# AN ETHNOGRAPHY OF A DIGITAL ARCHIVE: A USABILITY STUDY OF THE ARCHIVE OF THE INDIGENOUS LANGUAGES OF LATIN AMERICA

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Digital language archives are used for the preservation of documented language data, such as video and voice recordings, transcriptions, survey data, and ethnographic fieldnotes. This data is most often used for research and linguists and anthropologists are generally heavily involved in the creation of language archives. Ideally, Indigenous communities that are represented in the archives are also able to access their data, but this is not always the case, especially if poor internet access and lack of technological know-how prevent archive use. In addition, western epistemologies are embedded in archival logics, exacerbating the issues surrounding Indigenous access and pointing to the need for a decolonizing archival design that centers the needs of its users.

Using ethnographic research methods and a decolonizing framework, I conducted a usability study on the Archive of the Indigenous Languages of Latin America (AILLA) to uncover the cultural-based meanings that inform AILLA use. Using linguistics and anthropology listservs, I recruited research participants for a Qualtrics survey and conducted semi-structured interviews that explore the user perspective on AILLA. I analyzed AILLA's Google Analytics data and used qualitative and quantitative research methods to build upon the previous literature in user-centered design approaches to language archives. As one of the largest online language archives in the world, AILLA serves an important role in the language documentation and cultural revitalization movement. Continued research in the field of user-centered design and non-Western epistemologies is necessary to ensure the accessibility of language archives and for AILLA to fulfill its mission of support for the survival of the Indigenous languages of Latin America.

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By

Michael “Eden” Ewing

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## LIST OF ABBREVIATIONS

AILLA- Archive of the Indigenous Languages of Latin America

ELAR- Endangered Language Archive

IDS- Indigenous Data Sovereignty

OCAP- Ownership, Control, Access, and Possession

TLA- Language Archive at the Max Planck Institute for Psycholinguistics

UNDRIP- United Nations Declaration on the Rights of Indigenous Peoples

# CHAPTER 1

# OVERVIEW OF APPLIED THESIS PROJECT: THE ARCHIVE OF THE INDIGENOUS LANGUAGES OF LATIN AMERICA

## 1.1 Digital Language Archives

Digital language archives are used for the preservation of documented language data, such as video and voice recordings, transcriptions, survey data, and ethnographic fieldnotes. This data is most often used for research and linguists and anthropologists are generally heavily involved in the creation of language archives. There are some smaller, regional archives created for and by Indigenous communities, but that was not the focus of this project. For this thesis, I conducted research on large, online language archives such as the Archive of the Indigenous Languages of Latin America (AILLA), the Endangered Language Archive (ELAR), and The Language Archive at the Max Planck Institute for Psycholinguistics (TLA). Most of these larger, digital archives were created in the 2000s in response to increasing awareness in the linguistics community of the rapid loss of languages worldwide. Ideally, the communities that are represented in the archives are also able to access their data, but this is not always the case, especially if poor internet access and lack of technological know-how prevent archive use.

In addition, Indigenous community members who are represented in these archives are often not involved in the process of archival design, which exacerbates some of the problems surrounding Indigenous access. Western academics with their Eurocentric worldviews are often unaware of or ambivalent to Indigenous epistemologies and data management. For example, archival materials may sometimes not be appropriate for Indigenous users, whether it is because these materials are removed from their Indigenous, cultural-based context or that they contain traditional knowledge (TK) that communities may not wish to share (Brown, 2007; Henke and

Berez-Kroeker 2016; Wasson et al. 2016). All this points to a need for collaboration with Indigenous communities among archivists designing endangered language and Indigenous cultural heritage archives.

## 1.2 Anthropology and Archives

Anthropology's collaborative, people-centered approach to research makes it the ideal discipline for the study of archive use and can help improve their accessibility from the user perspective. Anthropology seeks to understand the "how" and "why," using ethnographic research methods to uncover these underlying perspectives and cultural values that reveal deeper meanings about human behavior. To that end, using ethnographic research methods to uncover patterns in archive use, anthropology can reveal the human perspectives that inform how users engage with archives. This understanding can be an incredibly powerful tool that drives the design of archives in the context of the user's lived experience and understandings of how archives work.

## 1.3 AILLA User Groups

Although every research participant in this study was accessing AILLA for their own research projects, whether personal or academic, all of them interacted with AILLA in similar ways. Researchers engaged with the archive by depositing materials and using materials in the archive for research. In the case of Indigenous community members, materials from the archive were sometimes used for the purpose of language and cultural-based revitalization. Non-native linguists and anthropologists sometimes aid them in this process. During this project, several of my participants discussed collaboration with Indigenous communities for the creation of pedagogical materials for language revitalization. One participant mentioned teaching other Indigenous members of her community to use the archive so they could find data that had been

collected from them. Each of these could be considered a different AILLA user group that sometimes interacts with one another through their use of AILLA, acting as a network of overlapping user groups. Although it is likely that there are more, my project revealed the existence of at least two main user groups:

- Researchers like linguists and anthropologists
- Non-academic Indigenous community members

An article written by Wasson et al entitled "Bringing User-Centered Design to the Field of Language Archives," also identified researchers and Indigenous communities represented in language archives as user groups. There may also be factions within a user group, in addition to some users belonging to multiple user groups, such as when Indigenous community members are also linguists or anthropologists (Wasson et al., 2016). The challenge for AILLA, like other, large language archives, is for its user interface and its digital materials to be accessible to all user groups.

## 1.4 Client Background

The Archive of the Indigenous Languages of Latin America (AILLA) at the University of Texas at Austin (UT) is a free-to-access, online language archive that houses digital artifacts relevant to the endangered languages of Latin America. It provides a virtual space for linguists, anthropologists, ethnographers, and other scholars to archive their documented materials, learn from the collection, and for Indigenous communities to utilize their resources for the purposes of language revitalization, language maintenance, and other cultural-based projects. The archive was established in 2000 and holds thousands of materials representing over 300 languages in its collection.

AILLA is part of the UT Austin library system with a digitization laboratory and office

housed at the Teresa Lozano Long Institute of Latin American Studies (LLILAS) Benson Latin American Collection. AILLA's holdings include language documentation materials such as video and audio recordings, many of which have been transcribed and translated into Spanish, Portuguese, and English. Their language documentation materials also include dictionaries, grammar guides, ethnographies, word lists, and field notes. In addition, the archive holds teaching materials for bilingual education and language revitalization for Indigenous communities to use. According to their website, AILLA's mission "is to preserve these materials and make them available to Indigenous Peoples, researchers, and other friends of these languages now and for generations to come" (The Archive of the Indigenous Languages of Latin America, n.d.).

The opportunity to pursue this project with AILLA was facilitated through my advisor, Christina Wasson, and her friendship with Susan Kung, AILLA's archive manager. Susan expressed interested in learning more about AILLA's users and their motivations behind AILLA use. Susan has limited control over AILLA's interface, however, and was not interested in a study that focused solely on the user interface. Although I did touch upon issues with the interface expressed by some of my participants, that was not the focus of this project. Together, we decided to center the project on the user and the cultural-based meanings that inform archive use. Despite the wealth of material represented in the archive, AILLA has very little information on its users. Aside from Google Analytics and the occasional anecdote from users who contact Susan, demographic information on AILLA's users, why they interact with the archive, and how they use their resources is limited. AILLA's mission is threefold: preservation, accessibility, and community support. Under "accessibility," the website says it is "especially dedicated to making the collection available to members of Indigenous communities in Latin America." However,

without information on the archive's users, it is impossible to know if that mission is being realized.

Thus, the intent of this ethnographically informed study was to learn more about who uses the archive, their motivations behind AILLA use, and how the materials that they access are being utilized. By understanding different AILLA user groups, the archive will be better equipped to provide for communities of Indigenous peoples who use their materials to revitalize their languages, literature, and cultural practices and the academics who use AILLA's resources for research. Furthermore, understanding its user groups will also allow us to better understand how successful AILLA has been at fulfilling its mission, along with how it can improve accessibility and community support in the future.

In addition, there are two other digital language archives with extensive Latin American Indigenous collections: ELAR and TLA. A comparison among users of the three language archives will be useful in understanding which archive is most likely to be used for what purpose, along with information on how users utilize archived materials in other repositories. Also, understanding why a user might choose one archive over another will provide AILLA with key information on how to improve its ability to provide community support and to improve accessibility. Thus, my research questions were as follows:

1. Who are AILLA's main groups of users?
2. What are their motivations behind AILLA use?
3. How do these groups use AILLA's resources?
4. Are there differences in use among different user groups?
5. Is it common for users to access more than one archive?

## 1.5 Deliverables

A written report of my findings, based on my analysis of AILLA's Google Analytics account, an online survey, and semi-structured interview data was delivered to Susan Kung in the form of a white paper after the completion of the project. In it, I described my research methodologies, analysis, and recommendations based on extensive ethnographic research and the use of qualitative and quantitative research software. During an email exchange, Susan shared with me that AILLA would be the next digital repository that the Library IT department migrates to a new software and that this was exactly the sort of data that she needed. She was currently in the middle of preparing a report for the library administration to justify the need for a Portuguese interface, as well as faceted and advanced search options, and believed that my data would be useful.

Later, we had a Zoom call to discuss my findings. Parts of the conversation centered around Indigenous data sovereignty and its importance, even though it is incredibly difficult to fully implement in a system like AILLA. We also discussed my finding that participants were not seeing the FAQ page and that many of the answers to my participants' questions could have been found there. I recommended that the link to the FAQ page be placed at the top of the page. She seemed to agree and stated that she would investigate seeing if she could do that herself from the backend. Another recommendation, spontaneously thought of during our conversation, was to implement a feature in which Portuguese researchers can request materials' description of metadata be translated. This would allow AILLA to translate materials as needed, which would reduce the extraordinarily expensive and impossible task of translating all of AILLA's materials at once. The primary use that my report will be used for, however, is to justify the need for a Portuguese interface.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Introduction

The purpose of this literature review is to contextualize my thesis project within the broader scope of research on Indigenous language revitalization, language ideologies, design anthropology, Indigenous data sovereignty (IDS), non-Western research methodologies, and attempts at decolonizing archival materials. As an online archive that hosts Indigenous language and ethnographic research material in its repository, themes of colonialism, postcolonialism, and decolonization are present throughout the literature review. This thesis project builds on this literature by taking these concepts and theories and carrying them forward through an in-depth ethnographic user study of an existing language archive.

Although the literature on user ethnographies of endangered language and cultural heritage archives is sparse, there were some important developments in the field that must be mentioned in this review of the literature. In 2016, Christina Wasson, a linguistic anthropologist at the University of North Texas (UNT), and Gary Holton, a linguist at the University of Hawaii at Manoa, co-organized a National Science Foundation-funded workshop on user-centered design and language archives at UNT. During this workshop, key stakeholders such as archive managers, academic users, and Indigenous users shared their perspectives, which pointed to the need for a user-centered approach to archival design (Wasson et al., 2016). The workshop revealed that the needs of most users were not being met, including both Indigenous and non-Indigenous researchers and community members. It showed that a user-centered approach, driven by a praxis rooted in participatory design and design anthropology, could mitigate many of the problems that users face when accessing digital language archives.

Another key outcome of the UNT workshop was the development of a typology for language archives (Wasson 2021). These are:

- Global archives
- Regional archives
- Embedded archives
- Community archives
- Elder archives

Using this framework, AILLA is a regional archive because of its Latin American focus. ELAR and TLA are global archives. Most of the archives using the Mukurtu CMS platform are likely small, community archives.

Two other projects were conducted that bear mentioning: a user research project on the CoRSAL archive and a community-based archival project in Northeast India, both of which were conducted by Christina Wasson as part of a team of researchers seeking to build a language archive that meets the needs of its users (Wasson et al. 2018; Wasson 2021). Both projects demonstrated how the theories present in this literature review can be developed into an anthropological praxis that informs language archive design.

It is my hope that this project contributes to the growing body of literature on the use of anthropological research methods to improve upon and create user-friendly archival design. In this thesis, I describe the methods and findings of an in-depth ethnographic usability study of a large online language archive. Through this project, I provide a case study of an ethnographic research project that can be generalized and used for future user research studies on language archives, much in the same way that Wasson et al. did with their project to build a community-

based archive for four Indigenous communities in Northeast India (discussed later in this chapter).

Lastly, it is important to note that my positionality as a white settler from the United States and whatever implicit biases I have as a result likely had an impact on this paper. To the best of my ability, I have tried to remain aware of my positionality and how that impacts my ability to think about these topics while conducting research. Thus, I draw heavily from postcolonialism, subaltern studies, and decolonizing theory as lenses through which I explore the topics present in this paper.

## 2.2 Language Revitalization and Language Ideologies

Linguists, anthropologists, and Indigenous community members often use materials stored in language archives such as AILLA, ELAR, and TLA for the purpose of revitalizing language and traditional cultural practices. Understanding language ideologies, defined by Margaret Field and Paul Kroskrity as “beliefs and feelings about language and discourse that are possessed by speakers and their speech communities,” is essential for researchers and teachers when working with Indigenous communities on language revitalization or revival projects (Field and Kroskrity 2009, 4). These beliefs are often very complex, sometimes contradict one another, and can vary widely among different language communities. These complexities and contradictions are often present even within a single language community, as shown by Nora England’s work on Mayan language ideologies with the K’ichee’ language and the Achi community who insisted that their language was distinct from K’ichee’ (England 2003, 739). This, even though many linguists agreed that the Achi community’s language was another dialect of K’ichee’. This tension over how to define their language was highly political, a result of

hundreds of years of separation between the two communities during the Spanish colonial period from 1519 to 1821.

All cultures possess language ideologies, but hegemonic language ideologies, common in settler-colonial states, push minority languages to the margins and create stigmas surrounding their use. For Indigenous languages, there is immense pressure from neighboring languages, especially from larger colonial ones, that discourage Indigenous speakers from maintaining their heritage languages. Numerous examples of this exist all over Latin America from the Mayan people in Mexico, Guatemala, Belize, and El Salvador to the Quechuan people in Ecuador, Bolivia, Chile, Colombia, and Argentina.

Language ideologies of the dominant culture, either because they do not understand Indigenous language ideologies or because of an "ideology of contempt" that regards small languages as inferior, can have a devastating impact on the language ideologies of small language communities (Dorian 1998; Field and Kroskrity 2009). In *Native American Language Ideologies*, Field and Kroskrity state that "the hundreds of Indigenous languages spoken in the Americas… were all consciously undermined by colonial regimes… whose goal was nothing less than total cultural and linguistic assimilation" (Field and Kroskrity 2009, 12). Although Europe has been trending towards multiculturalism and multilingualism for some time now, its imperial past still impacts the language ideologies of Indigenous people that suffered under colonialism (Doran 1998, 19). Across the world, especially in countries with a history of settler-colonialism, many Indigenous people feel that they must learn the dominant language to improve their job prospects and because the dominant language is associated with prestige. This "ideology of contempt" can result in language shift, a process in which a speech community shifts to the dominant culture's language.

In addition, factions among language communities can cause tension among and between different language communities in their attempts at language revitalization or language revival (Dorian 1994; England 2003; Field and Kroskrity 2009). In her article "Purism vs. Compromise in Language Revitalization and Language Revival," Dorian defines purism as an uncompromising attachment to older forms of a language, while compromise accepts that some changes to a language may be more likely to ensure its survival. For example, in the case of Arabic and Hindi, Dorian says that "purism can be seen to represent a form of conservatism, a harking back to favored forms or styles of earlier times" (Dorian 1994, 480). However, this purism is not representative of the community at large, "but rather those of a small segment of it: an educated elite of teachers, writers, broadcast journalists, intellectuals, and the like" (Dorian 1994, 480). This tension was also present in Guerrettaz's ethnography of a Mayan language course, in which native speakers of Maya were taking beginner Maya classes because they did not know how to write in standard Maya (Guerrataz 2015, 175-176). In her ethnography, many of the Maya language teachers were not native speakers of Maya. However, this written, older form of Maya had prestige over the version spoken by the actual language community.

Researchers studying language documentation and collaborating with Indigenous communities in revitalization work need to be aware of language ideologies and the tension that these can create both in and outside of speaker communities, especially if they plan to upload these materials into online language archives like AILLA. It is important that language material is culturally relevant to communities that may use them and that researchers recognize the imbalance of power inherent in a system in which mostly white academics are writing about Indigenous communities.

## 2.3 Decolonizing Methodologies and Indigenous People

As mentioned in the last section, linguists and anthropologists have a disproportionate amount of power regarding the Indigenous communities they work with and claim to represent through their research. There is a growing body of literature that breaks apart this power imbalance and seeks to champion Indigenous perspectives as just as valuable and valid as Western viewpoints, perhaps even more so regarding research on Indigenous peoples. Linda Tuhiwai Smith and Scott Lauria Morgensen, for example, critique academia as a neo-colonial institution that primarily centers white, Eurocentric worldviews and is either ambivalent to or openly hostile to Indigenous epistemologies (Morgensen 2012; Smith 1999). To many Indigenous peoples, academic institutions are regarded as elite, privileged, and toxic to Indigenous perspectives. Indigenous students face immense difficulty navigating the academy in two ways: proving that their Indigenous epistemologies have value and having to confront the historic traumas that stem from colonialism. Smith claims that, for Indigenous peoples, "there are distinctly different ways of thinking about and naming research," and that, "as part of the self-determination agenda," Indigenous people "engage quite deliberately in naming the world according to an Indigenous world view" (Smith 2006, 127-128. Indigenous researchers and students use decolonizing methodologies to "talk up" to Western epistemologies and colonial power structures inherent in academic institutions (Smith 2006, 226).

In Smith's book, *Decolonizing Methodologies*, she critiques Western research as a colonial, Western-European lens through which white academics view the world. She calls this research "through imperial eyes," a lens that "assumes that Western ideas about the most fundamental things are the only ideas to hold" (Smith 1999, 58). In addition, she critiques the scientific paradigm of positivism used in the social sciences. According to Smith, "positivism

takes a position that applies views about how the natural world can be examined and understood to the social world of human beings and human societies" (Smith 1999, 44). Like Smith, Morgensen also believes that academia perpetuates colonial ideologies. As a white professor of critical race, Indigenous, and settler-colonial studies and as a member of his university's ethics review board, he critiques the colonial structures of academia and their lack of support for Indigenous research, even as universities move toward inclusion and reconciliation. He claims that Indigenous methodologies expose "normative knowledge production as being not only non-Indigenous but colonial" and that Indigenous knowledge production works to "denaturalize power within settler societies and ground knowledge production in decolonization" (Morgensen 2012, 805). Thus, the pursuit of decolonization informs Indigenous methodologies and seeks to dismantle systems of power that uphold colonial knowledge production.

In addition, many Indigenous people feel that they need to enter academia to dismantle the colonial power structures that subjugate Indigenous peoples. For example, Smith writes that many Maori feel that they must gain the Western academic qualifications needed to conduct research because Indigenous perspectives are often treated with scorn or outright hostility. Some Indigenous research institutions have been developed to address the failure to recognize Indigenous epistemologies in the academy. Smith, for example, became one of the joint directors of the Maori Centre of Research Excellence, their initial goal being to create 500 Maori with PhD qualifications within five years and "to connect Indigenous researchers to each other across disciplines and institutions; communities to researchers; and Indigenous research to Indigenous development" (Smith 2006, 135). However, we still have a long way to go before this is the norm, so professors must be advocates for Indigenous students and support them in their use of Indigenous research methodologies.

Furthermore, Smith claims that “the first task of many researchers is to survive and do exceedingly well in an education system that denies the existence of the knowledge held by their own peoples” (Smith 1999, 222-223). They must perform well and often better than their peers to reach academia’s higher levels. According to Smith, “one of the most difficult academic arguments for Indigenous scholars to make has been the very existence of Indigenous knowledge as a unique body of world knowledge that has a contribution to make in contemporary disciplines and institutions” (Smith 1999, 223). They must navigate an institution that is dismissive of their traditional knowledge, while also struggling to find journals that will publish their work. Smith writes that “research exists within a system of power” and that Indigenous work conducted by Indigenous researchers “has to talk back to or up to power” (Smith 1999, 226). Academia plays a significant role in upholding white supremacy and the dominating force of Western intellectual superiority. To combat this, both Indigenous and non-Indigenous researchers can work together to combat unequal power structures that subjugate Indigenous faculty and students and treat their epistemologies as somehow inferior. This also holds true for the necessity of Indigenous collaboration on the development of online, Indigenous language archives and digital heritage spaces on the internet. “Research exists within a system of power,” one in which mostly white researchers dominate and control knowledge production, and Indigenous people have little control over the research that impacts their communities (Smith 1999, 226).

## 2.4 Indigenous Data Sovereignty

Although the literature on Indigenous Data Sovereignty (IDS) and how it related to large language archives like AILLA is sparse, it is important to understand IDS and its potential implications for archives like AILLA, ELAR, and TLA. IDS is, broadly speaking, an

Indigenous-led movement to develop Indigenous-owned data infrastructures and control over research and data about their communities. Regarding non-Indigenous led language archives, Western researchers hold all rights over the data stored in these repositories. First Nations Communities in Canada pioneered the modern Indigenous Data Sovereignty movement with their OCAP model: Ownership, Control, Access, and Possession (Lovett, et al 2019, 29). According to an article by the First Nations Information Governance Centre, the OCAP was created “as a political response to colonialism and the role of knowledge production in reproducing colonial relations” (First Nations Information Governance Centre 2014, 6). These concepts have also inspired other Indigenous groups across Canada, such as the Inuit through their National Inuit Strategy on Research that “establishes Inuit ownership, control, and access with respect to Inuit data and information” (Lovett, et al. 2019, 29). Similar movements have taken hold in the United States with the US Indigenous Data Sovereignty Network and in Australia with the Maiam nayri Wingara Aboriginal and Torres Strait Islander Data Sovereignty Collective. Indigenous Data Sovereignty is now a widespread movement and policies are continuously being updated as new research is conducted and new technologies change the information landscape. Indigenous peoples want control over their data, despite Western epistemological differences in research, data, and archival standards. At the user-centered design and language and culture archives workshop, Michael Shephard offered a thoughtful reflection.

> Archives are sites of struggle for power, control, access, and ownership. Language communities wish to exercise sovereignty over their cultural and linguistic heritage. Some forms of knowledge may not be appropriate to share. (Wasson et al 2018, pg. 661)

Data collection and analysis, like academia, is framed by a Western epistemological framework that has been shaped by colonialism and white supremacy. In addition, Indigenous people have often been the victims of exploitative and intrusive data collection and misuse, so

tribes are moving toward protective measures that safeguard their sovereignty and self-determination. One notable example of misuse is the Havasupai case, in which a researcher from Arizona State University violated informed consent and misused genetic materials that had been previously collected from the tribe for a different study (Lovett, et al. 2019, 28-29). The tribe filed a lawsuit and genetics research was banned at Havasupai and several other tribal communities. Their trust was violated, and tribal laws were put in place to prevent future exploitative research. There are numerous other examples of data misuse which point toward the necessity of the Indigenous Data Sovereignty movement. In response to past abuses, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) states that Indigenous people have the right to sovereignty, to determine strategies for their own development, and to have the diversity of their cultures and traditions reflected in higher education (Wilks et al. 2018, 12). Although exploitation still exists, some researchers are moving towards decolonization in research and data. However, due to a lack of trust in Western academic institutions, much of the work in decolonizing data is in relationship building with Indigenous peoples to promote participatory and collaborative research models (Wilks et al. 2018, 12).

In addition, Indigenous communities worry that quantitative data can be used to hurt them (Davis 2016; Lovett et al.; First Archivists Circle; First Nations Information Governance Centre; Pool 2016). After a workshop on data and research on Indigenous peoples, Megan Davis, the ex-chair of the United Nations Permanent Forum on Indigenous Issues, wrote that "Indigenous participants were concerned that statistics, 'although seemingly neutral,' could be applied for the benefit and the detriment of Indigenous peoples" (Davis 2016, 31). For example, in the 1970s, a study on alcoholism in an Alaskan First Nations community in Barrow released unfavorable findings at a university press conference. This resulted in "internal stigmatization by

people from Barrow and nearby Alaskan communities" and "in the devaluation of the municipality's Standard and Poor bond rating" (First Nations Information Governance Centre 2014, 8). Due to past abuses in research and misuse of data on Indigenous people, there is an understandable lack of trust toward government, research, and academic institutions among First Nations communities. Only Indigenous people know what sort of research will benefit them and their communities need to be involved in all aspects of the research process. A United Nations report stated that it is imperative that Indigenous people are involved "in the full range of work concerning data collection, such as planning, collecting, analyzing, and report writing" (Davis 2016, 29).

Indigenous ownership of data is another key component of the Indigenous Data Sovereignty movement. First Nations communities have many concerns regarding the use and dissemination of data that impacts them. Research has been conducted without Indigenous collaboration and that did not have First Nations priorities at heart. Data has also been collected and distributed without First Nations knowledge or consent. Researchers have profited off First Nations data and used it to further their academic or private sector careers. One notable case of Indigenous data profiteering was when Brogan, Inc., a consulting and analysis firm, received data from the non-insured health benefits database (NIHB) controlled by Health Canada and sold it to pharmaceutical companies for research (First Nations Information Governance Centre 2014, 9). As a result of these abuses, institutions and policies such as the Unama'ki Client Linkage Register (UCR), the First Nations Information Governance Centre (FNIGC), and the Tui'kn Partnership have been established to uphold OCAP principles and to allow First Nations communities to be stewards of their own data.

Furthermore, Western intellectual property and copyright laws do not protect traditional

Indigenous knowledge, and in some instances, repatriation of traditional knowledge is an issue for Indigenous communities. According to the First Archivist Circle, “existing copyright legislation does not address issues of significance to Native American communities such as: community ownership of works and management of rights” and, “in some cases, Native American knowledge has been copyrighted by outsiders without appropriate permissions or approval” (First Archivists Circle 2006). Regarding Western intellectual property law, the copyright is typically given to the researchers and not to the community and only provides a limited timeframe for protection. Henke and Berez-Kroeker state that “the rules of intellectual property, although set by international standards, often conflict with customs of traditional indigenous groups” (Henke and Berez-Kroeker 2016, 422). For these reasons, Indigenous communities may wish to limit access or request an embargo on certain materials. According to the authors of “Public Access to Research Data in Language Documentation,” researchers can look to archivists to “provide guidance and training on informed consent for archiving as part of creating a data management plan” (Seyfeddinipur et al. 2019, 555). If a community calls for restricted access to culturally sensitive or potentially damaging information, that must be respected. Here, researchers and archivists can collaborate with Indigenous communities to ensure that their needs are met. Participation and collaboration between Western researchers and Indigenous communities is important for overcoming the colonial realities of academia, maintaining ethics in research, and ensuring the voices of communities with different worldviews and epistemologies are heard.

## 2.5 Decolonizing the Archive

Western epistemologies shape how researchers interpret the world around them. This influences the indicators and categories that academics and information professionals use to

organize data. Thus, demographic categories are often not culturally appropriate for Indigenous communities and may not properly reflect Indigenous social realities. In his "Indigenizing Demographic Categories: A Prolegomenon to Indigenous Data Sovereignty," Frances Morphy highlights an example in which Western categorizations do not apply to research participants from the Global South. He states that researchers from the Global North often choose different age groups for ethnographic research based on perceived social economic truths that do not exist for all societies (Morphy 2016, 102). For example, that being under the age of eighteen years in certain cultures does not imply that the child is school age, does not work, or lives with their parents (Morphy 2016, 103). In some cases, Western norms of chronological age may not be an accurate way to measure dependency (Morphy 2016, 103-104). More accurate data could be supplied by the community itself and more appropriately represent local understandings of cultural norms. This is also true for descriptive metadata when working with Indigenous peoples and archiving traditional knowledge or heritage languages.

In addition, current demographic categories on Indigenous peoples are underpinned by the white supremacy and colonialism of the settler states. Ian Pool, an emeritus professor and research associate of the National Institute of Demographic and Economic Analysis (NIDEA) at the University of Waikato, wrote that the hegemonic data systems of settler states dominate and demonize Indigenous data systems and knowledge structures through colonialism and postcolonialism. He claimed that the imperial project needed data to control the Indigenous populations of the places that empires colonized. Like Smith, Pool claims that Indigenous worldviews are treated with disdain. He writes that "imperialists imported data methodologies, smugly assuming that epistemologies other than Euro-North American ones were inferior" (Pool 2016, 62). Demographic data during the colonial period was often used to subjugate the

Indigenous people into a caste system and for the labor needs of the British empire (Cordell et al. 2010; Kukutai 2011, 2012). According to Pool, “Victorian epistemologies were underpinned by racist theories” (Pool 2016, 64). He paraphrases Belich in saying that “polygenism saw humanity divided into groups that were racially distinct—with European superiority a given” (Pool 2016, 64). Early social sciences, such as anthropology and psychology, were also characterized by scientific racism. To redress these wrongs and prevent further harm, Indigenous peoples need to be involved in data collection, research, and the description of archival materials.

Current metadata standards such as the Dublin Core are also mostly insufficient for the description of Indigenous traditional knowledge and languages. IDS recognizes that Indigenous peoples need to be involved in every step of the research process, including in data collection, analysis, and description. Only Indigenous peoples know what sort of research will benefit their communities and have the right to determine what they need. Non-Indigenous researchers conduct research through “imperial eyes,” a specific Western epistemological framework that decontextualizes traditional Indigenous knowledge and results in what is often incorrect information about Indigenous peoples and their histories (Smith 1999, 58). This points to a need for non-Indigenous researchers and information professionals to collaborate with Indigenous peoples in the research process and creation of metadata for archived materials.

According to Montenegro, “Indigenous people have historically been excluded from the decision-making processes that determine what information from and about them should be collected, who should father that information, and who should manage it, document, describe and interpret it, and who should have access to it” (Montenegro 2019, 733). The inclusion of Mukurtu Core into Mukurtu CMS is one way to address the issue of metadata regarding Indigenous peoples, in that it adds additional fields to current metadata standards such as

"Cultural Narrative, TK, and People" (Montenegro 2019, 735). In his critique of standards, Montenegro says that "every successful standard imposes a system that describes and organizes knowledge according to the values of the institution in which those standards are being deployed and as a consequence, they form a juncture of social organization, moral order and layers of technical integration" (Montenegro 2019, 736). To overcome the restrictions imposed by Western archival practices, new metadata standards such as the Mukurtu Core will have to be created in collaboration with Indigenous communities to ensure their data needs are met.

In addition, traditional knowledge and objects can lose their significance when removed from Indigenous spaces. Dierdre Brown, a professor at the University of Auckland in New Zealand, argues that meaning and culturally specific context can be also lost when displaying Maori heritage in non-Maori spaces. This is in reference to her chapter in the book *Theorizing Digital Cultural Heritage*, in which she writes about problems using augmented reality (AR) and virtual reality (VR) in digitally displaying Maori heritage in museum environments. When planning projects such as these, careful consideration, planning, and collaboration with Indigenous communities is key to culturally appropriate design. However, Brown argues that it may be better "for Indigenous people to appropriate AR and VR for their own purposes before the technologies are applied to them, and their culture, by another group" (Brown 2007, 78). Brown also claims that digital heritage can be beneficial for repatriation and diasporic Maori virtually reconnecting with their cultural heritage. Trilsbeek and Koenig also write about collaboration with Indigenous communities in virtual spaces in their article "Increasing the Future Usage of Endangered Language Archives" (2014). Like Brown, they write about Indigenous community members using technology to archive their languages and traditional

knowledge, such as the Endangered Languages Project and smart phone apps like *Ma! Iwaidja* and *Aikuma.*

The archival phase that we are in today, which is reflected in the literature on archives more generally, is the push towards community-oriented archives and participatory models.

> While non-Native linguists have led the development of large online language archives, Indigenous communities have been developing their own archives. (Wasson 2021, 1)

Mukurtu CMS is one such platform that is widely used for participatory archival design and community-oriented archives. According to Wasson, it "follows a different logic from most archives," in that it "allows communities to restrict access to materials according to customizable criteria, such as gender, age, or family" (Wasson 2021, 7). Principles of IDS and its framework of Indigenous control over data, including traditional knowledge (TK) that the community may not wish to share with the broader community, is important for western archivists to keep in mind as they work with Indigenous communities. Platforms like Mukurtu CMS have great potential for collaborative archiving that gives Indigenous communities more control over archival design and the content held in the archive. Some examples are the Plateau People's Web Portal, Voices of Amiskwaciy, and the Passamaquoddy People archives, all of which use Mukurtu CMS. Mukurtu also has the potential for Indigenous communities to take control of the archiving process, rather than relying on western researchers to take the initiative on these projects.

Critical reflections on archiving in the context of Indigenous communities are also taking place. Collaboration between researchers and research participants is increasingly becoming the norm, which can decrease ethical issues related to the archiving of Indigenous data. Ongoing informed consent needs to be normalized and researchers ought to collaborate with Indigenous participants in archiving data, along with having conversations about data that may need to have

restricted access. In other words, participatory models of language documentation, ethnographic research, and archiving blur the lines between researchers, research subjects, and archivists. Collaborative models encourage active participation from speech communities to create a mutually beneficial relationship between researcher and research participant, along with addressing potential ethical issues related to the researcher having too much power over data.

## 2.6 Design Anthropology

The main themes reflected in the literature on design and design anthropology are the importance of collaboration and the user's perspective, along with the holistic approach of the anthropological perspective. In chapter one of the book *Routledge International Handbook of Participatory Design,* Robertson and Simonsen define participatory design as "a process of investigating, understanding, reflecting upon, establishing, developing, and supporting mutual learning between multiple participants in collective reflection-inaction" (Robertson and Simonsen, 2013, 2). The authors point to the civil rights movements of the 1960s and 1970s, along with the workplace democracy movements in Scandinavia as the locus from which participatory design spread (Robertson and Simonsen 2013, 1-2). Thus, participatory design is about involving the users of technology, especially workers, in the design process. Throughout the book, certain core principles are emphasized such as mutual respect for different kinds of knowledge, the need for mutual learning between users and designers, and "empowering people to define and direct the technologies that affect their lives" (Blomberg and Karasti 2013, 89). Naturally, anthropologists are well-suited for the sort of work that seeks to understand the user's perspective and to place use in context with the social realities of the user.

Throughout the literature, anthropology and ethnographic research methods are highlighted for their unique perspective and contributions to the design process. Blomberg and

Karasti state that ethnography, as part of the design process, includes “studying phenomena in their everyday settings” and emphasizes “the need for a reflexivity that entails more attention to the users’ perspectives on the participatory design projects in which they participate” (Blomberg and Karasti 2013, 88-102). This lens positions the anthropologically trained ethnographer as a source for potential insights that drive design and places it in the context of users’ present realities. According to Wasson and Squires, the most fundamental contribution is that the anthropological perspective counters what they call the “universalist globalization logic,” which is the idea that the same product can and should be sold all over the world (Wasson and Squires 2012, 253). In other words, anthropologists consider the cultural contexts that determine how and why other cultures may use a product, such as archives, or if they will use it at all. Anthropologists work with local research participants and involve them in the process of design to create products that are culturally appropriate and more likely to succeed, especially in non-Western markets. Thus, anthropologically informed ethnographic research can be a unique and powerful tool during the design process.

Design anthropologists have also begun to involve themselves in the design of digital archives. Christina Wasson, Kim Christen, Michael Shepard, and Dierdre Brown are particularly notable in this regard; they have been working with Indigenous communities to design archives that meet the needs of this user group. Indigenous participants at the “User-Centered Design of Language Archives” workshop at the University of North Texas expressed several ways in which archival design can better serve Indigenous communities: 1) making content more engaging for Indigenous community members, 2) allowing users to annotate language archives, and 3) allowing Indigenous users to deposit materials in language and cultural-based archives (Wasson et al 2016, 663-664). Wasson stated that:

> Participatory design may be the most appropriate approach for archive development because it recognizes and honors the sovereignty of the Indigenous peoples whose materials are included in an archive. It is in line with the principles of Indigenous data sovereignty. (Wasson 2021, 2)

In addition, holding space for these Indigenous perspectives and allowing these collaborative relationships to guide archival design can help create archival interfaces that meet the needs of both academics and Indigenous communities.

An exciting development in the field of design anthropology and participatory design in language and cultural heritage archives was a research project that took place in Northeast India by some researchers at the University of North Texas. Starting in 2018, Wasson and her research team led a participatory design project with the Lamkaang and Anāl in Manipur and the Dimasa and Bodo communities (Wasson 2021). All four communities were experiencing declines in language and cultural practices. One goal for the project was to develop a collaborative relationship with the communities and to use Indigenous Data Sovereignty as a framework for research and design.

Christina Wasson and her research team also conducted user experience research for the Computational Resource for South Asian Languages (CoRSAL) archive in 2016. Their user research revealed 4 distinct user groups: linguists, computational linguists, depositors, and language communities. Their findings demonstrated how powerful it can be to use design anthropology and participatory design in the development of a language archive, especially regarding its ability to uncover distinct user groups, cultural practices that inform use, and make design recommendations that meet the needs of each user group. In addition, the fields of linguistics and anthropology have a history of reinforcing colonial relationships in research, particularly in research among Indigenous language communities. Wasson et al. state that a significant contribution to the field of design is anthropology's "concern with power," that

"anthropologists tend to regard power as a central dimension in any social or cultural process" (Wasson et al. 2018, 237). This case study is a good example of design anthropology's ability to conduct research through a lens that seeks to uncover power imbalances or other inequalities during the design process.

Western academia often does not respect Indigenous epistemologies and centers around white perspectives. It is important to keep in mind that, as western academics, this also applies to our own research. To combat this, western researchers, including anthropologists, linguists, user experience (UX) researchers, and other ethnographers, must keep in mind their positionality as citizens of the imperial core and the disproportionate amount of power they often have over their research participants, especially in the case of Indigenous language and culture archives. Building collaborative relationships with Indigenous communities and fostering Indigenous sovereignty in archival design can help counteract this power imbalance. Design anthropology and participatory design are tools that be used to address colonial relationships and build more equitable archival designs.

## 2.7 Conclusion

For the construction or re-imaging of how online language archives work in relation to their users, a participatory design embedded with anthropological methods and insights is invaluable. This is especially true if our goal is to create language archives that are accessible to users outside of certain disciplinary backgrounds such as linguistics or anthropology. According to Wasson, ethnography in design is the "act of observing naturally occurring consumer behaviors" and the "need to analyze those behaviors and situate them in their cultural context" (Wasson 2002, 87). The focus on the user in the design process makes ethnography uniquely positioned to provide useful insights into the social and cultural values that shape consumer

behavior. This has powerful implications for the potential of design anthropology and ethnography in the design of language archives. Design anthropology and ethnography, informed by an anti-imperialist and decolonizing lens, used as part of the design process of language archives could create accessible tools for all its user groups, including marginalized Indigenous language communities who are often left behind in the design process.

# CHAPTER 3

# RESEARCH DESIGN AND METHODOLOGY

## 3.1 Research Design

The research for this project was designed with the idea of using qualitative ethnographic research methods for data collection and analysis. The intent of this project was to gain a glimpse into the "how" and "why" behind AILLA use, in addition to learning more about the different user groups that access the archive. Although I initially intended to do in-person fieldwork, the COVID-19 pandemic prevented any sort of travel to a field site. Using an online Qualtrics survey, I recruited participants for virtual semi-structured interviews. Unfortunately, Susan Kung's and my initial plan to have the Qualtrics survey appear as a pop-up on AILLA's website did not materialize due to the pandemic and the strain on the IT department's resources. Instead, we used AILLA's announcements page and social media presence to promote the survey. I did not, however, have much luck in terms of survey response and semi-structured interview recruitment with this method, and decided to post the survey on anthropology and linguistics listservs, as well.

The methods used for this project were an online survey, semi-structured interviews with users, semi-structured interviews with archive staff, and an analysis of AILLA's Google Analytics data. Google Analytics provided a global dataset on where users are from and how users accessed the archive, along with how many users accessed AILLA during the study's timeframe. The online survey was used for recruitment for semi-structured interviews, along with a sample size comparatively larger than the semi-structured interviews for quantitative analysis and understanding archive use. The semi-structured interviews were used to analyze the data and discover patterns and themes that led to personal narratives of use. Some of these

narratives revolved around information on AILLA's strengths and weaknesses, along with areas in which AILLA could be improved. By using these methods, I was able to move from a broad, global analysis of AILLA users to personal narratives with the online survey and semi-structured interviews.

### 3.2 Online Survey Recruitment

At the beginning of the project, Dr. Susan Kung and I had planned for a pop-up link to the survey on AILLA's website. This likely would have resulted in a far more diverse group of AILLA users, both in the survey and as research participants for the semi-structured interviews. Unfortunately, the IT department at the University of Texas libraries was busy and understaffed due to the COVID-19 pandemic. To continue with the project, we decided to place a link to the survey under the announcements section on AILLA's website and to use AILLA's social media presence to promote the survey. In addition, the following listservs and organizations were utilized for survey promotion:

- SALSA (Society for the Anthropology of Lowland South America)
- The Association for Linguistic Typology (Lingtyp)
- Linguistic Anthropology Discussion Group (Linganth)
- Resource Network for Linguistic Diversity (RNLD)
- Linguist List
- The Canadian Association of Applied Linguistics
- Society for the Study of the Indigenous Languages of the Americas
- LingGEOG—Language, Space, and Place
- Cultural Linguistics List
- Critical Approaches to Discourse Analysis Across Disciplines (CADAAD)

- Discussions Group for Readings in Critical Discourse Analysis (CDA-Discuss)
- Sociolinguistics and CMC (CMC Sling)
- List for the International Gender and Language Association (GALA-I)
- Distribución de información sobre lingüística española (Infoling)
- The Otomanguean List

Research participants for the interviews were recruited from the online survey. At the end of the survey, there was an option to volunteer for a semi-structured interview and to provide your email address for a follow-up email. I regularly checked for new responses on the Qualtrics survey and sent a follow-up email to every respondent who marked "yes" to volunteering and provided their email address. Not everyone responded to my follow-up email, which was frustrating at times, but after six months of running the survey, I managed to recruit thirteen interview participants.

### 3.3 Online Survey

An online survey was used to gain data on users' reasons for accessing AILLA, as well as demographic information about the research participants, such as age, gender, country of origin, education level. It was published using the Qualtrics software on June 26, 2020 and was deactivated on January 5, 2021. A total of twenty-two questions were used for the survey, including the question on consent to participant and volunteering for semi-structured interviews (see Appendix A for the list of survey questions). The first response was received on July 7, 2020 and the last response was received on December 9, 2020. The survey received a total of 67 responses. Twenty-six of the respondents were male and twenty-six were female. There was one respondent that answered with "other." The survey respondents were highly educated with over half possessing either a Master's degree or a doctoral degree.

## 3.4 Semi-structured Interviews with Archive Users

Semi-structured interviews were conducted to craft personal narratives about who AILLA users are, their motivations for access, and how they navigate the archive to find the materials that they are looking for. During the interviews, I also used what Maaike J. van Den Haak, a professor of user studies at the Vrije Universiteit Amsterdam, calls a concurrent think-aloud protocol, in which participants think aloud while conducting tasks (Den Haak et al. 2003). These were used to facilitate discussion on how participants usually engaged with the archive and to provide me with data on how they navigated AILLA's user interface. After recruiting a research participant from the online survey, semi-structured interviews were scheduled using Zoom at times convenient to myself and to the participant. Because of time zone differences, I ended up having to do a few interviews very early in the morning or late at night. All the names of participants in this survey were changed using a random name generator to conceal their identities. All interviews were conducted one-on-one, except for the group interview with two participants. I had not planned on doing a group interview, but the two participants insisted, and I decided to follow through. Interviews lasted anywhere from thirty minutes to two hours. All interviews were recorded using Zoom's recording feature for a total of fourteen semi-structured interviews and one group interview, twelve of which were with AILLA users. The group interview was with two AILLA users. Approximately ten hours of video and voice recordings were created from the interviews. I uploaded the Zoom recordings to Otter AI and then edited the transcriptions while listening to them to fix any mistakes.

## 3.5 Semi-structured Interviews with Archive Staff at ELAR and TLA

Two semi-structured interviews were conducted with archivists at ELAR and TLA: the archive manager of the Language Archive (TLA) at the Max Planck Institute of

Psycholinguistics and another with one of the archival assistants at the Endangered Language Archive (ELAR) at the SOAS University of London. The purpose of these was to gather data on cross-archive use and TLA and ELAR's knowledge on their user base. Like AILLA, their knowledge of their users was limited. However, the interviews provided useful data on issues faced by all language archives and pointed to the need for a participatory, user-centered design of digital language and cultural heritage archives.

### 3.6 Google Analytics

For the purposes of this project, Google Analytics was used to provide data on website traffic and use. With Google Analytics, it is possible to see information such as what cities and countries AILLA is being accessed from, which websites are driving the most traffic to AILLA, and what users are doing while on the website. Through Google Analytics, I was able to map AILLA users based on where they live and analyze which web pages and languages are being accessed the most.

### 3.7 Data Analysis

Over a period of approximately six months, I collected a total of sixty-seven responses to my online survey, which I uploaded into SPSS for data analysis. This gave me a larger sample size than the semi-structured interviews and, thus, a larger data set for quantitative analysis. In SPSS, I used the descriptive statistics method and created graphs based on my findings. Like the analysis for the semi-structured interviews and Google Analytics, I collected demographic data such as the research participants' ages and education levels, along with reasons for accessing AILLA, their satisfaction with the archive, and cross-archive use.

For the semi-structured interviews, I combine analysis of the user interviews and the archive staff interviews. Together, I collected nearly ten hours of voice and video recordings. I

uploaded the voice recordings into Otter.AI and corrected all of the transcriptions. In total, I created 192 pages of transcriptions from the thirteen AILLA users and twenty-three pages of transcriptions from the employees of TLA and ELAR. I uploaded these transcriptions into MAXQDA for analysis. Codes were created in MAXQDA and analyzed for themes and patterns. I read each transcription that had been uploaded into MAXQDA several times as I was creating codes. There were codes that covered demographic information such as age, country, educational level, and native language, in addition to codes on research participants' motivations for accessing AILLA, AILLA's strengths and weaknesses, and frustrations with AILLA. Themes were discovered by printing out a large sheet with all the codes and highlighting them for patterns. This allowed me to craft personal narratives of access and use based on my participants' careers and education levels, along with how they use the archive and what sorts of materials they searched for.

Google Analytics data from January 1, 2020 to December 6, 2020 was analyzed to answer questions on total user access, language, location, how users arrived at AILLA, and how long users stayed on AILLA's website. This gave me a global perspective on AILLA users and allowed me to map which countries and cities users were accessing the archive from, along with the fact that most AILLA users were coming to the website from Google.

My choice of multiple methods and datasets for analysis allowed me to build a narrative that moved from global AILLA use to personal narratives from the semi-structured interviews. I integrated the four methods by comparing the findings and utilizing them to check the validity and accuracy of my analysis of the datasets. Through this analysis, I was able to find points of contrast between different samples, along with similarities that gave strength to my findings.

## 3.8 Limitations

The use of listservs rather than a popup on AILLA’s homepage likely had a huge impact on the demographics of the survey respondents and the user interview participants. It seems that my recruitment method was skewed to mostly academic users. Most of the participants were either university professors or graduate students. The COVID-19 pandemic also likely had an impact on the demographics of the survey. For example, for the purposes of this project, I examined the Google Analytics data from January 1, 2020 to December 6, 2020. During that time frame, a total of 17,560 accessed AILLA’s website, up by 1,692 users from 2019’s 13,867 during the same period. It is possible that more academic users accessed AILLA instead of conducting in-person research because of lockdowns and fear over contracting the virus.

# CHAPTER 4

# RESEARCH FINDINGS AND DATA ANALYSIS

## 4.1 Introduction

This section summarizes my findings based on my analysis of AILLA's Google Analytics data and the information I collected from my Qualtrics survey and semi-structured interviews. AILLA's Google Analytics revealed trends of AILLA use and information on user demographics on a larger scale than both the survey and semi-structured interviews. The Qualtrics survey acted as both a recruitment tool for interviews and provided valuable data that could be plugged into SPSS for descriptive statistics. Narratives uncovered from semi-structured interviews with AILLA users revealed trends and patterns in the data that could be used to guide future AILLA initiatives on usability. Interviews with staff at ELAR and TLA provided information on cross-archive use and issues faced by AILLA's archival peers. Through my analysis, I discovered areas in which AILLA has succeeded in providing for diverse user groups and in areas in which AILLA could be improved to facilitate broader access.

## 4.2 Google Analytics Data

Google Analytics is a web analytics service offered by Google. It gives web developers and website owners the ability to track and create reports on website traffic. It can be used to map out where users are from, which languages they speak, how they are arriving at the website, and even what keywords they are using in search engines to find AILLA. This data can be used to increase traffic to a website by using the findings from the data analysis to improve underused webpages, add keywords to webpages to increase discoverability, and add language platforms based on which languages users speak the most. I used the findings from the analysis of this data to provide recommendations on the potential Portuguese interface, AILLA's use of social media,

and how to use Google Analytics features to increase website traffic.

From January 1, 2020 to December 6, 2020, 17,560 users accessed AILLA. There were 176,180 page views and 22,983 sessions with an average of 1.48 sessions per user and 7.67 pages per session, a session being “a group of user interactions with your website that takes place within a given time frame” (Google, 2021). The average session duration was four minutes and forty-six seconds. Additionally, a single session can contain multiple page views and a user can open multiple sessions. A session can end in one of three ways: either a time-based expiration after 30 minutes of inactivity or at midnight, or “if a user arrives via one campaign, leaves, and then comes back via a different campaign.” The latter part means that a user arrived at AILLA via different means, such as a different keyword in Google or through a different website.

The bounce rate during this period was 56.32%. According to the Google Analytics Help page, “a bounce is a single-page session on your site” and “is calculated specifically as a session that triggers only a single request to the Analytics server, such as when a user opens a single page on your site and then exits without triggering any other requests to the Analytics server during that session” (Google 2021). This means that most sessions on AILLA end after accessing a single page. There are a number of potential causes for this pattern. For example, that the user knew exactly which web page they were looking for and found what they needed, or perhaps they were unsure how to navigate the website, or even that the homepage was unappealing, which pushed them to immediately leave the website. As some interview participants reported, AILLA has a platform that is difficult to navigate, which could at least partially explain the high bounce rate.

Of these users who accessed the archive, 9,334 (59.55%) accessed AILLA in English and 3,425 users (21.85%) accessed AILLA in Spanish. Because of the regional focus on Latin

America and the fact that AILLA only offers a Spanish and an English interface, this number was not unexpected. In fact, users from the United States, Mexico, and Guatemala make up over 60% of all AILLA users. One thing to note is that the language codes for Google Analytics are drawn from the user's language settings in their web browsers. For example, "en-us" means United States English and "es-es" means Spanish from Spain. However, these codes do not always imply location and should not be confused in this way. Mexico, Guatemala, and Columbia were the top three pre-dominantly Spanish speaking countries with the most AILLA users during this period. 1,599 users (10.24%) accessed AILLA from within Mexico, 537 users (3.44%) accessed it from within Guatemala, and 328 users or 2.1% accessed it from within Columbia. Only 299 AILLA users (1.92%) accessed the archive from Spain, far below the 1,339 users who accessed the archive with "es-es" as their language setting.

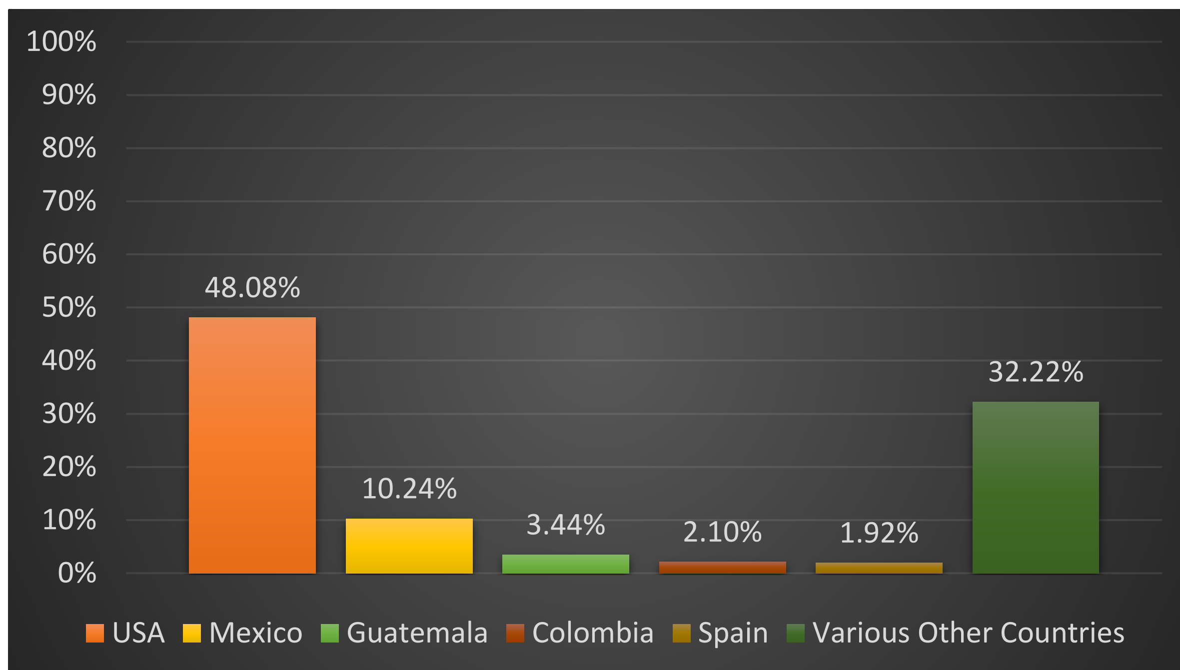


**Figure 1: Percentage of AILLA users from different countries.**

Google Analytics allows user locations to be broken up into country, region, and city (see Fig. 1). For example, 7,505 (48.08%) of users accessed the archive from within the United

States. Of these users, 1,395 (18.24%) accessed the archive in California, 1,139 (14.89%) in Texas, 604 (7.9%) in Virginia, and 400 (5.23%) in Florida. In Texas, users accessed AILLA the most in Austin and Dallas. In California, Los Angeles and San Diego were most common. In the U.S., you can also break these numbers up into metro areas with the most users, of which Washington, D.C., Los Angeles, and Austin are the top three. Unfortunately, these numbers become a little less clear in less developed countries with many more locations appearing as "not set," which the Google Analytics Help Center states will happen if their third-party vendor "does not have an accurate record of the visitor location" (Google 2021). Therefore, I was not able to break up users into metro areas in any country but the United States.

In Mexico, 428 users (26.49%) accessed the archive in Mexico City and 161 users (9.96%) in the state of Mexico, 133 (8.23%) in Chiapas, 122 (7.55%) in Oaxaca, and 113 (6.99%) in Tabasco. Sadly, Google Analytics does not allow me to click on the different regions in Mexico and pull up lists of cities in those regions like I can with U.S. states. However, if I click on the "city" tab, I can still pull up Mexican cities with the most users. When I click on the "city" tab, I can see that Mexico City has the most AILLA users in Mexico. However, Mexico City has an odd status in Google Analytics, perhaps because of its new status as a state as of 2016. It is listed under both the "region" and the "city" tab. Under the "region" tab, I get the number mentioned above, but if I click on the "city" tab I get 423 users (25.68%). This is only a small difference though. The other Mexican cities with the most AILLA users are Merida, Villahermosa, Oaxaca, Tuxtla Gutierrez, and Tlaxcalancingo with 83, 62, 57, 50, and 38, respectively.

In addition, Brazil has the sixth highest population in the world with many institutions that have an obvious regional interest in what AILLA has to offer, yet users in Brazil only made

up 2.01% of all AILLA users from January 1, 2020 to December 6, 2020. It is possible that this is due to a language barrier since the interface is currently only available in English and Spanish.

Another interesting find in the Google Analytics data was the acquisition drop down that shows what websites users accessed the archive from. AILLA's Google Analytics has four channel groupings: organic search, direct, referral, and social. Organic searches are users that come to AILLA from a search engine. A referral is when a user accesses AILLA from a website that is not a search engine. The social grouping are users who accessed AILLA from a social media platform. Direct is when the original source is unknown. 4,431 (27.50%) of AILLA users fall under the direct grouping. However, of the total 17,560 users, 7,683 (48%) came to AILLA from a search engine with Google accounting for 7,337 (45.54%) of all users.

In addition, 3,440 (21.5%) users came to AILLA were referred from another website. 4,431 users (27.7%) came from an unknown source. 453 (2.83%) users arrived at AILLA from a social media platform. Of the 22,983 sessions that occurred on AILLA from January 1 to December 6, only 757 sessions came from a social media page. This last part is important because it shows that AILLA's social media presence does not drive much traffic to the archive. It is possible that this could be improved through outreach on social media, posting engaging content on a regular basis, and active promotion of AILLA's social media pages.

Of the 22,983 sessions analyzed in this study, 11,177 sessions (48.63%) came to AILLA via Google. Because Google is a significant source of AILLA visitors, both in terms of first time and returning users, AILLA can use data from landing pages and different web pages on AILLA are positioned in search results to bring more visitors to the archive. However, search console integration has not been enabled on AILLA's Google Analytics, so it is currently not possible to analyze landing pages from Google or how different web pages are positioned in Google search

results. Enabling this function could provide useful data to AILLA's developers, such as which pages have good average positions in Google search results but poor click through rates. In this case, improved content on those web pages could lead to more AILLA visitors. Analyzing this data could allow AILLA to build effective internet marketing strategies and use search engine optimization to bolster the number of AILLA users. Although this would be a difficult venture, it is important to think of these search engine optimization strategies and improved keywords in English, Spanish, and potentially Portuguese.

### 4.3 Analysis of the Survey Responses

As mentioned previously, a total of 67 survey responses were collected for this study using Qualtrics. Of the 67 responses, 53 respondents answered the questions to completion, while 14 participants only partially completed the survey. To begin this portion of the analysis, I provide some demographics of the survey respondents. For the purposes of this section, I have left out the responses of the fourteen participants who did not complete the full survey. These 14 participants only answered the question on their preference for language in the survey.

Sixty respondents answered the questions in English and seven answered the questions in Spanish. However, while I was conducting my interviews, I noticed that a few of the research participants were native Spanish speakers that had taken the survey in English. I cannot say for sure whether most AILLA users are as frequently bilingual as my semi-structured interview sample pool.

Figure 2 displays results whether survey respondents chose to conduct the survey in English or Spanish. Although the bilingual interface is clearly a necessity for AILLA, far more users access the website in English than they do in Spanish. This was also shown in the Google Analytics data with nearly 60% of AILLA users having accessed the website in English from

January 1, 2020 to December 6, 2020. However, far more participants used English than Spanish in my survey compared to the Google Analytics data. This is likely because of my use of primarily English-speaking listservs for recruitment.

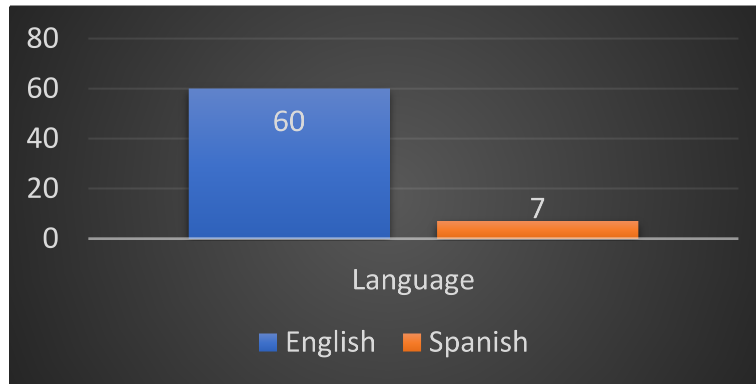


**Figure 2: Native language of survey respondents.**

I also examined the gender and age of the survey respondents, as shown in figures 3 and 4. The respondents were well balanced in terms of age. Of the respondents who answered the question on gender, it was a near even split. Twenty-six respondents responded with "male" and twenty-six respondents answered with "female." Only one respondent answered with "other." "Other" is obviously an outlier here but could cover a wide range of different gender identities. Because I only had one respondent identify as "other," I do not have the ability to analyze results based on non-binary and gender divergent identities.

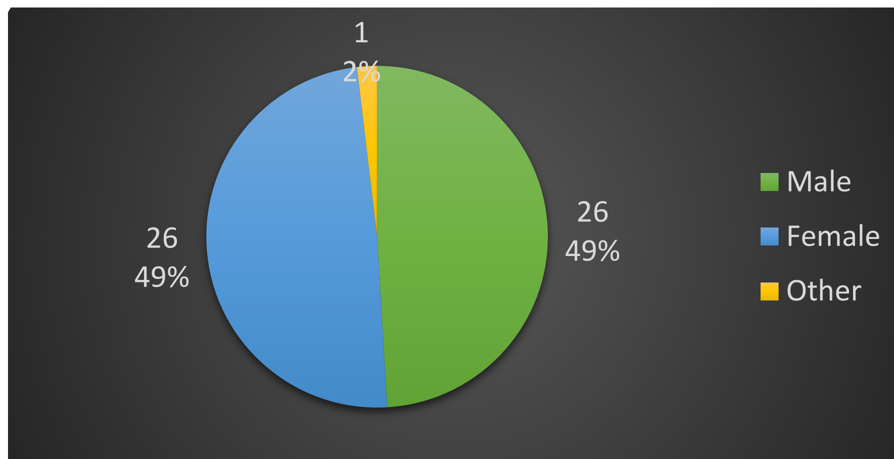


**Figure 3: Gender of survey respondents.**

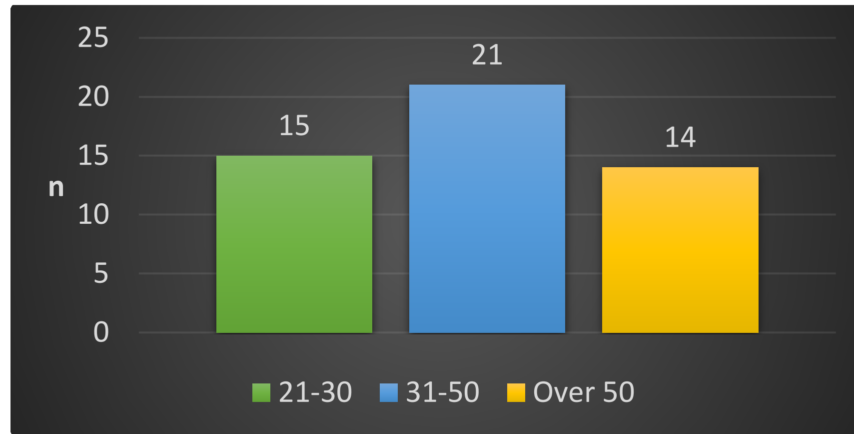


**Figure 4: Age of survey respondents.**

The respondents were highly educated, possibly a result of my use of the anthropology and linguistics listservs that I used to recruit research participants for my semi-structured interviews. A significantly large portion of the respondents had graduate degrees. This was also reflected in the research participants that volunteered for interviews. A majority of them either had a doctoral degree or were in a doctoral program. Figure 5 displays the frequency of the different levels of education for my survey respondents.

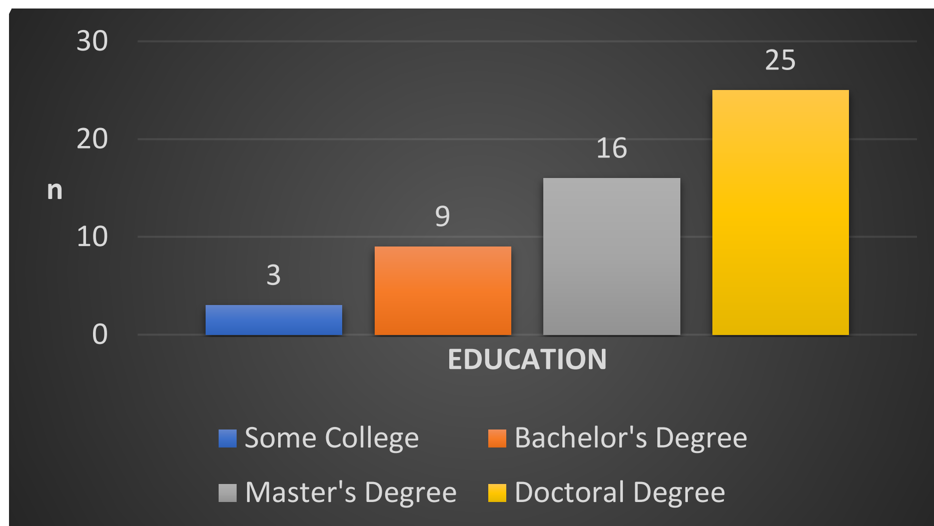


**Figure 5: Education of survey respondents.**

In terms of use, 14 respondents had accessed AILLA for the first time, 11 of which were English speakers and 3 were Spanish speakers. Thirty-nine respondents had accessed AILLA

before, 35 of which were English speakers and 4 were Spanish speakers. This is demonstrated in Figure 6. As mentioned previously, 14 respondents had not answered most of the survey questions, including this one.

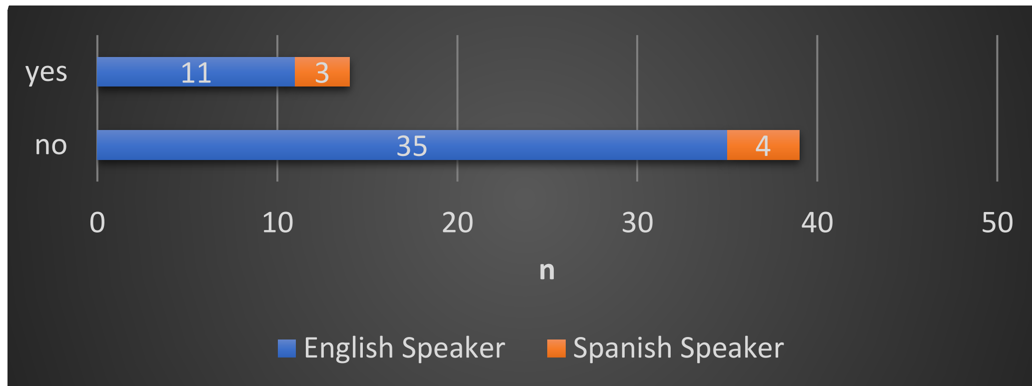


**Figure 6: First time accessing AILLA.**

Of the 53 research participants that answered the question: “Do you use any other language archives?,” 39 said that they do and 14 said that they do not, as shown in Figure 7. For this group of research participants, a large majority use other language archives. It is possible that collaboration between major language archives and adding links to other archives on their websites could drive more traffic to AILLA in addition to any participating collaborators. Based off my survey data, this would be especially useful in the case of ELAR and TLA, with which there is a lot of cross archive use.

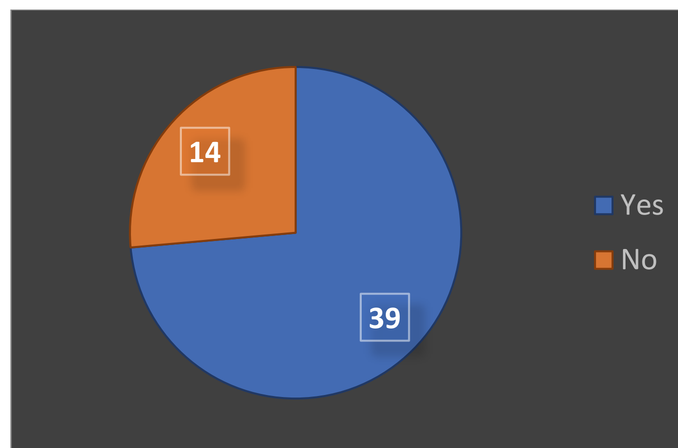


**Figure 7: Other language archives used.**

Although ELAR and TLA were the two most widely used language archives, participants utilized a plethora of other language archives, many of which were much more regionally focused. PARADISEC was mentioned 6 times and the California Language Archive at University of California at Berkeley was mentioned 5 times. However, participants mentioned other archives such as the Quechua Archive of the Catholic University of Peru, the K'iche' Maya Oral History Project Digital Repository at the University of New Mexico, and the Kaipuleohone Language Archive at the University of Hawai'i. Figures 8 and 9 are a visual representation of my findings in this section and demonstrate frequency of cross archive use, along with a small sample of the different archives mentioned in my survey.

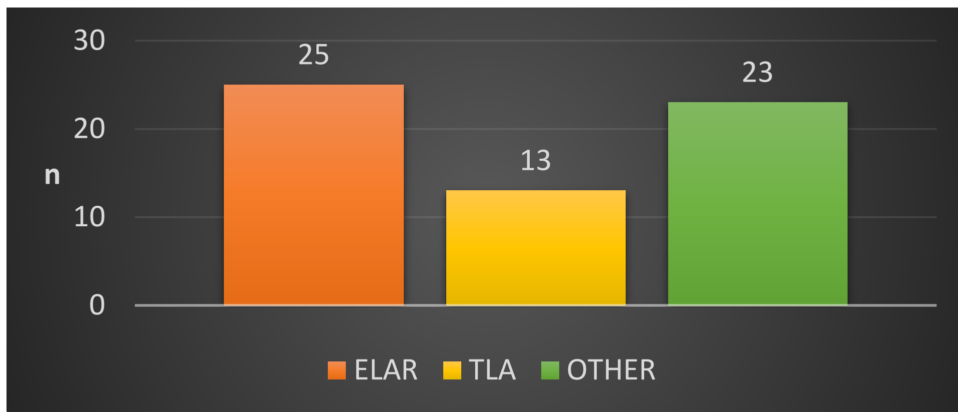


**Figure 8: Breakdown of archives used.**

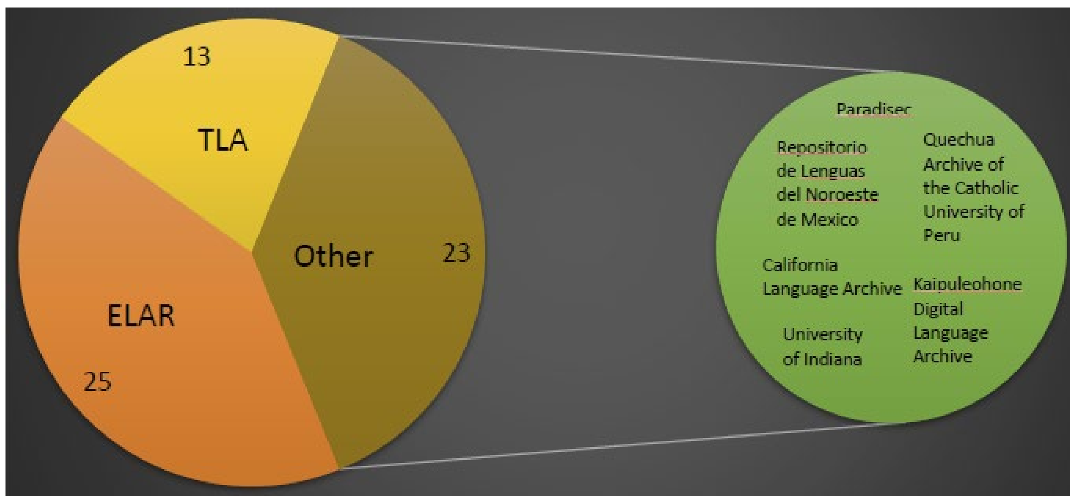


**Figure 9: Non-ELAR/TLA archives used.**

Another interesting result from the survey data is that, despite all the frustrations mentioned by my research participants, when asked how well AILLA meets your needs, very few respondents choose "not well at all" or "not very well" on the Likert scale I used to answer the question "How well does AILLA meet your needs?" This could be due to a few reasons: 1) AILLA users are generally satisfied with the archive, 2) AILLA users have gotten used to AILLA's interface, despite any initial difficulties, or 3) users did not want to offend by answering honestly. Although I initially thought that there might be differences based on country of origin or native language, this was not the case in my survey results.

### 4.4 Analysis of Archive Staff Interviews

To better understand AILLA's role in relation to other language archives, I sought out two interviews with archive staff at ELAR and TLA. Cross-archive use with AILLA, ELAR, and TLA seems common among users who access large online language archives. During my semi-structured interviews, ELAR was mentioned by several of my participants. Although only one of my interview participants mentioned TLA, many of my survey respondents had experience with both archives. Speaking with archivists at ELAR and TLA helped contextualize some of these responses that I received from both the survey data and the semi-structured interviews with AILLA users. The purpose of the ELAR and TLA archive staff interviews was to find information on their user groups and how their materials are utilized, along with any potential projects the archives are conducting with any user groups.

As large online language archives, TLA, ELAR, and AILLA share a similar mission: to archive languages and make them available to other researchers. As part of this project, I conducted semi-structured interviews with Paul Trilsbeek, the archive manager of TLA, and Leonore Lukschy, an archival assistant at ELAR. Both described part of their archive's mission

as making their linguistic material accessible to other researchers.

> That was before I joined, actually, some 20 years ago, we started to systematically archive language materials that we had from our own researchers. So we had a department of field linguists that went out to work in New Guinea, Latin America, and many other places in the world to investigate smaller under described languages, and they came back with lots of recordings obviously. And back then they thought it would be a good idea to systematically archive these materials and make them available to other researchers as well. (Paul)

Leonore had something similar to say about ELAR:

> So, it's a digital archive which has the purpose of preserving records of linguistic diversity in the world, of making those records accessible to as many people as possible.

There are some differences, however, such as both TLA and ELAR's much more global focus, along with TLA's interest in documenting materials from more than just Indigenous languages. Unfortunately, only one of my semi-structured interviews with the AILLA user participants mentioned TLA, so I do not have enough data to make a comparison between AILLA and TLA. However, several of my participants, including the two archivists at ELAR and TLA, did imply that AILLA's regional focus and bilingual interface set it apart from other language archives.

In addition, Leonore at ELAR believed that ELAR use correlated with internet connectivity. This is likely true for most, if not all, online language archives though. She said:

> So we have the most hits on our archive pages in the last three years from the US and then several European countries, Russia, and Canada, but we also have a lot of users from Australia and from several Latin American countries. And then also African countries but there you can, like with the usage stats, you can kind of see where it basically correlates with internet connection.

This could mean that AILLA's decision to maintain a website that is accessible to communities that do not have a great internet connection is beneficial to users from the Global South. On AILLA's website, they state that:

> We try to keep our website sleek and swift, so it will work properly in small town Internet cafes as well as in big city universities, using only formats that can be listened to or viewed with common software programs that can be easily downloaded free of charge.

Clearly, accessibility is a factor for all three archives. For ELAR, Leonore had many positive things to say about ELAR's user interface and its role in increasing accessibility, particularly regarding its new system. She stated:

> It's quite user friendly and it's fairly intuitive to use and you have the possibility to filter collections, filter the metadata by topics, genres, keywords, etc. You can do sort of fairly precise, fine grained searches.

A few of my recommendations for AILLA are in use by ELAR and is part of what Leonore believed are significant achievements of ELAR. In this sense, ELAR could act as a visual representation of potential features for AILLA.

In addition, Leonore mentioned that the staff at ELAR would like to make their archive more accessible to speakers of languages other than English. They encourage their depositors to have multilingual metadata and multilingual collection landing pages, in addition to potentially making their interface in non-English languages in the future. Leonore believed that accessibility is one of the main challenges facing language archives, especially for Indigenous communities. She stated that archives already cater to academic users.

> I think, especially if you're looking at archives for endangered languages. Ideally, those should be accessible to pretty much anymore and particularly to communities whose languages are represented in those archives.

One powerful insight that Leonore brought to our conversation was the necessity for endangered language archives to bridge the two worlds of very different user groups: academics and Indigenous users whose languages are represented in the archive.

> And how do you achieve this when, on the one hand, especially for academic purposes, you'll want the recordings to be the highest possible quality. On the other hand, if you're looking to make the archive accessible in regions with low internet connectivity, then you want recordings to be as compressed as possible. So, that's sort of the opposite. Bridging

> those two worlds, in a way, is one of the major issues for language archives. And again it's got to do with the linguistic barriers in terms of interface as well. (Leonore)

Wasson had similar insights in her article "Participatory Design of Language and Culture Archives," also pointing to a need to bridge that gap between these two user groups.

> Traditional archives prioritize preservation, so they seek to collect the highest-quality materials. WAV rather than MP3 files, photographs with the highest resolution possible, and so forth. By contrast, postcolonial archives may prioritize ease of access for communities with limited internet connections and therefore make smaller file formats available. (Wasson 2021,7)

Although all three archives are large online language archives, only ELAR and AILLA focus on Indigenous languages. Through my interview with Paul, I found fewer commonalities between AILLA and TLA. Unfortunately, Paul did not have readily available data on TLA's users. However, it is possible that TLA faces many of the same issues that AILLA and ELAR face with accessibility. On the other hand, there may be some differences as TLA includes non-Indigenous languages in their archive. My interview with Leonore, however, revealed many insights directly related to AILLA's mission of accessibility and community support.

### 4.5 Analysis of User Interviews

As mentioned in a prior section, I collected a total of twelve semi-structured interviews and one group interview with users of AILLA, producing over ten hours of video and voice recordings, along with several hundred pages of transcriptions. Transcriptions were uploaded into MAXQDA and codes were analyzed for themes. Think aloud protocols were used to facilitate discussion on how interview participants engaged with the archive.

Demographically, this was a highly educated group of participants. Most had at least a bachelor's degree and many were either graduate students or had doctoral degrees. The participant with a BA and the one who was an undergraduate student were outliers in this study.

Five participants were female and eight participants were male. Five participants were between the ages of twenty-two and twenty-six, three participants were in their thirties, four participants were in their forties, and one was in their sixties. Geographically, the participants were a diverse group. Six participants, a majority, were from the United States. However, there were also participants from Germany, France, Peru, Bolivia, and Mexico. Of the thirteen participants, ten identified as non-Indigenous and three identified as Indigenous.

### 4.5.1 Why AILLA?

The users interviewed had many reasons for accessing AILLA. However, the key themes that emerged from our conversations mostly centered around education and research. Although this is likely due to the nature of language archives generally, it is possible that this was exacerbated by my method of recruiting participants. These reasons ranged from language documentation and creating pedagogical materials to downloading and uploading research files and helping undergraduate students on thesis and dissertation projects, all very clearly related to education and research. Figure 10 displays the frequency of the codes that I uncovered during my analysis of my participants' reasons for accessing AILLA.

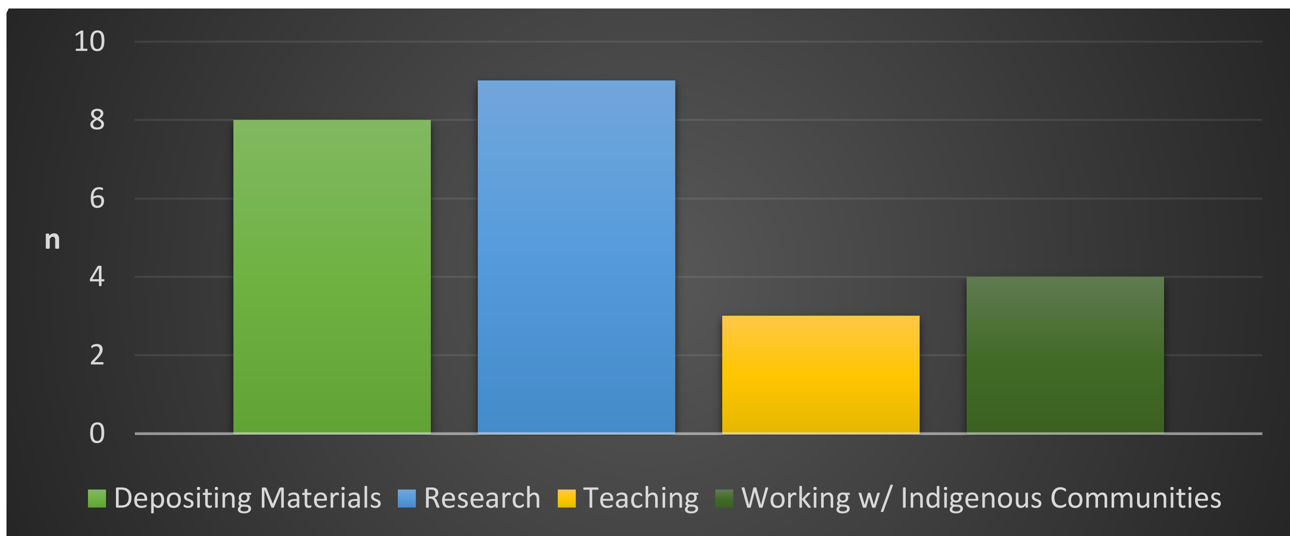


**Figure 10: Reasons for accessing AILLA.**

### 4.5.2 Depositing Materials and Collections Management

Because AILLA is a digital archive and, thus, is a repository of digital materials, I was not surprised by the number of participants who discussed uploading their materials to the archive. In total, eight participants mentioned "depositing materials" as a significant reason for accessing AILLA. Most of the participants had either already deposited materials on AILLA or were planning to do so in the future. This allows them to both preserve their research and to share it with others. All participants expressed some degree of pride or excitement regarding their personal AILLA collection or the potential of starting one. For instance, Miguel stated that he was "very excited" to deposit materials on AILLA because "it's very useful to have extra material and it's even better if you are the one that's doing that." In addition, Cheryl, who was currently in the middle of planning a large research project, stated that she planned to upload all her material to AILLA.

> So, part of the project is just building a documentary corpus, which will be archived on AILLA. So that's audio, video recordings and, ideally, transcriptions and translations, and ELAN files, and probably some community-guided materials, whatever they find most useful, probably a lexicon. And then I mean, potentially something like a picture dictionary. (Cheryl)

Like several other research participants, Cheryl had been using AILLA for a long time and a significant portion of her research relied on her use of AILLA. She utilized other users' materials on AILLA for her research and planned to deposit hers. Other users did the same in turn. One participant, Jessica, thought a lot about the user interface of collections and their accessibility.

> I spent a lot of time thinking about how my personal archive collection should be organized. And so I spent a lot of time either looking at my own archive collection to remember what the hell I did. Or thinking "Oh, I wonder how so and so organized their archive collection?"

Jessica focused more on how her materials were presented to other users and how that

might be improved. Several other research participants expressed similar views on uploading materials and their collection as a primary motivator for AILLA use. In my literature review, I mention Dorian and her concept of "purism" and "compromise," along with the issue of a pure, older form of Maya being taught to Mayan community members who could not relate in Guerrettaz's writings. Jessica's worries about how her materials are presented may have been a way of trying to make it culturally relevant to the communities she was working with. However, it is also possible that issues around "pure" vs. culturally relevant language materials is not something that was considered among the participants that I spoke with, as none brought these ideas up during our conversations.

#### 4.5.3 Research, Teaching, and Education

Because of the nature of AILLA as a repository of linguistic and ethnographic material, research emerged as a primary motivator for accessing AILLA throughout most of my interviews. As mentioned previously, most of the research participants had either completed doctoral programs or were currently enrolled in one, so this inclination towards research is unsurprising. In total, nine participants said that they used AILLA for research, either as faculty at research institutions or as undergraduate or graduate students. Antonio, Darrell, Cheryl, and Jessica, for example, are graduate students that are using or will be using AILLA's materials as part of their dissertation projects. This is especially true for Antonio and Cheryl, who will not be able to conduct fieldwork at this time because of the COVID-19 pandemic. In fact, Antonio had to change some parts of his dissertation and will be a year late in graduating with his PhD. He said:

> Something I would say, though, is now that, you know, with this craziness that happened with the pandemic… I didn't see this, the last year, I haven't gone to the field, because I am a bit worried about the speakers, you know, getting COVID and infecting them with

> COVID in their elders, so I don't want to take that chance at all… So what I do now, or what I'm doing is, again, going back to AILLA.

AILLA has been an important resource for most of my participants, perhaps even more so during the COVID-19 pandemic. Although never really articulated by any of the participants, there was an implied interactivity among AILLA's users through their use of the archive and their collections. As mentioned in chapter one, it is possible that this interactivity constitutes a network of overlapping user groups. AILLA users engage with other users' materials for their own research that, sometimes, becomes the topic of another user's research. That user may deposit their materials into AILLA, which may, in turn, be utilized by another user. It is possible that this interactivity could be exploited to build community through forums or chat functions on AILLA's website. In AILLA's mission statement on community support, they stated that they want to do whatever they can to support the survival of Latin American Indigenous languages (AILLA, n.d.).

> We want to do whatever we can to support the survival of the indigenous languages of Latin America, and to help their speakers make them flourish. One way we can help is by fostering the community of speakers and scholars, using the archive and its multilingual Internet interfaces as a medium of communication across continents.

Other content management systems such as Mukurtu CMS facilitate a participatory model in which users can comment on existing content, in addition to adding new content and cultural-based narratives. This was not discussed by any of my research participants, but this topic should be explored further in future user studies of AILLA to foster research and teaching on Latin American Indigenous languages.

#### 4.5.4 A Desire to Work with Indigenous Groups

In addition to uploading personal research materials into AILLA, six participants mentioned "working with Indigenous people" and "language revitalization" or the revitalization

of traditional cultural practices as reasons for using AILLA. Alejandra, a researcher with a PhD in Anthropology, stated: “The way I interact with AILLA is because I teach people in the community how to have access to the recordings and the video recordings that I've done.” She was interested in working with the community whose materials were represented in her collection.

Cheryl also expressed interest in working with the speaker community of the language she was conducting her dissertation research on.

> Yeah, I proposed a couple of community workshops which, at the time I proposed them, I was proposing something to do with community literacy and maybe something to do with recording oral histories of the area in which the community lives. Because there’s a real sense that the language is highly endangered and there’s a real sense that it’s a shame that the language is not learned by children, and maybe some desire to learn how to write in it or to record stuff in the language.

Miguel had a similar desire to work with Indigenous people, but his case was a bit different than most of the research participants I interviewed. He was not a graduate student or had a doctoral degree. His work with Indigenous languages and their speaker communities came from his career as a teacher.

> Because the main concern of my group is to work with and for Indigenous languages and to train speakers on linguistic analysis and I think the use of AILLA is somewhat related to that because I can use the AILLA recordings in the courses when I can or I can tell the students to go and maybe look for some recordings in order for them to practice and look at all the details of the archive as well.

Unlike most participants, Brett expressed a thought that is in line with some IDS goals that were stated in my review of the literature. Namely, that Indigenous communities can be thought of as collaborators that should have access to their own data.

> There is a push for archives to have the materials available to the community members who are giving us their data or collaborating with us. And you can’t call them collaborators unless that actually are collaborators. We obviously don’t want to call them, you know, data givers. There’s a push to call them consultants, but if you want to push for collaborator as a term, we can’t just let it be: you worked with me to give me your

> data, they shouldn't be able to work with their own data. And the reason that it's not necessarily feasible to do that for someone is because it's just a difficult to navigate website.

Unfortunately, no other participant mentioned or implied data ownership or sovereignty of their data by Indigenous communities. However, he was not the only participant that mentioned it might be difficult for some Indigenous communities to access AILLA. Alejandra often has a difficult time teaching her Indigenous students how to use the archive.

> It gets really confusing, so it's important to me for AILLA to have a better system to find the material. So that it can be for people to have access to it. Some of my students I have sign up for an account, which I think is important. Then I said "well, you know, go and play around and see what you can find," and they say it's really hard. It's just, you know, difficult to find things. So, for me, it is important for AILLA to have a little bit of a better system to find things.

If AILLA intends to follow through on its commitment to accessibility and community support for Indigenous communities whose languages are represented in the archive, it is essential for AILLA to make the archive easier to navigate and more intuitive for non-academics to access.

## 4.6 Frustrations with AILLA

A general theme of materials and information being difficult to find seemed to emerge from the answers to my interview questions. AILLA's user interface seemed like a puzzle that needed to be solved. Nearly all the participants I interviewed mentioned frustrations over the difficulty in discovering materials in AILLA, as shown by the frequency of the codes "frustration over search functions," "confusion over layout," and "not intuitive." The frequency of these codes is shown in figure 11. Participants mentioned how difficult it was to navigate AILLA's interface in several ways.

One participant believed that the system could be designed to facilitate easier access:

> I'm pretty sure you can design this in a way that people can access the materials with less clicks with less levels of, I don't know what to call it, concealment. (Miguel)

The difficulty of finding materials, navigating the website, the use of language PIDS (described below), and the confusion surrounding access permissions seemed, to many users, like a puzzle that had to be solved before you could find what you needed.

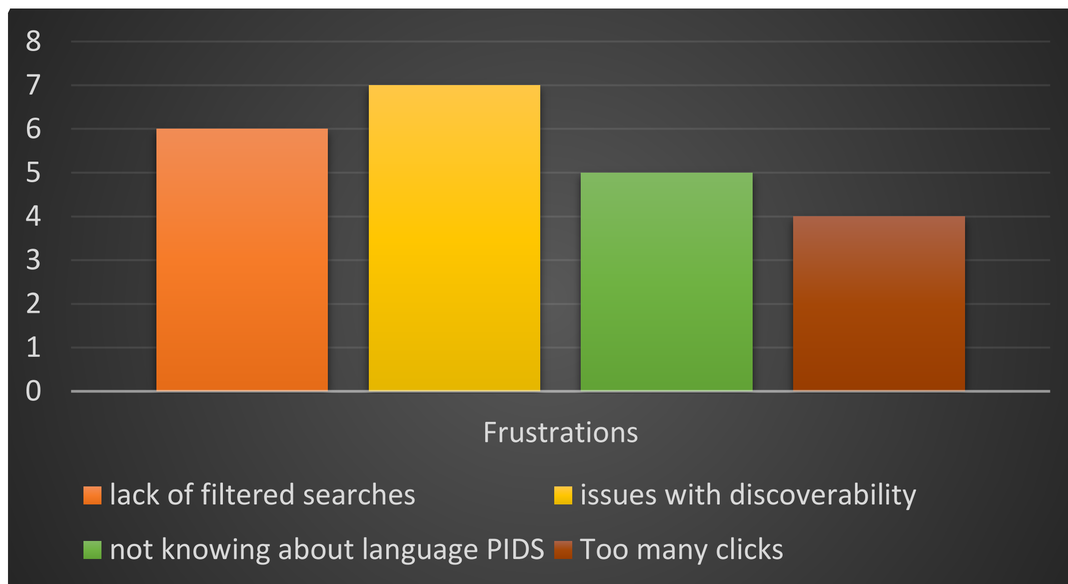


**Figure 11: Frustrations with AILLA.**

### 4.6.1 Lack of Filtered Searches

Search filters give users the ability to restrict searches to criteria that a user has set, such as file types or sections of a website. It removes data unrelated to the matched search so that users can find what they are looking for much more efficiently. With digital libraries such as JSTOR and Project MUSE, you can filter searches by content type, publisher, journal, and research area. Filtered searches improve discoverability of research materials. In contrast, AILLA does not have the ability to filter searches. AILLA does have a search bar in which users can type in keywords to discover materials. Searching with language PIDs (persistent identifiers) is the most efficient way of finding something. However, in section 4.6.4, my findings indicated that language PIDS can be confusing for some AILLA users. Keeping in line with this theme of

"puzzle-solving" and of materials and knowledge being difficult to find, nine participants mentioned frustration over the lack of filtered searches as a significant barrier to discoverability. AILLA has thousands of materials in its collections and, according to several participants, materials can be difficult to access unless you already know what you are looking for. Brett, an undergraduate student, for example, stated:

> What would be nice, though, is filtering and also sorting. You can't sort by alphabet, it's just automatically first letter. Likewise, with organizations, it's kind of all the same thing that you have to be willing to scroll. And that is a pain. Otherwise, you're searching and so the thing is, that there's, you know, just putting up a list of aliases for various languages. But it's kind of hard to choose which one to be looking for if you're just searching.

Like Brett, Cheryl also believed that the ability to conduct filtered searches would make finding what you are looking for a much quicker process. She wanted to be able to filter out items that do not "have any filtered resources or any actual resources." Otherwise, she thought it was a slow process.

> I think perhaps the easiest way to actually do this is to just kind of look through the collections and see if you see a collection that is labeled for a language that you're interested in looking at, but there's like a million pages of collections. So, that's a slow process.

Natalie also believed that the lack of search functions made searching AILLA a slow process. She stated that, because the languages are listed in alphabetical order on numbered pages, "you have to kind of guess on which page will be the correct language you're working on." Darrell also mentioned something similar. He had a clear idea of how filtered searches would help him navigate AILLA.

> I guess, as I mentioned, having a filter or search thing that could show you what kind of files are available and filter by that. That could be nice or if there was some way you can flag each deposit as having transcriptions or not having transcriptions.

Because of the high number of participants who complained about the lack of a filtered

search function, it seems likely that adding this feature would improve the discoverability of AILLA's materials for many users.

### 4.6.2 Access Permissions

AILLA has a system of graded access levels that may be applied to either an entire collection or pieces of a collection such as certain media files or folders (AILLA, n.d.). According to AILLA's website, there are a total of four access levels labeled by number with Level 1, the public access level, indicating full access to all AILLA users. Level 2, the curation in progress level, restricts materials that are under curation or that must be restricted for other reasons that must be justified and renegotiated every five years. Level 3 is a temporary embargo, in which files labeled as such cannot be accessed until after a specified date. Level 4 is the controlled access level, in which AILLA will provide contact information to a user and they must contact the depositor to ask for permission to access the file (AILLA, n.d.). Several participants mentioned their frustration and confusion over this system of graded access levels or what many of the respondents called "access permissions." These were another barrier that participants found difficult to navigate. Miguel, a participant from Bolivia with a bachelor's degree in applied linguistics, was not sure how access permissions on AILLA worked. At one point during the interview, he said: "They say I need permission. But I guess I couldn't find a way to ask for the permission. I didn't find any link or any box for it. So, I just gave up." May, another graduate student in linguistics, stated:

> And that process of doing that was very frustrating, because I couldn't just like look at someone's collection and be like, "Oh, well, they have fifteen resources and fifteen of them are password protected." I had to go click on every resource and be like, okay, yes, all of those files, the password, all those files are password protected. That is, I think, the primary problem that I personally have in finding useful materials on AILLA.

In total, four participants mentioned issues with access permissions. Some of them were relevant

to the lack of filtered searches and could be solved by the ability to filter out files with access permissions beyond level one.

In some cases, access permissions may violate IDS principles when Indigenous peoples must ask for permission to access the materials that represent them in the archive. The archive is difficult enough to access as is, especially for non-academics, and confusion around how to request access to materials may be an incredibly difficult task for Indigenous community members. In addition to the difficulty of navigating access permissions, this violates IDS in terms of lack of Indigenous ownership of the data that represents them in the archive. Some researchers may be placing restrictions on materials that the communities want to be protected, so I do not suggest removing access permissions entirely. However, there should be an easier way for Indigenous community members to take ownership of their data and to get around access permissions without having to make a request.

#### 4.6.3 Too Many Clicks!

Several participants mentioned frustrations over "too many clicks," which could also be solved by the ability to filter searches. Four participants mentioned their frustration over the number of clicks needed to navigate AILLA's user interface. Rafael, a participant from Mexico with a PhD in Indo-American linguistics and who works at a research institute in Mexico City, said:

> I don't know who designs the pages. But sometimes, you have to click multiple times to get where you want to get. And one suggestion I have is don't make the user click that many times. I'm pretty sure you can design this in a way that people can access the materials with less clicks.

Rafael also said:

> I'm pretty sure that's always been the thing that frustrates me at times. Because you click on, you get to the page, you don't know exactly what to click, and then once you find the

> right place, then you have to figure out where to click on that second page, and so on and so forth.

A difficult to navigate website with lack of search filters and, unless you know what you are looking for, the necessity of navigating multiple web pages to find usable materials could be solved with a filtered search function.

#### 4.6.4 Language PIDs (Persistent Identifiers)

Another issue that frustrated many of the respondents was confusion or lack of knowledge of the persistent identifiers (PIDs), which AILLA's FAQ page defines as "a six-digit number associated with an object in AILLA that can be found at the end of that object's URL" (AILLA, n.d.). These numbers can be typed into the search bar to find collections. One Indigenous participant, Alejandra, had this problem. She lives in Mexico and regularly works with a local university in a predominantly Indigenous community. She stated that it is important for her to have access to AILLA's materials because of her work with Indigenous people wanting to access their community's materials and because she was using AILLA to create teaching materials. She was completely unaware of AILLA's language PIDs and mentioned that she was "stuck" and could no longer access materials on AILLA. She also mentioned that this was a problem she has had since AILLA made the switch to a new platform. She said:

> I haven't been able to have access to AILLA... something happened that before, I don't know when I forgot what time this transition happened. But I remember I would type the name of a speaker and I would have all the list of the materials that were done with that speaker, or it could be for the "passenger," or, you know, like done by the linguists or done by the speaker or all materials available by the community. And so, so then I could see the list of things, right? In search, but now I... something happened in the system that is not you know, I don't see it. Or maybe what it is, is that something happened that maybe is very easy, but I just don't know how it works.

Although AILLA has a FAQ page that explains some of the issues that users are having with the website, none of the participants had mentioned being aware of its existence or ever

having clicked on it. During the think aloud protocol portion of Alejandra's interview, Alejandra discovered the FAQ page as I watched her try to navigate the website. She seemed surprised that it was there and said "I feel that I need to do my homework," implying that many of the problems that she was having with the archive could be solved by spending time searching through the FAQ page.

## 4.7 Strengths of AILLA

### 4.7.1 Bilingualism

Antonio, Martin, and Natalie specifically mentioned AILLA's bilingual interface as a major strength of the archive. Antonio, Martin, and Cheryl were excited about the potential Portuguese interface on AILLA's website. An undergraduate participant, Brett, stated:

> Yeah, so I went ahead and shot them an email because that's something that was one of the first things that I talked to Susan and Ryan about. A lot of this is in Portuguese. In terms of a lingua franca it's English, Spanish, Portuguese, and then Guarani. So yeah, Portuguese is super important and the fact that they don't have it is bad."

In addition to Brett, Cheryl, a graduate student in Linguistics, and Antonio, an Indigenous graduate student in Linguistics, believed that a trilingual AILLA with Spanish, English, and Portuguese interfaces would increase access to the website, especially from researchers in Latin America. Cheryl mentioned that she would like to see a Guarani interface at some point but did not believe that would ever be implemented systemwide.

### 4.7.2 Areal Focus and Languages Available

Several participants mentioned that AILLA's areal focus on the Americas is a strength of the archive. Natalie said that AILLA's focus on the Americas helps building community around the archive.

> Okay, so for AILLA, I would say the strength is the areal focus on the Americas. I think that enables it to create kind of a community. Because I also work in the Americas, it's

really easy for me to go there. I think it's more likely that there is some data that is interesting for me.

Natalie seemed to like the areal focus because it meant that it was more likely for her to find language data that is interesting to her. While not explicitly stated, other participants seemed to feel the same way about AILLA's area focus. They liked the languages that are available in AILLA, which is determined by the archive's areal focus. Brett seemed to agree when he said: "the strength of AILLA lies in what languages are available there."

## 4.8 Use of Other Archives

Ten participants mentioned using ELAR for some purpose, usually very similar to the way in which they used AILLA. I began this projecting expecting there to be significant overlap between AILLA, ELAR, and TLA. However, only ELAR and AILLA had significant overlap. Martin was the only research participant who mentioned using TLA and his reason for accessing language archives differed from the other participants in a very distinct way. He did not access AILLA, ELAR, TLA, or any other language archive through normal means, but by downloading every file from each archive at once using a software he built. All other participants accessed their archives via the normal user interface, but TLA was not among the archives that they used. However, nine out of the thirteen AILLA users that I interviewed mentioned accessing ELAR. In comparison to the survey results, it seems like this may have just been a unique sample of research participants. The survey respondents showed that there is generally a lot of cross archive use with both ELAR and TLA.

A few other archives were mentioned, but not with significant frequency. Two participants mentioned accessing the DOBES archive (Dokumentation bedrohter Sprachen), the previous version of TLA. Two participants mentioned PARADISEC (Pacific and Regional Archive for Digital Sources in Endangered Cultures), including one that was particularly

impressed with their filtered search functions. Other language archives mentioned were the California Language Archive at Berkeley, the American Philosophical Society Archive, the Alaska Native Language Archive, and the Kaipuleophone Language Archive at the University of Hawaii at Manoa. Only one participant stated that they did not use any other language archive due to his preference of using Indigenous social media as teaching materials.

To better understand AILLA use, I asked my participants to make comparisons between AILLA and other archives. Unfortunately, only one of my semi-structured interviews with the AILLA user participants mentioned TLA, so I did not have enough data to make a comparison between AILLA and TLA. For this section, I only had enough data to compare AILLA and ELAR.

The main finding that emerged when participants were comparing the two archives were their differing opinions that depended on the strength of their internet connection or their browser's ability to load pages. Two participants, Cheryl and Jessica, praised ELAR's "clean" and "easy to look at" interface. They believed ELAR is much more intuitive and easier to navigate, compared to AILLA. Several participants also heaped praise on ELAR's interactive map.

> So, the strength of ELAR is that it is pretty and because it is pretty that makes it easy. I find it easier to navigate. Part of that is because it's pretty, it has more design stuff like having the side boxes where the titles of each cabinet of each sort category have a gray box around them. It's very visually easy to glance around and "be like, ah yes, lots of information, boxes of information." And that makes it easier to navigate. (May)

In contrast, two other participants, Miguel and Darrell, believed that ELAR crashed too much and that AILLA was better because AILLA's pages loaded much more quickly. Darrell's statement on ELAR was that his "browser takes forever to load their pages. So that's one thing.

AILLA loads really quickly. It's pretty nice." Although Miguel really liked some of ELAR's features, especially the map, he also complained about it crashing too much.

> A good feature they have is this map that I guess is not working. A disadvantage of this archive is that it crashes a lot like they are in constant maintenance, and they sometimes don't have the full features. Or you should have here some points that indicate that where the language is spoken and the materials you have, but it's not working right now.

It is important to note that ELAR moved to a new platform that uses Preservica. This change occurred after the last of my semi-structured interviews had been completed and I do not know if my research participants would have made the same comparisons with the new platform.

It is difficult to know exactly how to improve AILLA's functionality in reference to the comparison between AILLA and ELAR. Any decision will ultimately make someone unhappy. However, if one of the main goals of AILLA is to ensure Indigenous access and support for Indigenous communities seeking the use AILLA's materials for the revitalization of language and traditional cultural practices, it seems better to maintain a simpler website while improving the discoverability of materials through improved search functions and an interface that makes materials easier to find.

## 4.9 Indigenous Use of AILLA

Three semi-structured interviews were conducted with Indigenous users: Chavez, Antonio, and Alejandra. All three were academics either finished with their doctorate or graduate students in a doctoral program. Again, this is likely due to my method of recruiting users for my survey using anthropology and linguistics listservs. Two of the users studied their own language, while the other studied an endangered language in his country with very few speakers. Although not specifically stated, here too themes of research and education are dominant. Among two of the participants, there is also an explicit desire to work with communities on language

revitalization and to create pedagogical materials for the language they are working on. As Alejandra explained:

> People use [AILLA] in many different ways. I used to use it for teaching when I was at a university in the US. People will look just to hear sounds and to hear different ways of how humans produce sounds and it was fun for that, but I don't use it very much for that. I use it mainly now to make materials and to teach people in the communities.

Each user had a different story about their use of AILLA. Although the number of Indigenous users was low compared to non-Indigenous academic users and not enough to extrapolate conclusions based on statistical analysis, I felt that some of their stories were powerful enough to include here, providing a window from which we can see what some Indigenous use may look like. One story that struck me was from Alejandra, who had been attempting to facilitate access and train Indigenous users in her community on how to use the archive. She mentioned that, because they had been recording people in the community for so long, they had recordings of people who had passed away.

> For example, let's say that I'm like, last week, I was looking for stories by the mother of someone in the community who asked me to download the stories that this person told me. This person wanted to hear the voice of his mother and wanted to hear the stories that the mother told me…So I can go and type her in, but it takes a long time to figure that out and so I just end up avoiding to do it, right? So those are the kinds of things that sometimes I have to get because we have been recording people for a long time and so we have the recordings of people who have already passed away. Sometimes the relatives want to hear their voices.

This incredibly moving story shows that there are some issues surrounding Indigenous access that clearly violate IDS principles. Language documentation for endangered languages can include many different types of materials from Indigenous communities represented in the archive. These can include stories, poetry, songs, folklore, and interviews, among many other types of spoken material. Although I cannot prove this from the data that I have, it is possible that this desire to access materials by Indigenous people exists in many Indigenous communities

and that the difficultly in navigating AILLA's website has prevented access by Indigenous peoples.

Chavez, like the other Indigenous research participants, is also conducting research on his native language. For his project, he explores how radio broadcasting in the Andes is used to maintain and promote the language and culture of the Quechuan people.

> I'm in the Andean region that is, for example, in Bolivia, in Peru, and Ecuador. Mainly in these three countries, I am exploring this region and how people there use radio station to spread the culture, the language of the Indigenous people and how they adopted radio programs to maintain and promote the culture and language that is absent in mainstream media in these three countries.

A Quechuan researcher exploring how Quechuan communities are engaging with language and cultural revitalization through radio programs is a powerful example of how Indigenous academics may engage with AILLA.

In addition, all three Indigenous research participants use AILLA materials to develop pedagogical materials for teaching Indigenous languages. For Chavez and Alejandra, this is their own native language and the communities in which they are from. Alejandra said of her own work:

> Sometimes we do a lot of pedagogical materials for the language that I speak, so sometimes I'm looking for stories in AILLA to be able to put them into children's stories or something.

The teaching of Indigenous languages is a key feature that ties these three together. Antonio is working on a grammar for a highly endangered language with only forty or fifty speakers left. He also works with the community to create materials for teaching and language revitalization. Chavez is different in that he teaches students his native language at a university in the United States. These students may or may not be a part of Quechuan community. However, that desire to teach is still present and shared among all three Indigenous research participants.

Although I do not know for sure, and this topic did not come up in our conversations, Alejandra and Chavez's involvement in academia and work within their own communities may be an example of Linda Tuhiwai Smith's findings that Indigenous people may feel the need to enter academia to dismantle colonial power structures and to gain the qualifications needed to conduct research. As mentioned previously, Alejandra conducts work on her native language and works to teach members of her own community how to use AILLA so that they can access their own materials on their languages, stories, and traditional cultural practices. This gives her Indigenous community members the power to take ownership of and to use the data that represents them in the archive for the benefit of their community. As mentioned in my literature review, Indigenous people have the right to sovereignty and to determine strategies for their own development. This includes cultural revival efforts. AILLA should focus more efforts on following IDS, UNDRIP, and OCAP principles in terms of Indigenous sovereignty, ownership of data, and Indigenous involvement in all aspects of the research and data analysis process. With more collaboration with Indigenous communities and ensuring Indigenous community access to their data, it is possible that AILLA could establish an incredibly positive, mutually beneficial relationship with its Indigenous users.

# CHAPTER 5

# RECOMMENDATIONS

When I began this project, AILLA's archival staff had very little information on their users, how the archive is being used, and user perceptions on accessibility. My findings revealed several ways in which AILLA could improve both community support for users and AILLA's functionality. My first recommendation is to pursue the Portuguese interface. Several participants mentioned AILLA's bilingualism as a major strength of the archive, especially when they compared AILLA to other major, digital language archives like ELAR and TLA that only have an English interface. Three participants mentioned excitement over the possibility of Portuguese as the next language interface option on the website.

Cheryl, however, took this a step further. She believed that it would also be helpful for AILLA to add some of the Indigenous languages with larger speaker communities such as Guarani and Quechua.

> Cheryl: As many languages as you're able to make the interface available in is good. Obviously, there's like, you know, 150 Latin American languages or whatever, so it's not going to be possible to put all of those as a fully functional interface but—
>
> Interviewer: Perhaps some of the more widely spoken ones like Guarani?
>
> Cheryl: Yeah, so like Portuguese is obviously like the main language spoken in Brazil. I think Quechua might be good because Quechua's like a widely spoken kind of lingua franca, at least in Bolivia, but also perhaps more widely in the Andes. I don't really work in the Andes. So yeah, if they wanted to target, getting some of the major Indigenous languages, either as available interface languages or as readily accessible for search functions. Like, I don't think it would necessarily be possible to search the archive in an Indigenous language that appears in the metadata field if you wanted to do that, but it might not be entirely impossible to implement that kind of thing.

While it would be ideal to create an interface in several of the Indigenous languages with the largest speaker communities in the region, adding an interface in Portuguese would help AILLA reach many potential users. As the country with the sixth largest population in the world and

with institutions that would have an obvious interest in AILLA due to its regional focus, Portuguese could bolster use of AILLA for Portuguese speakers in Brazil, in addition to providing access to Indigenous users who may be bilingual in Portuguese and their native language.

I also recommend placing the link to the FAQ page at the top of AILLA's web page with the tabs "Collections," "Languages," "Countries," "Announcements," "Organizations," and "Persons." No participant mentioned having ever seen or looked at the FAQ page except for the one participant who discovered the page during our Zoom call. Most of the information that my research participants were looking for could have been found on the FAQ page. I believe the reason most of my research participants had not seen it was because of the way in which the link is placed on AILLA's website. Rather than having it in small letters on the right side of the page, so far down that users must scroll to find it, it should be placed at the top of the page with the other major tabs. This ensures that it will be seen by users, which may help decrease some of the frustrations that were so prevalent during my interviews.

My third recommendation is to increase collaboration between ELAR and TLA, in addition to regional archives hosting Indigenous language and cultural materials. There was a lot of cross archive use with ELAR among the semi-structured interviews and with both ELAR and TLA among the survey participants. I believe that collaboration between the three archives could result in increased traffic for each archive. In addition, collaboration with regional archives in Latin America could bring more Latin American researchers, including Indigenous users, to AILLA. This could further AILLA's mission of increased access and community support to Indigenous communities whose languages and cultural materials are represented in AILLA.

I would also enable the search engine integration feature on AILLA's Google Analytics

and use search engine optimization to increase traffic to AILLA. As mentioned previously, AILLA's social media presence does not drive much traffic to the website. Less than 3% of AILLA users came to AILLA via a social media page from January 1 2020 to December 6 2020. However, nearly half (48.63%) came to AILLA via Google. Search engine optimization could provide AILLA with a useful strategy that brings more users to the archive. In addition, the search engine integration feature could provide useful data to AILLA's developers by providing them with the ability to analyze landing pages from Google and how different web pages are positioned in Google search results.

I also believe that AILLA should increase their outreach with Indigenous communities and conduct more collaborative efforts with these community members in the construction of the archive. In addition, AILLA should take active involvement in pursuing conversations with Indigenous people on how AILLA can improve access and community support in the future. IDS and UNDRIP may be difficult for an archive like AILLA to follow in their entirety. However, AILLA can improve its fulfillment of IDS principles by actively pursuing its mission of access and community support through full collaboration with Indigenous communities.

While I believe these recommendations could help participants use the archive more effectively, in addition to driving more users to the archive, it is clear that participants value AILLA as a resource for Indigenous language research in Latin America. AILLA's bilingual interface and areal focus set it apart from other digital language archives. As one participant said:

> For AILLA, I would say the strength is in the areal focus on the Americas. I think that enables it to create kind of a community. Because I also work in the Americas, it's really easy for me to go there. I think it's more likely that there is some interesting data.

By continuing to improve its user interface and outreach, AILLA will be better able to fulfill its mission of accessibility and community support for Indigenous users and for scholars who study their languages and cultures.

# CHAPTER 6

# REFLECTIONS

This has been an incredibly long, fascinating journey and I have learned a lot while working on this project. I had been interested in libraries and archives since my junior year of undergraduate work when I was completing my bachelor's degree in history. I became used to working in Goucher College's special collections and archives and used their materials for several projects throughout my time at Goucher.

When I started the applied anthropology program at UNT, I continued to think about how I could tie in anthropology with my interest in information science. During my second semester, Christina recommended this project and helped me secure this opportunity to work with AILLA. I had also learned a little bit about UX and design anthropology during one of her courses my first semester at UNT. I was incredibly excited. This seemed like the perfect way to combine my love of anthropology and archives into a single project.

Throughout my time at UNT, I talked to several librarians working in different university libraries and learned that UX and design are incredibly valuable skills to have while working in an academic library. I would not have known about this crossover with design, ethnography, and libraries without the applied anthropology program at UNT. It inspired me in an incredible way and pushed me to continue my studies in information science, anthropology, and issues on data and language rights for Indigenous peoples.

Conducting this project during the COVID-19 pandemic was difficult and pushed me to challenge myself and be flexible in my project design. I had to change some of my plans for the safety of myself and potential collaborators. However, I am happy with the way all of this turned

out and am really thankful to both my client and my professors for inspiring me as I undertook this project.

# APPENDIX A

# AILLA POP-UP SURVEY

English version:

The pop-up survey on AILLA's website will be used to collect data on user demographics and to recruit research participants for semi-structured interviews. Participation in this survey is entirely voluntary and participants are welcome to exit the survey at any time.

**Data to collect:** Gender, age, nationality, ethnicity, native language, secondary languages, education, occupation, why are you using AILLA, frequency of AILLA use, what other archives do they use (if any)

**Questionnaire:** This online survey will be used to collect data on user demographics and to recruit research participants for semi-structured interviews. This research project is being conducted by Eden Ewing as part of their thesis research in the Master's in Applied Anthropology program at the University of North Texas. This survey is estimated to take approximately 5 minutes to complete. Participation in this survey is entirely voluntary and participants are welcome to exit the survey at any time.

- Yes, I consent
- No, I do not consent

1. What language would you like to see the survey in?
   a. English
   b. Spanish
2. What is your purpose in using AILLA today? Select all that apply.
   a. Learn about my language/cultural heritage
   b. Class assignment
   c. Research on a language
   d. Other (specify)

   *If answered A:*

   1. What language are you learning about?
   2. Do you identify as Indigenous?
      a. Yes
      b. No
   3. If yes, in what way?

a. Specify

*If answered B:*

1. Are you a student?

   a. Yes

   b. No

*If answered C:*

1. What is your current occupation?

2. What kind of research are you conducting with AILLA? (respondents can type in their own answer here)

*If answered D:*

1. Specify (respondents can type in their own answer here)

2. What is your current occupation?

Questions for all respondents:

1. How old are you?

2. What is your gender identity?

   a. Male

   b. Female

   c. Other

   d. Prefer not to answer

3. In what country do you currently reside?

4. What is your current education level?

   a. Less than middle school

   b. Middle school

   c. High school/secondary school

   d. Some college

   e. Bachelor's degree

f. Master's degree

g. PhD or Doctoral Degree

h. Prefer not to answer

5. Is this your first time accessing AILLA?

   a. Yes

   b. No

6. If no, how often do you use AILLA?

   a. Every day

   b. A few times a week

   c. Once a week

   d. Twice a month

   e. Once a month

   f. Between 1 and 5 times a year

   g. Less than once a year

7. If it's not their first time using AILLA: On a scale of 1-5, how well does AILLA meet your needs?

   a. Not well at all

   b. Not very well

   c. Well

   d. Very well

   e. Extremely well

8. Are there any other archives that you use?

   a. Yes

   b. No

9. If yes, which ones?

   a. The Endangered Language Archive at the SOAS University of London

b. The Language Archive at the Max Plank Institute for Psycholinguistics

c. Other (specify)

10. Would you be willing to volunteer for a Skype or Zoom interview about how you use AILLA and how it could be improved?

a. Yes

b. No

11. If yes, please provide your email address:

Spanish version:

*La encuesta emergente en el sitio web de AILLA se utilizar*á para recopilar datos sobre la demografía de los usuarios y para reclutar participantes de la investigación para entrevistas semiestructurades.

Datos a recoger: Género, edad, nacionalidad, etnia, lengua materna, idiomas secundarios, educación, ocupación, por qué está usanda AILLA, frecuencia del uso de AILLA, qué otros archivos usan (si hay otros)

Cuestionario:

Este cuestionario es opcional. Tomará cinco minutos o menos para completarlo. Toda la información es confidencial y la estamos recogiendo para un proyecto sobre cómo mejorar el apoyo comunitario para diferentes grupos de usuarios.

Esta encuesta en línea se utilizará para recopilar datos sobre la demografía de los usuarios y para reclutar participantes de la investigación para entrevistas semi-estructuradas. Eden Ewing está llevando a cabo este proyecto de investigación como parte de su investigación de tesis en el programa de Maestría en Antropología Aplicada de la Universidad del Norte de Texas. Se estima que esta encuesta demorará aproximadamente 5 minutos en completarse. La participación en esta encuesta es totalmente voluntaria y los participantes pueden salir de la encuesta en cualquier momento.

- a. Si, consiento
- b. No, no consiento

1. ¿En cuál idioma le gustaría ver el cuestionario?

a. Inglés

b. Español

2. ¿Cuál es su propósito al usar AILLA hoy? Seleccione todas las que correspondan.

    a. Aprender de mi idioma/patrimonio cultural
    b. Una tarea para una clase
    c. Investigación de un idioma
    d. Otro (especificar)

    *Si respondió A:*

    1. ¿De qué idioma está aprendiendo?
    2. ¿Se identifica usted como indígena?
        a. Sí
        b. No
    3. En caso afirmativo, ¿de qué manera?
        a. Especificar

    *Si respondió B:*

    1. ¿Es usted un(a) estudiante?
        a. Sí
        b. No
    2. ¿Cuál es su nivel educativo actual?
        a. Menos que escuela intermedia
        b. Escuela intermedia
        c. Escuela secundaria
        d. Alguna universidad
        e. Licenciatura
        f. Maestría
        g. Doctorado
        h. Prefiero no responder

*Si respondió C:*

1. ¿Qué es su ocupación actual?
2. ¿Qué tipo de investigación esta haciendo usted con AILLA? (los encuestados pueden escribir su propia respuesta aquí)

*Si respondió D:*

1. Especificar (los encuestados pueden escribir su propia respuesta aquí)
2. ¿Qué es su ocupación actual?

Preguntas para todos encuestados

1. ¿Es la primera vez que accese a AILLA?
   a. Sí
   b. No
2. Si no, ¿con qué frecuencia usa AILLA?
   a. Todos los días
   b. Unas pocas veces a la semana
   c. Una vez a la semana
   d. Dos veces al mes
   e. una vez al mes
   f. Entre 1 y 5 veces al año.
   g. Menos de una vez al año
3. Si no es su primera vez para usar AILLA: En una escala de 1-5, ¿qué tan bien satisface AILLA sus necesidades?
   a. Nada bien
   b. No muy bien
   c. Bien
   d. Muy bien

e. Extremadamente bien

4. ¿Hay otros archivos que usted utilize?

   a. Sí

   b. No

5. En caso afirmativo, ¿cuáles?

   a. The Endangered Language Archive at the SOAS University of London (El Archivo de Idiomas en Peligro en la Universidad SOAS de Londres)

   b. The Language Archive at the Max Planck Institute for Psycholinguistics (El Archivo de Idiomas en el Instituto Max Planck de Psicolingüística)

   c. Otro (especificar)

6. ¿En cuál país reside accualmente?

7. ¿Cuántos años tiene?

8. ¿Cuál es su identidad de género?

   a. Masculino

   b. Hembra

   c. Otro

9. ¿Estaría dispuesto a ser voluntario para una entrevista de Skype o Zoom sobre cómo usted usa AILLA y cómo podríamos mejorarse?

   a. Sí

   b. No

10. En caso afirmativo, proporcione su dirección de correo electrónico:

# APPENDIX B

# SEMI-STRUCTURED INTERVIEW GUIDE

For AILLA users:

An ethnographic, semi-structured interview approach will be conducted with users of the Archive of the Indigenous Languages of Latin America, recruited via the pop-up survey on AILLA's website. Questions should be regarded as discussion topics, rather than as a script that will be read.

Purpose of interview: Demographics of AILLA users (name, age, nationality, Indigeneity, native language, secondary languages, occupation, educational history), motivation for accessing AILLA, how the materials are being used, find out if they use another online language archive

Interview:

- Briefly explain project
  - My name is Eden. I am based at the University of North Texas in the USA. I am an applied anthropology graduate student working with the Archive of the Indigenous Languages of Latin America to provide insights on users of the archive with the hope of providing recommendations to improve support for the archive's users
  - I'm contacting you because I'd like to learn more about you, your motivations for using the archive, and how you use the archive's materials
  - I'd also like to have you show me, using screen share, how you use AILLA on your computer, if that's alright with you
  - Based on this research, a report will be created with recommendations for the archive, which will hopefully be implemented by the archive's staff at the University of Texas at Austin
  - I will also be using this information as part of my Master's thesis
  - I speak some Spanish. However, my ability isn't quite good enough to conduct interviews. This is my interpreter, _______.
- Reiterate consent for video and voice recording
  - I'm very excited to learn from you, but first I'd like to ask your permission to video-record the interview.
  - Everything you say is incredibly important me and I believe that whatever insights you provide will be of help for recommendations on improving community support for the archive
  - The recordings will be kept in a safe, private storage place
  - No personally identifying information will be used in either the report or my thesis

- Would that be alright? Do you have any questions?
- Thank you so much for your time. I really appreciate any information you can give me.

Demographics:

- First, what's your name?
- How old are you?
- Where are you from?
- Do you identify as Indigenous? If yes, how so? In what way?
- What's your first language?
- What other languages do you speak?
- Do you have a job? What's your occupation?
- Can you tell me a bit about your educational history?

Motivation for accessing AILLA:

- What is your purpose for accessing the archive?
- Is it your first time using the archive?
  - If not, how often do you access it?
- Are you a member of a group or organization that uses the materials from AILLA?
  - Are you collaborating with anyone, like a school or non-profit organization, for the purpose of language revitalization? Can you tell me a bit about that?
- What kinds of information do you look for?
- Do you usually find the information you're looking for?
- What do you do with the information?
- Can you give me an example, maybe the last time you searched AILLA for something?

Demonstrating usage

- At this point, could you show me how you usually access AILLA and navigate around it?

- Let’s start screen sharing [walk them through the process of sharing their screen]
- OK, can you go to AILLA like you usually do?
- [after they are there] where do you usually go from here? Then what do you do? Can you show me your usual ways of navigating around the site?
- What is a typical task that you would do? Could you do this now, and kind of talk me through what you are doing?
- [keep going like this until they have demonstrated all the different things they usually do on AILLA and the parts of the website they go to; if they are not so familiar with AILLA you can modify your questions a bit, like if they say they want to do X but aren’t sure how, you could ask “how do you think you might do X Where do you think you might look for that?]
- [end screen sharing]

How AILLA’s materials are being used:

- How do you use the materials from AILLA? Have you created anything with their materials?
  - [if teacher] Have you used their materials to create any teaching material? How do you use those? Who uses that? How do they use them?
- Which materials have been the most useful to you?
  - Why? Can you give an example?
- What has been your most exciting discovery on AILLA? Explain
- What has been your most disappointing experience on AILLA? Explain

Find out if they use another archive:

- In addition to AILLA, do you use other online archives?
  - If so, which ones?
  - Why do you access _____?
  - How do you use their materials?
  - What are strengths of each one? Examples?
  - What are limitations/weaknesses of each one? Examples?

Suggestions for AILLA:

- If not asked in preceding section: what do you see as the strengths and weaknesses of AILLA
- Do you have any suggestions for how it could be made more useful to users?
- Are there any problems you've had with the website or the materials?
    - How do you think the archive could fix that?

Wrap up:

- Those are all the questions that I have for you. Is there anything else I should have asked you?
- Do you have any questions for me?
- Please feel free to contact me via email if you think of anything else you'd like to tell me
- Thank you very much. I am so grateful to you for your time and all the information you've given me

For archivists at TLA and ELAR:

An ethnographic, semi-structured interview approach will be conducted with archivists of The Language Archive at the Max Planck Institute for Psycholinguistics and the Endangered Language Archive at the SOAS University of London library. Questions should be regarded as discussion topics, rather than as a script that will be read.

Purpose of interview: Identify archive manager knowledge of user groups

Introductions:

- Briefly explain project
    - My name is Eden. I am based at the University of North Texas in the USA. I am an applied anthropology graduate student working with the Archive of the Indigenous Languages of Latin America to provide insights on users of the archive with the hope of providing recommendations to improve community support
    - Susan Kung suggested I contact you because there is overlap between AILLA users and ELAR/TLA users, and it might be interesting to compare the archives

- My goal is to find out if there are users that utilize more than one online archive and why that may be?
- Based on this research, a report will be created with recommendations for the archive, which will hopefully be implemented by the archive's staff at the University of Texas at Austin
- I will also be using this information as part of my Master's thesis

- Reiterate consent for video and voice recording
  - I'm very excited to learn from you, but first I'd like to ask your permission to video-record the interview
  - I believe that the insights you can provide on your archive will be very useful for my project
  - The recordings will be kept in a safe, private storage place
  - The information from this interview will be used in both my report to AILLA and in my Master's thesis. However, I won't write about anything that would reveal something negative about you.
  - Would that be alright? Do you have any questions?
- Thank you so much for your time. I really appreciate any information you can give me.

ELAR/TLA and Interviewee Overview

- What is your role at ELAR/TLA? How long have you been working at the archive?
- Could you tell me about ELAR/TLA from your perspective? How would you define the archive's purpose?
- How do you think your archive differs from AILLA and ELAR/TLA?
- Can you tell me something that you think is special about your archive?
  - Why do you think that?
- What platform does the archive use?

Identification of User Groups and How They Use Archive:

- What do you know about who the archive's users are?
- What are the main user groups? What uses do they put the archive materials to?

- What data do you collect about users? Have you done user research? If so, what did it look like?
- Have you had ELAR/TLA users contact you?
  - If yes, can you describe the different types of users who have contacted you? Give a few examples?
  - If no, do you know of anyone else at the archive who has been contacted by users?
- What do you believe are the most common types of user? Demographics? Why?
- What do you think are the most common reasons for accessing your archive? Why do you think that is? A few examples?
- What do you know about Indigenous users of the archive?
  - Have they contacted you? How common is that? A few examples?
  - If no, what do you think about that?
- Do you know what the most common languages accessed at ELAR/TLA are?
  - How do you know that? Why do you think that is?
- Do you know of any research projects that users are utilizing the archive's materials for? If yes, examples? What fields? Linguistics? Other fields?
- Do students access the archive as part of their coursework?
  - At your university or at other universities that you know of? Examples? What fields?

Suggestions for Language Archives

- I understand that language archives, like any other technology, are constantly evolving. What do you regard as significant accomplishments of your archive, in terms of its functionalities and offerings to users? (To Eden: keep in mind that TLA evolved from DOBES, so this will come up in the discussion with the TLA manager)
- What do you see as the next tasks you want to undertake to keep moving the archive forward?
- Do you think there are any general challenges facing language archives?
  - If so, what kind?
- Is there information you wish you had about the users and their uses of the archive?

Wrap up:

- Those are all the questions that I have for you. Is there anything else I should have asked you?
- Do you have any questions for me?
- Please feel free to contact me via email if you think of anything else you'd like to tell me
- Thank you very much. I am so grateful to you for your time and all the information you've given me

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