offerings and to recruit Hawaiians. This is a topic that needs to be investigated further in another paper.

Usability

The system should meet the needs of all stakeholders – kūpuna (grandparent, relative or close friend of the grandparent's generation), academics, practitioners (from different areas and communities of practice), language people, information professionals, etc. – and be user-friendly. To help ensure this, the system will require consultations with its stakeholders, primarily Hawaiian communities.

In consideration of Hawai‘i’s political and legal history, there is also a need for future research to consider how best to provide access to all Hawaiian nationals, not just the indigenous people of Hawai‘i but people of all ethnicities within our nation state.¹³ As education about Hawai‘i’s history and nationhood continue to increase, the need for information services at a national level will also be realized. Discussions about a Hawaiian KOS will necessarily be brought to the forefront at that time. This research will contribute to the decision-making process when this time comes. At the same time, the goal of this research is to initiate more discussion about the possible use of such a system now, especially as cultural heritage institutions like libraries and archives are already pursuing digital projects that might benefit.

¹³ For more information about Hawai‘i’s sovereignty, see: Sai, D. K. (2008). *The American occupation of the Hawaiian Kingdom: Beginning the transition from occupied to restored state* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global. (304605311)

Language

In defining an audience for a Hawaiian KOS, the decision about what language or languages it should encompass should not be overlooked. For Hawai‘i, two languages must necessarily be considered – Hawaiian and English.

If the system were to be completely in English, how would you catalog ‘ōlelo Hawai‘i materials? There is a question of granularity and to what degree English can account for the level of specificity represented by words and names in ‘ōlelo Hawai‘i. Translations require additional cultural knowledge and can be problematic, mainly because translations pose the risk of losing meaning (Wong 1999); this is particularly evident in the case of ‘ōlelo Hawai‘i because words may have multiple meanings and can also hold kaona (hidden meanings). Words also hold mana (spiritual power), as expressed in the commonly referenced ‘ōlelo no‘eau (proverb, wise saying), “I ka ‘ōlelo no ke ola, i ka ‘ōlelo no ka make,” which Pukui translates as “Life is in speech; death is in speech. Words can heal; words can destroy” (Pukui, 1983, p. 129). So, term selection should not be taken lightly.

If the system were to be completely in ‘ōlelo Hawai‘i, how would you catalog words and names in English and other languages? Would the system require the creation of ‘ōlelo Hawai‘i equivalents? There continues to be a rich debate amongst ‘ōlelo Hawai‘i speakers and educators concerning authenticity and the creation of words in the 21st century (Wong, 1993). Should we “Hawaiianize” words from English and other languages through transliteration or by using words and ideas which are already within the language? The Kōmike Hua’ōlelo, or Hawaiian Lexicon Committee, established in 1987, publishes *Māmaka Kaiao: A Modern Hawaiian Vocabulary* and has outlined guidelines for creating ‘ōlelo Hawai‘i words “for concepts and material culture unknown to our ancestors,” like kīwī (tv) and Pūnaewele Puni Honua (World Wide Web) (Kōmike Hua’ōlelo, 2003, xxiii.). Would the system simply adopt these principles?

A Hawaiian KOS should be managed and kept updated. Thus, new terms will need to be added periodically. Would the system rely upon this Lexicon Committee for new vocabulary? If the option of pursuing a Hawaiian KOS entirely in ‘ōlelo Hawai‘i is to be seriously considered, decisions will need to be made concerning the creation of new ‘ōlelo Hawai‘i terms and/or use of other languages. A lot of this decision should be based upon general practice and recommendations from the language community who are best suited to answer this complex

question. A clear consensus on this has yet to be achieved, and perhaps may never be, but this should not impede on the creation of a Hawaiian KOS.

Another aspect of language requiring consideration is dialects. Rather than simply selecting the most popular dialect as the authority, the ideal system would include all dialects. For example, there is general acknowledgement of a Ni‘ihau dialect of ‘ōlelo Hawai‘i. And in this case, mānaleo (native speakers) could certainly provide assistance with its inclusion in a Hawaiian KOS. What about the Maui dialect and others? As in the Māori Subject Headings Project and the Brian Deer Classification, efforts should be made to accommodate dialects as much as possible.

Whether or not it should be completely in ‘ōlelo Hawai‘i or English or bilingual is to be determined by its creators. Most interview participants agreed it should be bilingual, at least at first. Some passionately believed the ideal system would be in ‘ōlelo Hawai‘i only. Nevertheless, recognizing that only a fraction of today’s Hawaiian population speaks ‘ōlelo Hawai‘i, many acknowledged that a system accessible to all Hawaiian communities should remain the priority.

While the creation of a system in ‘ōlelo Hawai‘i may pose additional challenges up front, there are some questions surrounding language that a Hawaiian KOS would have to answer regardless of if it’s in English or ‘ōlelo Hawai‘i:

- Lack of a ‘ōlelo Hawai‘i thesaurus
Other projects to create alternate KOSs, like the Māori Subject Headings for example, heavily rely on thesauri to create subject headings and other authority lists (like name authorities). However, a complete thesaurus for the Hawaiian language has not yet been created.
- Spelling
When developing the KOS, decisions will need to be made regarding spelling of ‘ōlelo Hawai‘i. While there are spelling variations in ‘ōlelo Hawai‘i, only one spelling can be used in order to maintain consistency. ‘See for’ or ‘Used for’ references should be used to indicate the system’s spelling preferences to users.
- Diacritical markings
A related issue is use of diacritical markings for ‘ōlelo Hawai‘i - the ‘okina (glottal stop) and the kahakō (macron). Nineteenth-century ‘ōlelo Hawai‘i language newspapers did not utilize as many diacritical markings as are used in modern orthography and some believe this omission of diacritical markings should be maintained. Others believe diacritical markings should be used to allow for meaning to be less ambiguous. This is an ongoing debate in the language community. A clear

decision must be made as to whether or not diacritics should be used in a Hawaiian KOS and whatever is decided it is important to remain consistent.

- **Alphabetizing ‘ōlelo Hawai‘i words**
An accepted, standard methodology for alphabetizing Ōlelo Hawai‘i words has yet to be established. One participant pointed out that placement of words starting with an ‘okina tends to vary in things like glossaries for example – sometimes ‘okina are listed in the beginning (before words starting with ‘a’) and other times they are listed at the end (after words starting with ‘we’). In *Māmaka Kaiao: A Modern Hawaiian Vocabulary*, entries in the Hawaiian-English section “have been arranged according to the ‘ōlelo Hawai‘i alphabet” and “words beginning with letters of the English alphabet which are not in the standard ‘ōlelo Hawai‘i alphabet will be found after the ‘okina” (Kōmike Hua’ōlelo, 2003, p. xxi). Kahakō pose a related issue. As an example, there are multiple ways one might order the following: Hāna, hana, Hanalei and hana lei. Part of this is dependent on technical (software) capabilities and part is due to a lack of a style manual or the like which might establish standardized rules on diacritics usage and proper (alphabetical) order for all publications, databases, etc.

Thus, discussions about the language(s) of the system will involve somewhat complex decision-making but will nonetheless need to take place early on in the planning process as it is both affected by and affects the intended audience of the system altogether.

Education and Training

In order to implement such a system, catalogers, metadata specialists and whoever else will be responsible for metadata decisions will need to be educated and trained on a Hawaiian KOS. At current, information professionals receive training during their LIS graduate education in introductory and advanced cataloging courses, internships, in specialized training sessions for certifications and via on-the-job training. Similar courses and training sessions will need to be developed to educate information professionals in Hawai‘i and ideally wherever Hawaiian knowledge is being collected and preserved.

Furthermore, evaluation of materials should be based on Hawaiian values and perspectives. This requires training in and understanding of Hawaiian language and culture. Thus, in addition to understanding the general mechanics of the system, information professionals should earn an educational background in Hawaiian Studies and ‘ōlelo Hawai‘i through formalized education and/or ma ka hana ka ‘ike (a proverb meaning learning through doing). The establishment of a dual degree program with the Hawai‘inuiākea School of Hawaiian

Knowledge and the Library and Information Science (LIS) Program at the University of Hawai‘i provides an inviting opportunity for information professionals to earn proficiency in both areas. This dual degree program is the first dual degree established with the Hawai‘inuiākea School of Hawaiian Knowledge; it reflects a realization of the importance of education and training in both areas for information professionals.

Collaboration

As has been outlined above, it will take dedicated partners and funding to sustain such an undertaking but the result will undoubtedly contribute to Hawaiian knowledge and benefit researchers in the long run. Hawaiian cultural experts, academics, information professionals, organizations and other stakeholders will need to participate in collaborative discussions and work together to come up with a system or systems that fits our Hawaiian community. In discussing the general need for collaboration when working at “the intersections between Indigenous knowledge and libraries and archives,” Nakata and Langton (2005) advise:

Rather than viewing this [necessary collaboration] as a daunting prospect, we would encourage the view that broad collaboration on all these fronts will assist and enable the development of processes and standards for practice that reassure and satisfy the interests of Indigenous people and the library and information sector, as long as the process is one of genuine sharing and cooperation and works towards consistently high standards, rather than minimum ones. (p. 6)

Partnerships and collaboration will be key in the creation of a Hawaiian KOS. The current trend toward digital collections (whether digitized or born-digital) provides greater opportunities for collaboration. As collaborations grow, serious consideration should be given to the creation and use of KOSs that might be more appropriate for researchers within digital collections, which this study has already begun to investigate.

Summary

While much insight and a good many ideas about a Hawaiian KOS have been shared in this study, I acknowledge that this remains an intellectual discussion somewhat removed from the everyday work of catalogers and others responsible for providing access to Hawaiian

knowledge. The hope is that these findings will inform future discussions on knowledge organization within and across institutions in Hawai‘i as well as discussions of a national KOS for Hawai‘i. Ideally, the conversations that took place during this study and the discussions that will arise as a result will inspire information professionals and others to begin to bridge the gap between the theoretical and the day-to-day work of librarians and archivists today. To underline the importance of a Hawaiian KOS and subsequently advance its establishment, I have begun to outline the need for and potential outcomes of such a system for the Hawaiian community in the next section.

Chapter 7: Establishing a Hawaiian Knowledge Organization System

A Hawaiian KOS provides a means through which to assert our ‘ike (knowledge, awareness, understanding) and our ways of knowing. It also presents an opportunity to control how knowledge is shared. Of primary consideration is the ability to represent cultural relationships and understandings – which are embedded in the land, in genealogies and in ‘ōlelo Hawai‘i – in the way information is accessed.

Classifications and subject headings define relationships, control the interpretation of knowledge, and determine the level(s) of access available to users (Moorcroft, 1993). As such, the act of assigning names to materials, and essentially to knowledge, that is central to these systems of knowledge organization should not be underestimated or taken for granted. As explained by a faculty participant:

To be the namer of names is a demonstration that you are the parent of something... to name something is to have a specific kind of mana [(power, authority)] – that talks about us being able to self-determine who we are.

Naming is fundamentally an act of sovereignty.

Names are extremely important in Hawaiian culture – we have specific names for everything from fish to parts of each plant to the winds and rains. Names not only inform us about the places we live and visit, but more generally about our ancestors’ understandings of the world and nohona Hawai‘i (Hawaiian culture and modes of life). Thus, by implementing a Hawaiian KOS based upon Hawaiian perspectives and which includes ‘ōlelo Hawai‘i names, libraries and archives will better document and represent the materials they seek to preserve and provide access to.

Ultimately, a Hawaiian KOS will result in improvements to access for Hawaiian communities and anyone seeking to respectfully and responsibly research Hawai‘i. In the remaining paragraphs, I further describe the need for a Hawaiian KOS and begin to outline some of the applied benefits for the Hawaiian community.

‘Ōlelo Hawai‘i Revitalization

‘Ōlelo Hawai‘i is the mother tongue of Hawaiians. It has been recognized as an official language of Hawai‘i along with English.¹⁴ Article XV, section 4 of the Constitution of the State of Hawai‘i states “English and Hawaiian shall be the official languages of Hawaii, except that Hawaiian shall be required for public acts and transactions only as provided by law.” According to the U.S. Census Bureau’s American Community Survey (2010), there were over 24,000 ‘ōlelo Hawai‘i speakers ages 5 and older in the United States between 2006-2008. If we consider that the U.S. Census Bureau (2010) reported just over 19,000 ‘ōlelo Hawai‘i speakers ages 5 and older in 2000, then we see that the number of speakers is steadily increasing. ‘ōlelo Hawai‘i teachers tend to postulate that there are fewer than 500 native speakers (NeSmith, 2012), thus the majority of speakers are learning ‘ōlelo Hawai‘i as a second language.

Leading the charge for Hawaiian language revitalization, Pūnana Leo and Kula Kaiapuni along with charter schools now enable students to complete their K-12 education in ‘ōlelo Hawai‘i immersion schools. The University of Hawai‘i also offers ‘ōlelo Hawai‘i classes, certificates, and degrees which further support language revitalization efforts. In 2006, the University of Hawai‘i at Mānoa saw the first dissertation written in ‘ōlelo Hawai‘i (Ng-Osorio & Ledward, 2011, p. 3).

Moreover, as Ng-Osorio and Ledward (2011) point out, “the public now has greater access to Hawaiian language content through the multiple media sources, such as the Internet, television programs such as ‘Ōiwi TV and ‘Āha‘i ‘ōlelo Ola, books, music, and websites (e.g., www.wehewehe.org)” (p. 3).

Hawaiian scholarship has undoubtedly benefited from language revitalization efforts. Both the quantity and depth of studies relating to Hawaiian knowledge have grown. Increasingly, researchers are going beyond secondary sources – which have been heavily relied upon and regurgitated (Nogelmeier, 2010) – and placing a higher value on primary sources. As this trend continues, the need for access to Hawaiian materials not limited to works written in ‘ōlelo Hawai‘i will increase. The general demand in current day for digital access and information magnifies this need.

¹⁴ This information is on the Hawaii Legislative Reference Bureau website (<http://lrbhawaii.org/con/conart15.html>). It also notes that section 4 was added by the Constitutional Convention of 1978 and ratified in the general election of Nov. 7, 1978.

Supporting Hawaiian Scholarship

Hawaiian scholars are increasingly investigating, researching, writing and telling our histories and experiences – thereby reclaiming and reasserting our stories which have for so long been controlled by missionaries and non-Hawaiians. In his introduction to *No Makou Ka Mana: Liberating the Nation*, Kamanamaikalani Beamer (2014) explains that his mo‘olelo (story) places the ali‘i (chiefs and chiefesses) at the center and in doing so tells a narrative of how we, the Hawaiian people, have firmly progressed in spite of the many challenges faced. Beamer (2014) explains:

Highlighting the achievements of ancestors frees their spirits and allows us to view our forebears as more than victims. Focusing on the deliberate decisions and accomplishments of the ali‘i also empowers ‘Ōiwi to continue to control our future and to liberate our minds from previously conceived binaries and limited possibilities. (p. 4)

The creation and use of a Hawaiian KOS would parallel this paradigm shift and support this ongoing effort.

On the most practical level, a Hawaiian KOS would better support research by relieving the need for researchers to constantly translate their research needs both literally and figuratively. Since ‘ōlelo Hawai‘i is not widely incorporated in the KOSs currently in use in libraries and archives, researchers are required to translate their research topics into English to conduct searches. Moreover, Hawaiian researchers are almost forced to think about how Westerners perceive our stories, ideas and concepts in order to find Hawaiian materials because that’s who collections have been described by and for.

A Hawaiian KOS would offer a framework for organizing and representing Hawaiian knowledge. It would place Hawaiian society at the center and represent Hawaiian values and understandings. Implicit in this system are relationships between land and ocean and kānaka (human beings) and akua (gods, goddesses), as well as our genealogies with all other beings. Thus, use of a Hawaiian KOS would allow scholars to search in a manner that is more consistent with Hawaiian perspectives. This would also end up enriching research and writings for some as it would enable and empower researchers to view related topics and stories that they would not otherwise be presented with or made aware of in repositories. In this way, a Hawaiian KOS will contribute to more complete coverage and representation as opposed to limiting research to imposed silos.

Beyond Search and Retrieval

Going beyond the principal objective of retrieval, a Hawaiian KOS will have additional outcomes for Hawaiian communities and for the field of Hawaiian Studies. I briefly discuss three of these outcomes in the next paragraphs.

First, a Hawaiian KOS will present and promote Hawaiian cultural understandings and ways of knowing. Implementation of a Hawaiian KOS will provide a portal through which users will learn and familiarize themselves with Hawaiian culture as they navigate the system. In this way, a Hawaiian KOS will act as a tool to revitalize Hawaiian language and culture by educating information professionals (catalogers in particular) and researchers within the Hawaiian community and within the general public.

Second, a Hawaiian KOS will positively impact collective and individual identities. Libraries and archives in Hawai'i and around the world collect and preserve cultural heritage. Because of this basic fact, they play a role in the preservation and, where necessary, the reclamation of our culture, language, and history. Collections held in libraries and other repositories and the ways in which these are described and organized shape identity. In presenting more culturally appropriate representations of Hawaiian collections, a Hawaiian KOS not only validates Hawaiian ways of knowing but also creates memory and can have positive effects on Hawaiian identities.

Lastly, creation of a Hawaiian KOS will add to the field of Hawaiian Studies. The research involved in designing the KOS and the creation process itself should be documented for transparency but also for scholarship in its own right. By developing scholarship and eventually establishing practice within Hawaiian librarianship, we effectively support and bolster Hawaiian studies. In addition, we contribute to indigenous librarianship and indigenous studies more broadly (Doyle, 2013, p. 287).

Conclusion

In describing the inadequacies of Western KOSs for indigenous knowledge in previous sections, this thesis advances the need for a Hawaiian KOS. The LCC, the LCSH, and other Western KOSs may be practical for general library collections in the United States but they do not represent Hawaiian epistemologies and do not adequately serve the Hawaiian community.

While the utility of library and information practices should not be overlooked, an approach focused solely on amending and adding Hawaiian terms to Western KOSs is not enough to improve access. Broader change in the field of library and information science and in the institutional practices of local libraries and archives is suggested.

A Hawaiian KOS consistent with Hawaiian epistemologies is needed to ensure that Hawaiian knowledge in libraries and archives is accessible to the Hawaiian community. Being as the research interests of the Hawaiian community expand beyond Hawaiian collections, the KOS should have the capacity to expand to account for all types of collections.

A key recommendation from participants was that the integrity of the KOS is largely dependent on the participation of the Hawaiian community at each stage of development. Existing Hawaiian principles and frameworks will also inform the objectives, process, structure and design of the KOS. Although the participants' recommendations may not have led to a detailed model or structure of a Hawaiian KOS, their ideas and concerns should be considered in the creation of a Hawaiian KOS.

However, being as only a small number of participants were surveyed, further research is required to ensure the KOS addresses the needs of the Hawaiian community. Research on Hawaiian epistemologies, on access to Hawaiian knowledge, and on the information practices of the Hawaiian community are significant to the development of a Hawaiian KOS. Studies into each of these topics would of course contribute to and support the development of the emergent field of Hawaiian librarianship.

Appendix A: Acronyms

This is a select list of the acronyms and initialisms used heavily throughout this thesis.

ALA	American Library Association
BDC	Brian Deer Classification System
DDC	Dewey Decimal Classification
FP	Faculty Participant
IMLS	Institute of Museum & Library Services
IPP	Information Professional Participant
KOS	Knowledge Organization System
LCC	Library of Congress Classification
LCSH	Library of Congress Subject Headings
LIS	Library and Information Science
MARC	MAchine-Readable Cataloging
MLISc	Master of Library and Information Science
MSH	Ngā Ūpoko Tukutuku Māori Subject Headings
MSHWP	Māori Subject Headings Working Party
NHIL	Nā Hawai‘i ‘Imi Loa
OHA	Office of Hawaiian Affairs
PCC	Program for Cooperative Cataloging
SACO	Subject Authority Cooperative Program
UH	University of Hawai‘i

Appendix B: Glossary

Ali'i	nvs. Chief, chiefess, officer, ruler, monarch, peer, headman, noble, aristocrat, king, queen, commander
‘Auwai	n. Ditch, canal
Heiau	n. Pre-Christian place of worship, shrine; some heiau were elaborately constructed stone platforms, others simple earth terraces
Hula ‘Auana	n. Informal hula without ceremony or offering, contrasted with the hula kuahu; modern hula
‘Ike	nvt. To see, know, recognize, experience; knowledge, awareness, understanding, recognition
Kahakō	n. Macron
Kahiko	nvs. Old, ancient, antique, primitive, long ago, beforehand
Kahu	n. Honored attendant, guardian, keeper, administrator, caretaker
Kalo	n. Taro (<i>Colocasia esculenta</i>), a kind of aroid cultivated since ancient times for food
Kānaka	nvs. Human beings, individuals
Kaona	n. Hidden meaning, as in Hawaiian poetry; concealed reference as to a person, thing, or place; words with double meanings that might bring good or bad fortune
Kuleana	nvt. Right, privilege, concern, responsibility
Kumu	n. Teacher; source
Kupuna	n. Grandparent, ancestor, relative or close friend of the grandparent’s generation, grandaunt, granduncle
Kūpuna	Plural of kupuna (see above)
Lawai‘a	nvi. Fisherman; fishing technique; to fish, to catch fish
Lā‘au lapa‘au	n. Medicine. Lit., curing medicine
Lewa	n. Sky, atmosphere, space, air, upper heavens
Lo‘i	n. Irrigated terrace, especially for taro, but also for rice
Ma‘a	nvs. Accustomed, used to, knowing thoroughly, habituated, familiar

Mana	nvs. Supernatural or divine power
Mānaleo	n. Native speaker
Mele	nvt. Song, anthem, or chant of any kind; poem, poetry; to sing, chant
Mo‘olelo	n. Story, tale, myth, history, tradition, literature, legend, journal, log, yarn, fable, essay, chronicle, record, article
Nohona	n. Residence, dwelling, seat, mode of life, existence, relationship
‘Okina	Glottal stop
‘ōlelo	nvt. Language, speech, word, quotation, statement, utterance, term, tidings; to speak, say, state, talk, mention, quote, converse, tell
‘ōlelo no‘eau	n. Proverb, wise saying, traditional saying
Palapala	nvt. Document of any kind, bill, deed, warrant, certificate, policy, letter, tract, writ, diploma, manuscript
Pono	nvs. Moral, fitting, proper, righteous, right, upright, just, virtuous

Note: The definitions in this glossary were taken from *Hawaiian Dictionary: Hawaiian-English, English-Hawaiian*, rev. and enl. ed., by M. K. Pukui and S. H. Elbert, 1986, Honolulu, HI: University of Hawai‘i Press.

Appendix C: Example of a Hawaiian Heading

The Kumulipo, a cosmogonic genealogy, was discussed at some level in the majority of interviews as a prospective foundation for a Hawaiian KOS. To further this conversation, below is an example of what a heading might look like in a Hawaiian KOS based upon the relationships encompassed within the Kumulipo. It is necessary to point out that the Kumulipo is not the only cosmogonic genealogy; others, such as Palikū, Kumuhonua and Ololo, are known and many others may have existed prior. On this note, it is also worth pointing out that the Kumulipo includes the names of other cosmogonic genealogies and so may allow for expansion in the framing of the KOS. Selecting a structure that can encompass all topics may be difficult but the KOS can continue to be updated and built upon.

As has been emphasized in this paper, the creation of a Hawaiian KOS will require a collaboration of Hawaiian cultural practitioners, language experts, information professionals and others. The purpose of sharing this example is simply to get the ball rolling so that readers can begin to visualize a Hawaiian KOS. This is a basic example and certainly only a fragment of what would be a much richer descriptive system. As is (hopefully) apparent, there is ample opportunity for a Hawaiian KOS to improve access and to advance Hawaiian worldviews.

	Hawaiian KOS	LCSH
Heading	<i>Authorized heading</i> (e.g. Hāloa)	Taro
Variant Term	<i>Enter variant terms</i> (e.g. Kalo, Taro)	Caladium esculentum Cocoyam Colocasia esculenta Colocasia violacea Dalo Dasheen Eddo Kalo
See Also		Colocasia
Wā	<i>Enter the wā (era, period of time) that the heading is most associated with</i> (e.g. 'Umikūmālua)	
Wā like	<i>List the names of all others born in the same wā (era,</i>	

	<i>period of time)</i>	
Mākua	<i>List the headings for each parent (e.g. Wākea, Ho‘ohōkūkalani, Papa)</i>	
Mamo	<i>List the headings for descendants (e.g. varieties of kalo)</i>	
Kinolau	<i>List all physical forms</i>	
Wahi	<i>List all associated places (i.e. birthplace, home, battlegrounds, etc.)</i>	
‘Ano Hana	<i>List all concepts, values, uses or functions this person/place/other represents or is otherwise associated with</i>	
Kumu	<i>Cite the sources used to document the heading</i>	

Appendix D: Letter Inviting Hawai‘inuiākea Faculty Participants

Aloha e _____,

My name is Shavonn Matsuda. I am a graduate student at the University of Hawai‘i at Mānoa in the Library & Information Science Program. As part of the requirements for earning my graduate degree, I am conducting a research project on knowledge organization systems. The purpose of my project is to investigate to what extent Western systems of knowledge organization are adequate for describing and organizing Hawaiian knowledge.

Since you are a Hawaiian scholar and a faculty member at Hawai‘inuiākea School of Hawaiian Knowledge, I believe you could provide valuable input to my research. Accordingly, I am hoping you’ll consider supporting my study by sitting for a semi-structured interview with me. The interview will consist of 10-16 questions related to your research experiences with Hawaiian materials and any ideas you might have about improving access to these materials. The interview will be approximately 60-90 minutes.

Your participation is entirely voluntary. If you think you might be interested in participating, please review the Participant Consent Form (pdf) attached which provides additional details of the study and a brief description of the interview. If after reviewing the form, you agree to participate, please sign and date the form and return it to me via email (or I could pick it up from you in-person).

Please don’t hesitate to contact me at xxx@hawaii.edu or at (808) xxx-xxxx if you have any questions or concerns. I’d also be more than happy to meet with you to discuss my study and/or the interview in more detail prior to any commitment from you to participate.

Mahalo for considering this request. I look forward to hearing from you.

Me ka ha‘aha‘a,
Shavonn Matsuda

Appendix E: Letter Inviting Information Professionals Participants

Aloha e _____,

My name is Shavonn Matsuda. I am a graduate student at the University of Hawai'i at Mānoa in the Library & Information Science Program. As part of the requirements for earning my graduate degree, I am conducting a research project on knowledge organization systems. The purpose of my project is to investigate to what extent Western systems of knowledge organization are adequate for describing and organizing Hawaiian knowledge.

Since you are an information professional at an institution known to have a collection of Hawaiian materials, I believe you could share a professional perspective on knowledge organization and access to Hawaiian materials. With your experience and expertise in working with and providing access to Hawaiian materials, I believe you will undoubtedly contribute valuable input.¹⁵ Accordingly, I am hoping you'll consider supporting my study by sitting for a semi-structured interview with me. The interview will consist of 10-16 questions related to your research experiences with Hawaiian materials and any ideas you might have about improving access to these materials. The interview will be approximately 60-90 minutes.

Your participation is entirely voluntary. If you think you might be interested in participating, please review the Participant Consent Form (pdf) attached which provides additional details of the study and a brief description of the interview. If after reviewing the form, you agree to participate, please sign and date the form and return it to me via email (or I could pick it up from you in-person).

Please don't hesitate to contact me at xxx@hawaii.edu or at (808) xxx-xxxx if you have any questions or concerns. I'd also be more than happy to meet with you to discuss my study and/or the interview in more detail prior to any commitment from you to participate.

Mahalo for considering this request. I look forward to hearing from you.

Me ka ha'aha'a,
Shavonn Matsuda

¹⁵ Note: The italicized section varied depending on the information professional.

Appendix F: Interview Questions

Interview Questions (All participants)

1. When looking for information, who or what sources do you consult? [open-ended]
2. Please describe any problems you have encountered when searching for Hawaiian knowledge materials in library catalogs and/or digital repositories? [open-ended]
3. Please describe a time when using the Western classification systems for describing Hawaiian collection items was helpful and why. [open-ended]
4. Do you have any ideas about how Hawaiian knowledge materials might be better organized and/or described to help improve access for the Hawaiian community?
If so, what changes would you like to see happen? [open-ended]
5. Do you have any specific ideas about how a Hawaiian knowledge organization system should be organized? [open-ended]
6. Would you recommend starting with a particular topic or subject heading? Is there a topic that would most benefit by the application of a Hawaiian knowledge organization system?
7. Do you perceive any challenges to using a Hawaiian knowledge organization system? [open-ended]
8. In your opinion, who would be in charge of creating a Hawaiian knowledge organization system? Who would contribute to and/or coordinate its creation? [open-ended]
9. Are there any other barriers to accessing Hawaiian knowledge materials that you or others you know have experienced?

Appendix G: Supplemental Questions

The following are questions used in interviews with information professionals in addition to those listed above.

Staffing

1. Are you the primary staff member responsible for the library/archives catalog? If no, please note the title of the person responsible.
2. Is the staff member in charge of the knowledge organization system for physical materials also responsible for creating and editing the knowledge organization system for digital resources? If no, please note the title of the person responsible.

If you answered yes to the question above, what is their training and background?

- a. Does the staff member have a degree in Hawaiian Language, Hawaiian Studies or any related training/experience?
- b. How proficient is the staff member in Hawaiian language? No knowledge, few words or phrases, Beginner, Intermediate, Fluent

If you answered no to the question above, then are they trained differently? How?

3. Are non-cataloging staff responsible for cataloging materials? How about interns or volunteers?

Note – Using the term “cataloging” here because it is likely a more familiar word among information professionals. But, it is important to note that I am using it as a synonym for descriptive metadata (bibliographic records, finding aids, specialized indexes, etc.).

4. Do you prefer quantity (e.g., tagged by volunteers) or quality (tagged by librarians) in descriptive metadata? Please explain your reasoning.

Practice

1. What types of knowledge organization systems do you currently use for structuring indigenous knowledge materials in your organization?
 - a. Subject Headings?
 - b. Classification systems?
 - c. Others? (e.g. keywords or other controlled vocabularies)
2. Are there any specific materials or topics that have been difficult for you to classify or apply subject headings to?
3. Are there any collections that you feel are underused? Why?

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