Documenting Hawai'i's Sign Languages

Samantha Rarrick
University of Hawai'i at Mānoa

Brittany Wilson
Independent Scholar

The Sign Language Documentation Training Center (SLDTC) offers workshops and linguistic training to users of threatened sign languages: currently American Sign Language (ASL) and Hawai'i Sign Language (HSL). This project originated as a spin-off of the Language Documentation Training Center (LDTC), launched in 2004 by graduate students in the Department of Linguistics at the University of Hawai'i at Mānoa. In its third iteration, SLDTC has aimed to train users of threatened signed languages to document their own languages in ways that make the information useful for those interested in these languages. The SLDTC also aims to increase awareness of language endangerment and encourage signers to think critically about language revitalization, especially as it pertains to their own languages. The work has been rewarding, but not without its challenges, including technological and orthographic constraints, as well as the challenges of re-adapting spoken language materials for sign languages.

1. Introduction[1] Since 2004, the graduate students of the Department of Linguistics at the University of Hawai'i have run the Language Documentation Training Center (LDTC), which is dedicated to reaching out to speakers of underdocumented languages at the university and teaching these speakers the fundamentals of linguistics necessary to document and record their languages. In 2013, the LDTC expanded to Kapi'olani Community College (KCC), which boasts programs in American Sign Language (ASL), ASL/English interpretation, and the Kapi'olani Deaf Center. KCC's connections with the Deaf[2] community in Honolulu allowed us to set up the Sign Language Documentation Training Center (SLDTC), which aims to help Deaf students and academics document American Sign Language, Hawai'i Sign Language, and other underdocumented sign languages.

The pilot program at first sought to replicate the LDTC workshops, but fundamental differences between the documentation of spoken and sign languages (Schembri 2010; Sze et al. 2012; Zeshan 2007) forced organizers to reconsider the format. The SLDTC's new goal is an entirely video-based documentation, with annotations done

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[1]We would like to thank Jan Fried and James Woodward for all of their support and extensive involvement in the SLDTC.

[2]Consistent with literature on sign languages (starting with Woodward 1972), we use 'Deaf' to refer to members of the Deaf community, while 'deaf' refers to individuals' hearing status.

via the free, open-source software ELAN. In addition to learning proper video documentation techniques, and how to use ELAN, participants also attend workshops in various aspects of sign linguistics, such as phonology, morphology, and syntax. They learn about language endangerment around the world, and how language endangerment affects sign languages and sign language communities in particular.

Though it has been thoroughly restructured, the SLDTC is still a pilot project—the feedback and results from this semester's projects will be integrated into the SLDTC workshop series in the future. Like the LDTC, the hope is that these projects will benefit both the language users who author them, graduate students involved in the workshops, and researchers who may be interested in these languages in the future.

2. From LDTC to SLDTC   The Language Documentation Training Center (LDTC) is an initiative started by graduate students in the Department of Linguistics at the University of Hawai'i at Mānoa in 2004. The LDTC seeks to serve speakers of endangered and underdocumented languages in the Honolulu area, particularly those who are studying in the UH system. The current model consists of ten weekly workshops held each semester in which participants work one-on-one with graduate student mentors. The majority of graduate student volunteers assist with the LDTC as a form of community service, with the additional goal of improving their linguistic and language documentation skills.

In addition to learning linguistics and language documentation skills, LDTC participants are also educated in issues of language endangerment and extinction. Many participants are personally unaware of these threats to their languages and cultures, even as their own languages face endangerment and extinction. Between 2004 and 2012, the LDTC has contributed to the basic documentation of over 90 languages.

However, the languages documented were all spoken languages. After the recognition of Hawai'i Sign Language (HSL) as a distinct language in February of 2013 (Lambrecht et al. 2013), LDTC members sought to expand the program to include sign languages used on the island of O'ahu. Here, American Sign Language (ASL) is primarily used by the Deaf community and is the language of education for Deaf children at Hawai'i School for the Deaf and Blind in Honolulu. HSL, however, is critically endangered and used by a handful of elderly signers, all of whom are also users of ASL (Lewis, Simons & Fennig 2015). These two languages are the primary sign languages of Hawai'i, and the current focus of SLDTC.

3. Sign language endangerment   Signed languages are not unique in facing extinction: the current language endangerment crisis is widespread, and may affect as many as half of all languages on Earth before the century's end (Krauss 1992:6). Language endangerment usually occurs as a result of language contact, when users of two or more languages are brought together. This may lead to language shift, wherein a group of speakers gives up their original language, often for political or economic reasons (O'Shannessy 2011). In some cases, the switch to a new language might not be voluntary. Compulsory education in a national language, or laws criminalizing a language, may leave people with little choice but to sacrifice their native tongues.

Even if these laws are later eradicated, deeply affected groups may lack the resources necessary to recover from the damage done (Grenoble 2009).

At first glance, signed languages may seem safe from many of these threats, as deaf signers cannot simply give up their languages for the spoken languages of the majority. In reality, these factors all affect signed languages as well (Nonaka 2004:739; Schembri 2010). Contact with larger national signed languages may influence signers to give up their indigenous languages, a process currently underway in Thailand, as the dominance of Thai Sign Language pushes indigenous signed languages out (Woodward 2003; Nonaka 2004). Signed languages as a group can also be the targets of damaging educational policies and legal discrimination, such as educational policies in the United States that encouraged oralism—often unsuccessful techniques with the goal of training deaf pupils to use spoken language—at the expense of ASL for more than fifty years (Woodward 1982:15).

Signed languages may also face risks that spoken languages do not. One of these factors is simple biology: though signed languages are not exclusively used by the deaf, the deaf compromise the majority of users of signed languages (Klima & Bellugi 1979). As local genetics play a role in congenital deafness, exact figures vary, but according to the World Health Organization the average global incidence of child-onset hearing loss is 175 per 100,000 people (Mathers et al. 2000:19). This number does not distinguish between children who became deaf before acquiring spoken language and those who became deaf after, but it is clear that deaf people, the likely users of signed languages, will be an extreme minority in nearly every community.

The relatively low incidence of deafness adds another complication as well: the majority of deaf children are born to parents who can hear (Senghas & Monaghan 2002:75). Intergenerational transmission is the first of nine factors used by UNESCO to quantify levels of language endangerment (Grenoble 2011:39). While intergenerational transmission is generally understood to consist of a speaker acquiring a language at home from her or his parents, in the case of many deaf people this sort of intergenerational transmission is out of the question. Instead, signed languages are often learned from peers, and acquisition is often dependent on the educational environment, such as residential schools for the deaf (Meir et al. 2010; Senghas 1995; Woodward 1982).

Other minority group children often have a refuge in the home from such cultural and linguistic oppression. Deaf people often do not have this luxury. For instance, more than 90% of deaf children who attended residential schools in the United States do not have parents who belong to the same minority group as they do—namely the Deaf community. Thus deaf children are much less protected from cultural and linguistic discrimination than children from other minority groups (Mitchell & Karchmer 2004; Woodward 1982:15).

This dependence on the educational establishment can leave signed languages very vulnerable to educational policy threats, and this in turn is a larger issue: signed languages and users of signed languages are generally severely marginalized. This marginalization and isolation can leave users of signed languages even more vulnera-

ble to language endangerment and disempowerment than speakers of spoken minority languages.

Finally, signed languages face another threat: technology. As Michael Walsh (2005) has observed, "[Indigenous signed languages] can be vulnerable because recent technologies have made it possible for people to be 'saved' from being deaf" (p. 297). Australian Sign Language (Auslan), a national language with government recognition and institutional support, is currently endangered with perhaps 6,500 signers, most of whom are older than forty years of age (Johnston 2004:366). The threat to this language is not one of language contact—at least, not one of signed language contact, since there is no signed language taking the place of Auslan in Australian deaf people's daily lives. Instead, it is deafness that is increasingly rare, a fact attributed to prenatal genetic screening, the prevalence of cochlear implants (Johnston 2004), and medical advances like the eradication of maternal rubella in developed countries like the United States (Reef & Cochi 2006).

Genetic screening, the first of these technological threats to signed languages, is a very recent development, made possible by the Human Genome Project. Genetic factors account for "about 50% to 60% of severe to profound congenital and early-onset deafness" (Dillehay 2011:27). Many of these factors have been identified, and researchers are likely to identify more (Dillehay 2011; Johnston 2004). The availability of prenatal screening certainly does not guarantee selective elimination of pregnancies; it can serve many purposes, such as educating parents and allowing them to prepare for a special needs child. However, the possibility of selective termination of pregnancies is present: "screening may not seem desirable nor necessarily lead to termination of a pregnancy, [however] early indications and preliminary attitudinal research indicates that for a sizable minority (at least 40% of hearing parents), it would" (Johnston 2004:369).

Cochlear implants also pose a threat to signed languages. These are small electronic transmitters, surgically placed behind the ear and beneath the skin, that transmit sound as electronic impulses directly to the auditory nerve ("NIDCD Fact Sheet"). This technology has existed for several decades, and as of 2010 has been implanted in 219,000 people worldwide ("NIDCD Fact Sheet"), some of whom go on to fully participate in hearing society and report a higher quality of life (Dillehay 2011:28). Recent developments have allowed this surgery to be performed at increasingly younger ages, now as young as six months (Paludneviciene & Leigh 2011:3). The implants are highly controversial within the Deaf community, and have been known to have medical complications (Lane 2005; Marschark 2007; Most, Wiesel & Blitzer 2007). However, many hearing parents,choose implants for their children, particularly in developed countries where they have access to this treatment (Dillehay 2011:32), and this in turn is having an effect on the demographics of Deaf communities.

4. SLDTC pilot structure   The Signed Language Documentation Training Center (SLDTC) is an ongoing workshop series, piloted in February of 2013. It is supported by the joint efforts of Kapiʻolani Community College (KCC) students and faculty, and graduate students in the Department of Linguistics at the University of Hawaiʻi at

Mānoa (UHM), with the primary goal of increasing the information available about signed languages to researchers, language users, and community members via the internet. This is accomplished with the workshop's final product: a website detailing information about the speaker and their language, with descriptions and examples of the language's use.

The initial SLDTC pilot phase consisted of eight workshops led by three mentors and six participants. These workshops were based heavily on pre-existing LDTC workshops, which led to a variety of unanticipated problems, despite the relative success of the program. The topics covered in this phase were as follows:

- Sign Language Documentation

- Recording

- Transcription & Translation

- Syntax

- Morphology

- Phonetics & Phonology

- Sign Language Endangerment & Conservation

Each of these topics corresponded to a section of the web page template each participant was working towards filling out. There were also typically between one and three ASL interpreters available throughout the workshops, as none of the mentors were fluent signers. In essence, the SLDTC pilot was simply a translated version of the existing LDTC workshops, which caused a variety of problems amongst the limited successes.

5. SLDTC pilot results   There were a variety of issues with the pilot workshop series that began SLDTC. Among these were the structure of the pilot itself, the lack of mentors, deaf-friendliness, and the overall lack of a tangible product. Some of these issues were expected, such as the difficulty of transcribing sign languages, while others, like severe time constraints, were not. Despite these difficulties, there were also components of the pilot which were quite useful, and contributed to moving forward with SLDTC.

The original LDTC workshops consist of thirty-minute lectures with slides as visual aids, after which mentors and participants work in pairs on the given segment of the website covered in the lecture. This structure turned out to be one of the major problems with SLDTC. Using text-heavy slides while lecturing was distracting for participants, as it is physically impossible to be looking at both the sign language interpreter and the visual aids simultaneously. Using text-heavy slides led to issues with time constraints as well, as lecturers had to stop and allow all participants to read the slide before discussing it. There were also far too few mentors to establish the one-to-one ratio with participants typical of the LDTC workshops. This led to a heavy

reliance on waiting for an available mentor and an interpreter, further compounding the timing issues.

Another issue with our expectation that SLDTC could run similarly to LDTC was the difficulties with creating a website as a final product, as is done in LDTC. The websites that were attempted during the SLDTC pilot were based on the exact templates used in the LDTC workshops, which turned out to be the biggest issue with the pilot. Using these templates was problematic for a variety of reasons. Firstly, the templates forced participants to use only still photos for recording samples of their languages. Not only was it difficult to force the templates to incorporate an appropriate number of these photos, photographing moving signs was not an intuitive process for the participants. The use of still photos as a recording mechanism was both insufficient to describe the languages documented, but was also not deaf-friendly since it was so unintuitive. Secondly, the average age of the participants in SLDTC was much higher than that of the participants in LDTC, and a lack of technological savviness was problematic and slowed down the workshops. There were also far fewer mentors available to help solve technological issues throughout the workshops, which further compounded problems with time constraints. Because there was so little time to spend on the website, in addition to the other issues, there were actually no tangible outputs of the pilot workshops. This was by far the biggest issue.

There were also several components of the pilot project that were quite helpful and contributed to its success. Firstly, the participants themselves were extremely patient and eager to participate in the project. The project also heavily benefited from volunteer interpreters, including Jan Fried, who became invaluable in connecting mentors with Deaf participants and coordinating workshops, and lecturers, including James Woodward, a renowned expert in sign language linguistics. The classroom was also set up with the desks in a "U" shape, which facilitated discussion amongst the participants, and allowed the few mentors present to walk around and see everyone's computer screens and help as necessary. Finally, by having UHM graduate students work with KCC students, faculty, and other residents, the SLDTC pilot workshop series was able to serve a wide community and help educate and engage signers in the topics of language documentation and conservation.

6. Modifications already implemented In early 2014, several modifications were made to the workshop series. Firstly, the focus changed from recording with still photos to video recordings. This led to the decision to change the final output of the workshops to an annotated ELAN file, as opposed to a website, at least for the time being. This also meant doing away with dictionary software until something better is widely available. The goal of these changes and others discussed below was to increase the deaf-friendliness of the SLDTC.

Changing from still photos to video recordings was a simple and necessary step. Using still photos was not intuitive for the workshop participants and did not sufficiently record language use. Video recordings are crucial for sign language documentation, as there is no universally used transcription system (analogous to the IPA). While there are existing transcription systems, many of these have problems, includ-

ing the fact that many are not easy to type. When filming stories from participants, it also became apparent that video recordings of sign languages must be recorded differently than video documentation for spoken languages. In order to accurately capture a sign, it is important to include multiple cameras and angles in order to fully capture a signer's use of three-dimensional space. Unfortunately, we have not yet had the tools necessary to do this, but have successfully made several recordings using a single angle with a single camera.

After recording a short text in each of their languages, participants uploaded the files to ELAN. We chose this piece of software because it is free and open-source, allowing for use on both Mac and PC platforms. It is also quite intuitive to use with video files, including multiple synchronized video files. This feature will be especially useful if we are able to use multiple recordings from multiple angles in the future. In ELAN, participants add a new tier of analysis each week as they progress through the workshop, focusing on glossing, translation, morphology, syntax, and other topics. This was an especially effective modification, as it allowed participants to work with their data in a way that is hands-on and easy to learn.

In order to increase deaf-friendliness, each workshop was also restructured. Firstly, we did away with the text-heavy slideshow presentations, which were distracting and not especially informational for participants. We also shortened the lectures in order to make time for working as a group, as opposed to only working one-on-one with a mentor. Finally, starting with a video recording and working towards a time-aligned ELAN file as a final project was more intuitive for participants. Having something with tangible results at the end of each workshop and engaging in hands-on activities was easier for participants and significantly increased the deaf-friendliness of the SLDTC workshop series.

7. Future modifications   While many modifications have already been made, there are several modifications yet to be fully made and implemented. The first of these is translating the lectures into ASL. This step is ongoing and designed to make the lectures more accessible to Deaf participants and to lessen our reliance on interpreters. The video files will also be sent to the participants, which will allow them to go back and reference them while working on their projects at home. Finally, having these videos available will be useful if SLDTC expands and is repeated at other colleges or universities, as has been done with LDTC.

Secondly, the recordings and annotated ELAN files created during the workshop series are not yet publicly available. The primary reason for this is that the existing LDTC website is not designed to support these sorts of files. In order to fix this, the website would need a fairly substantial overhaul which is not a feasible short-term project. It is, however, a necessary step in making the products of the SLDTC workshops maximally useful and available to both community members and researchers. While many modifications have already been made to improve the workshop series, there are more long-term projects which have yet to be implemented.

8. Summary   Founded in 2013, the SLDTC works to teach users of endangered sign languages how to document and begin to describe their own languages. During the pilot phase, we tried to work with materials from the spoken workshops which had been modified slightly. This did not work for a variety of reasons, including the fact that the approach was simply not deaf-friendly. We have now completely overhauled the workshop series to make the materials more approachable and better suited for a deaf audience. Some of these changes have included working in a more hands-on way by creating and annotating ELAN files together. Additionally, we are working to create lecture videos in ASL in order to help standardize the workshops, allow participants to review the materials at home in an accessible way, and to eventually initiate similar training centers at other institutions. There is still much to be learned about best practices for sign language documentation and description, especially when it comes to the involvement of native signers. The results of initial and current instantiations of the SLDTC suggest that hands-on instruction and overall deaf-friendliness are vital to success. As the workshops continue to grow and change, the SLDTC will surely contribute further to our understanding of how to approach sign language documentation.

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Samantha Rarrick
srarrick@hawaii.edu

Brittany Wilson
brittany.inbox@gmail.com