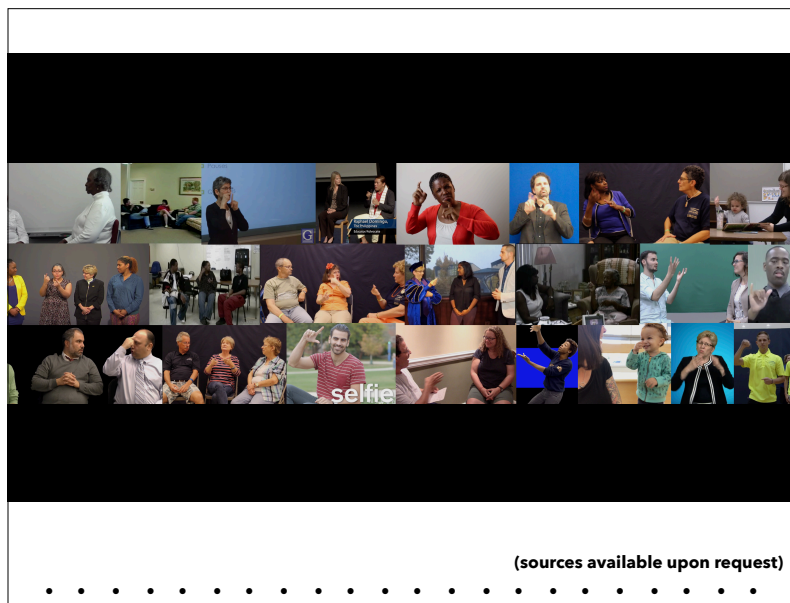




Basically discussing current attempts at Gallaudet to centralize and digitally organize video collections of ASL at Gallaudet. Our ongoing attempts have focused on already existing collections but should be able to absorb new collections as they are formed. We have two main points as you can see in our title = we're talking about this need for documentation to organize all of this information about ASL floating around Gallaudet. And given ongoing misunderstanding about this project, we want to talk today about how this documentation itself is a form of representation for ASL since ASL has no writing system like any other signed languages. So let's talk about this issue for a bit then we'll describe our attempts some more and potential applications. `



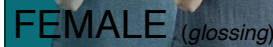
Just a minute of video with all kinds of ASL videos edited together. A lot of these are somewhere at Gallaudet - Gallaudet Video Library, Gallaudet YouTube, CD in a dusty corner, professor's external hard drive... (note some of these were taken from YouTube since I used them one of my classes). If you want a reference or link (if available) for any of these, please let me know.

So, after having seen all of these, even if you don't know ASL yourself, you can see how rich and nuanced language use is? You can see the different representations - different people, different social contexts, different genres. And if you do know ASL, you probably caught some signs and can remember them now - rocket, funny, etc. Now imagine trying to go back and find what you wanted. You need to be able to search for it. We need to be able to represent this into text so we can use that for that purpose. We also use written representation for research. All of us in this room who study language know that we need to rely on some form of frozen representation so we can study it. We can't study language in its raw form - as sound waves or light waves on the air. We need to freeze that behavior somehow. For signed languages, we are unable to rely on already conventionalized written languages like for English or the International Phonetic Alphabet (IPA) that linguists can use to represent any spoken language.

• • • • •

This is glossing. Let's talk about that for a minute.

All images - ASL Signbank, 2018



Stokoe et al (1965)

US<sub><</sub><sup>v</sup>X\* (Stokoe)

ASLWrite

<http://www.aslwrite.com/free/ASLwriteSummary.pdf>

Let's talk about one in particular a bit more - glossing.

# Glossing

(4) Gothic (II Cor. 5:9, Cole et al. (1980, 721))

*inuþ-bis      usdaudjam...      waila    Ø      galeikan    imma*  
because.of-this   we.strive      [well    Ø<sub>NOM</sub>   please.INF   him.DAT]  
« Because of this we strive to please him well »

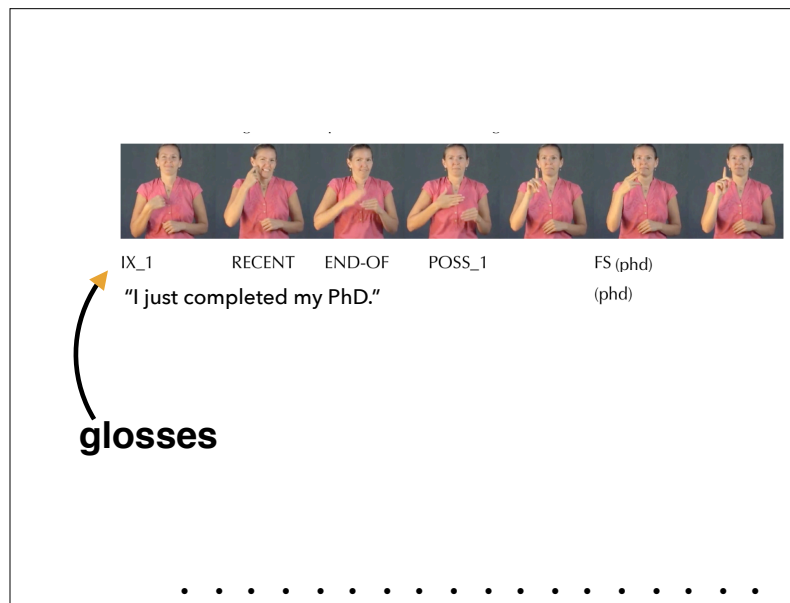
(Haspelmath 2010, 494)

 **glosses**

. . . . .

So what is glossing? It's a literal word for word translation of source text to make it accessible to those who don't know the source language. It's used by linguists or people working with languages - spoken, signed.

Here we see the source language in the top row, the glosses (a literal translation) in the second row, then in the last row a translation to English. This is how glosses are usually used - along with the source language, always.



Glosses used to give access to source text. Thing is... in sign language linguistics, we've gone overboard often showing the glosses without the source text. My colleague Cecily Whitworth once said that it was like studying French through English translations alone.

So note that usually glossing is always linked to primary or source data. In signed language linguistics, that's often not the case (initially technology a barrier since it's hard to share pictures, videos, etc. but that barrier is no longer real these days but the pattern persists)

The problems with the style of representing signed language data with glosses have been well-documented (e.g., Johnston, 1991, 2008; Pizzuto & Pietandrea, 2001; Mulrooney, 2006; Frishberg et al., 2012), yet it appears to remain the most common method, a problem that Slobin refers to as the "tyranny of glossing" (2008). That to date is what our documentation looks like. It's especially problematic for me as a phonologist because there's nothing about the form of ASL signs in these English glosses and speaking of long-term after many of these signs have changed, how do we know what these signs look like? We don't. We're reliant on the English representations here.

**(no source text)**

(29)  $\overbrace{[[RECENTLY\ DOG\ THAT\ CHASE\ CAT]_{S_1}]_{NP}}^r\ COME$   
 HOME  
 'The dog which recently chased the cat came home.'

*Liddell 1980, p. 149*

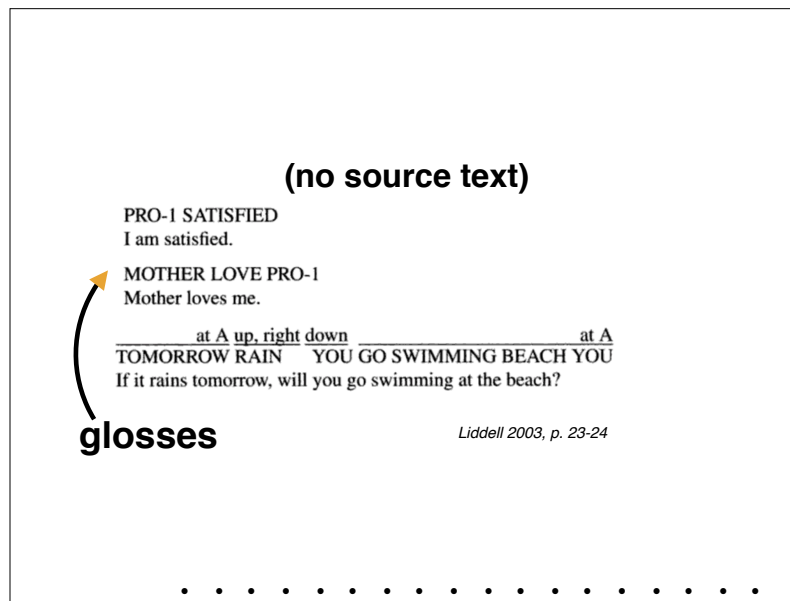
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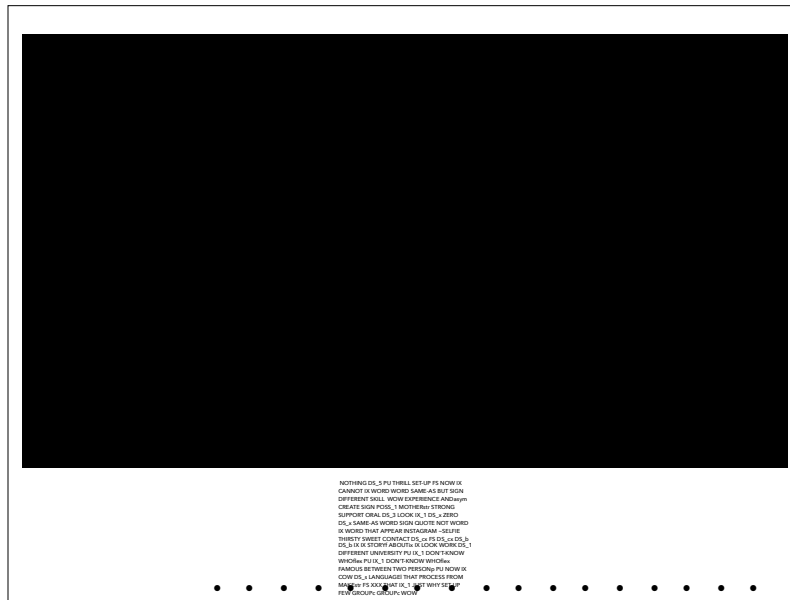
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NOTHING DS\_5 PU THRILL SET-UP FS NOW IX  
 CANNOT IX WORD WORD SAME-AS BUT SIGN  
 DIFFERENT SKILL WOW EXPERIENCE ANDasym  
 CREATE SIGN POSS\_1 MOTHERstr STRONG  
 SUPPORT ORAL DS\_3 LOOK IX\_1 DS\_x ZERO  
 DS\_x SAME-AS WORD SIGN QUOTE NOT WORD  
 IX WORD THAT APPEAR INSTAGRAM ~SELFIE  
 THIRSTY SWEET CONTACT DS\_cx FS DS\_cx DS\_b  
 DS\_b IX IX STORYf ABOUTix IX LOOK WORK DS\_1  
 DIFFERENT UNIVERSITY PU IX\_1 DON'T-KNOW  
 WHOflex PU IX\_1 DON'T-KNOW WHOflex  
 FAMOUS BETWEEN TWO PERSONp PU NOW IX  
 COW DS\_s LANGUAGEI THAT PROCESS FROM  
 MAKEstr FS XXX THAT IX\_1 JUST WHY SET-UP  
 FEW GROUPc GROUPc WOW

. . . . .

Our project GUDA is trying to address this issue of representation in ASL. We want to minimize the “tyranny of glossing” and bring video collections themselves that are tagged for everything (metadata, signing that happens on videos, etc) to the forefront (or give more prominence to videos themselves). We think that documentation of primary source videos itself is the goal and will represent our language use even better. We’ll talk about those primary source videos next.



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So there are thousands of videos, starting in 1900s and exponentially increasing through the years

They're scattered across campus, although some are hosted in the Gallaudet Video library

They're in different formats - VHS, CDs, different digital formats

They're not processed consistently - if at all - meaning they're not named in the same way, organized with the same metadata and so on



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# **“DIGITAL DETRITUS”**

**BIRD AND SIMONS (2003)**

. . . . .

All of this means that they're inaccessible - basically 'digital detritus' as described by Bird and Simons in their 2003 article on portability of data for language documentation

## Our current need

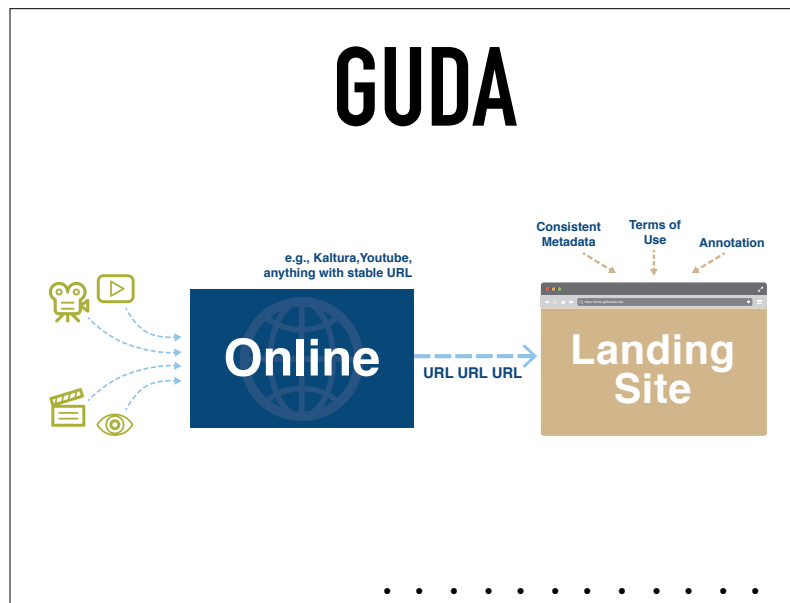
to store and archive videos  
consistent organization  
accessibility  
sustainable  
*(across different needs and over time)*

**= accessible digital curation  
system for stewardship of  
ASL videos**

. . . . .

Our current need - and this has been echoed by many - is a place to store, consistently organize, access (make machine-readable) and share our videos. And it's something that needs to be sustainable - maintained over time.

At Gallaudet, we've done this management of our videos somewhat individually in departments and in the Gallaudet Video Library which uses the Telescope Digital Assets Management program. It is currently under the domain of University Communications. But it has no more financial support and needs to be updated or we need to move to other digital resources asset management.



Where are we now? What has GUDA done so far? See the graphic - it shows our overall vision. We're interested in finding all of those existing video collections and making sure they have a stable URL then pointing to them on a landing site. Once there, we'll have consistent metadata (done in similar format); terms of use; annotation to make the videos searchable. Ongoing issues - funding (we need some); sustainability (this landing site is not an archives - it's not a long-term solution. It's an initial step in something that will take our entire careers to do); portability (we need to consider how to make sure this is accessible across platforms and over time. e.g., Bird and Simons 2003; re-consent (seeking permission from those on video to continue to share their data)



Luckily we have infrastructure now - SLAAASH data protocols and ASL Signbank.

SLAAASH is a project that has been focused on making an ASL acquisition video project (with over 400 videos of Deaf children interacting with their Deaf family or friends for the first few years of their lives) consistently annotated and archived. So while SLAAASH's data focus is this dataset, it also sets up a data protocol that can be used by other projects like ours. For example, we can use its annotation conventions and we can use the ASL Signbank (next slide).






The screenshot displays the ELAN 6.0.0-alpha software interface, which is used for annotating video data. The top menu bar includes File, Edit, Annotation, Tier, Type, Search, View, Options, Window, and Help. Below the menu is a toolbar with various icons for navigation and editing. The main window is divided into several sections:

- Video Window:** Shows a video of a person signing.
- Annotation List:** A table with columns for 'Nr', 'Annotation', 'Begin Time', 'End Time', and 'Duration'. It lists annotations such as '1 It's a horse.', '2 Yeah.', '3 Yes I'm riding a horse.', '4 I want to ride my horse.', '5 Where is my horse?', '6 Mame!', '7 My horse! Mine.', and '8 I want to ride my horse!'. A note indicates 'English conventions mostly based on CHILDES CHAT conventions'.
- Timeline:** A detailed timeline showing the progression of the video. It includes various linguistic and phonetic markers such as 'HORSE', 'Yeah', 'Yes I'm riding a horse', 'Mame!', 'My horse! Mine.', and 'I want to ride my horse!'. The timeline also shows various phonetic features like 'proximalized (full body)', 'repetition or lack of', 'notes can be added to the "phon" tier for extra phonetic information', 'XXX is used to identify productions that are not visible to the annotator', 'YYY - definitely a sign or word but indecipherable', 'DS(sic) - ID gloss used for constructed action/autogloss blend', 'false start (interruption). There are 5 types of false start codes.', 'interruption by other', 'self-interruption', 'retracing without correction', 'retracing with correction', and 'retracing with reformulation'.

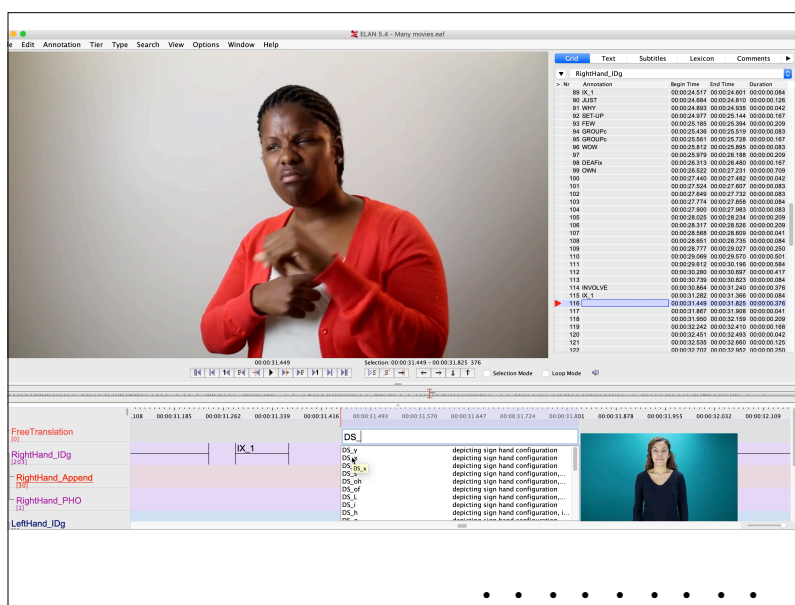
At the bottom of the screenshot, the text 'SLAAASH annotation conventions' is displayed, followed by the URL <http://bit.ly/SLAAASHGuide>.

Luckily we have infrastructure now - SLAAASH data protocols and ASL Signbank.

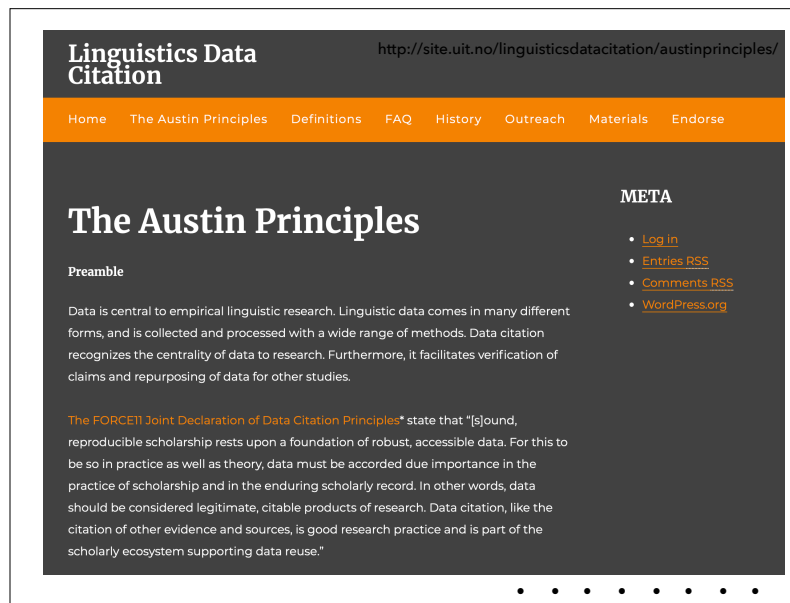
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ASL signbank (Hochgesang, Crasborn and Lillo-Martin, 2018)									
<a href="#">Home</a> <a href="#">About</a> <a href="#">Signs</a> <a href="#">Feedback</a> <input type="text" value="Search gloss"/> <input type="text" value="Search translation"/>									
Form your query									
<input type="button" value="Search sign"/> <input type="button" value="CSV"/> <input type="button" value="ECV"/> <input type="button" value="Reset"/>									
<a href="#">List View</a> <a href="#">Lemma View</a> Number of matches: 11 out of 3130.									
<a href="#">Add New Sign</a>									
Annotation ID Gloss (American English)	Lemma ID gloss (American English)	Translation equivalents	Handedness	Dominant Handshape	Nondominant Handshape	Location - major	Tags		
	ARTICULATE-SIGN	articulate-sign, chat, conversation, discuss, fluent, fancy-sign, socialize, to perform in sign, to pronounce, to sign something	SymmetricalOrAlternating	-	-	-			
	SIGN	sign, sign language, signing	SymmetricalOrAlternating	-	N/A	-			
	SIGNAGE	billboard, board, board-sign, notice, road sign, sign, signage, square, traffic sign, SIGNboard	SymmetricalOrAlternating	-	N/A	-			
	SIGNATURE	autograph, contract, sign, sign a paper, signature, SIGNpaper	AsymmetricalDifferentHandshape	-	B	-			
	DESIGN	design, draw	AsymmetricalDifferentHandshape	-	B	-			

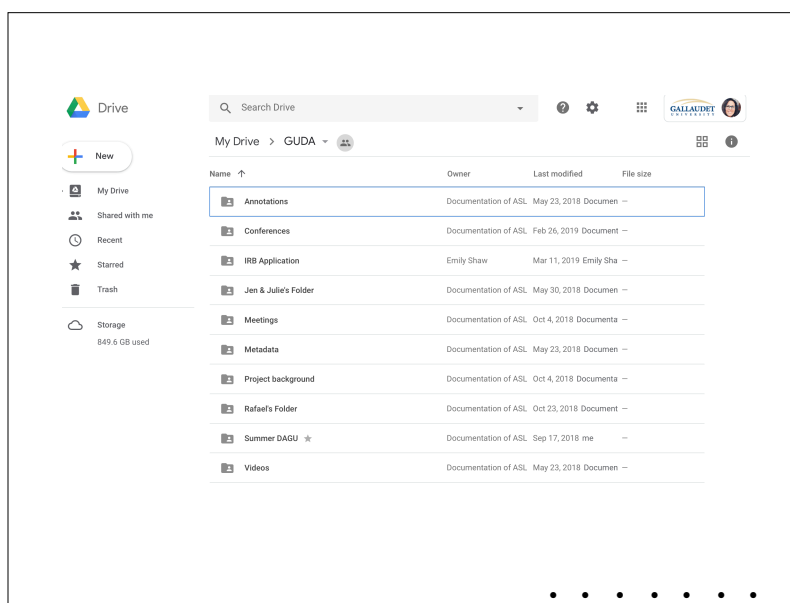
ASL Signbank - this is a maintenance of ID glosses (there are other sign banks for other sign languages - we modeled ours after theirs). ID glosses are “identifying glosses” (unique labels used to represent the same signs)- remember the glossing we discussed earlier - now it’s not the main form of representation like we want but rather a form of labeling data (or ASL signs) so we can find them in the videos we have. More on the next slide.



This screen recording with the video we showed before but in ELAN with the ASL Signbank linked shows how ASL becomes more prominent in the representation



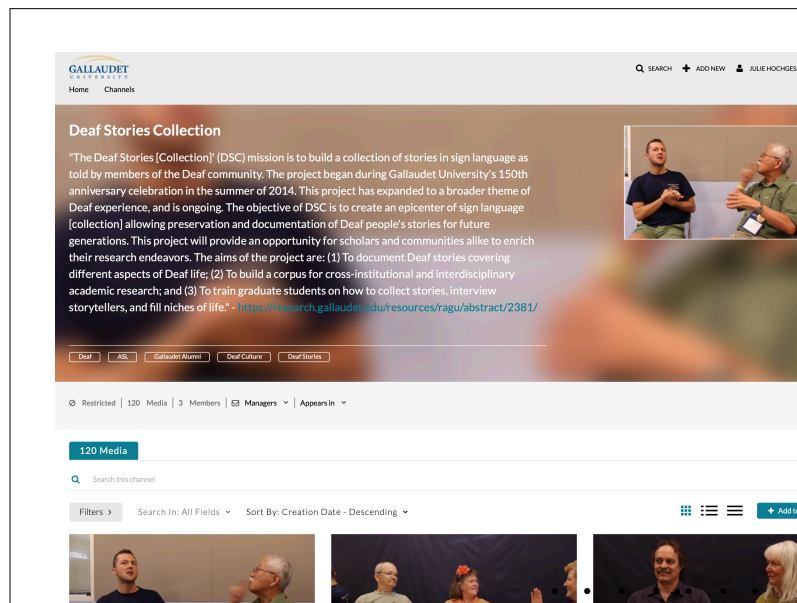
We can also refer to The Austin Principles of Data Citation - which is a general push by linguists to make primary data (spoken, written or signed) accessible. This will be guidance as we develop best practices in making our ASL video collections more accessible to everyone.



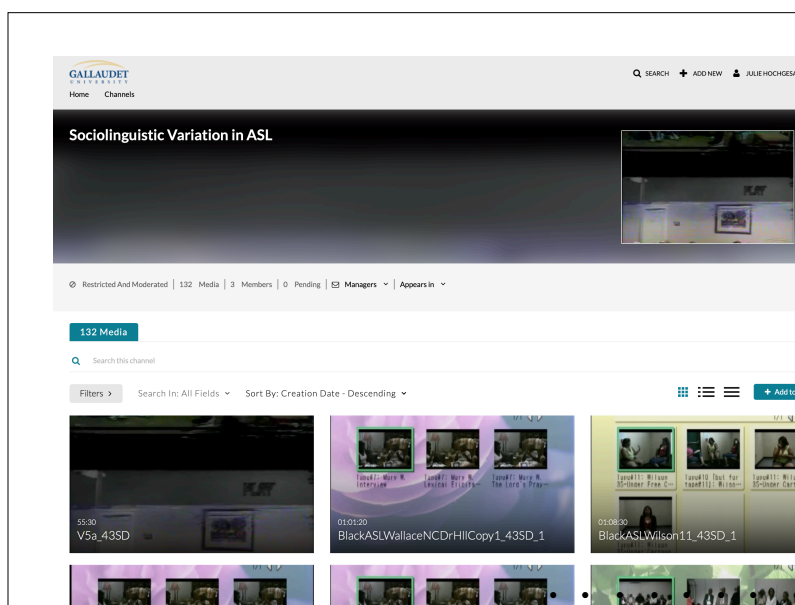
What we have so far - two wonderful graduate assistants (Jennifer and Rafael) who have already organized a lot of our existing ASL videos, a “website” (still not open); using Google drive (Gallaudet Gsuite) to organize our content (some annotated eafs already from a class I taught on corpus linguistics last semester); and Kaltura to host some video collections (hosts Deaf Stories Collection - alumni interviews by ASL and Deaf Studies department; Sociolinguistics variation ASL project by Ceil Lucas et al in 1997 to 2001 - 7 cities, over 200 signers)



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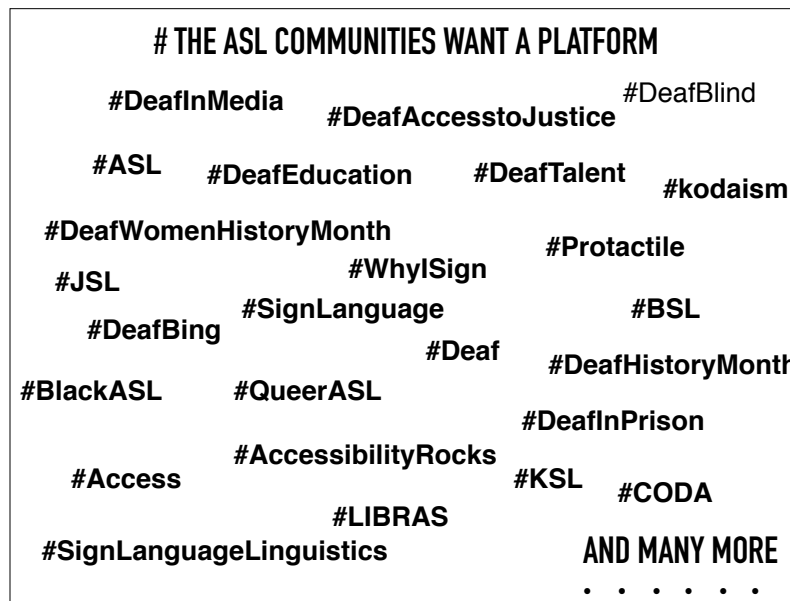
**# THE ASL COMMUNITIES WANT A PLATFORM**

**AND MANY MORE**

. . . . .

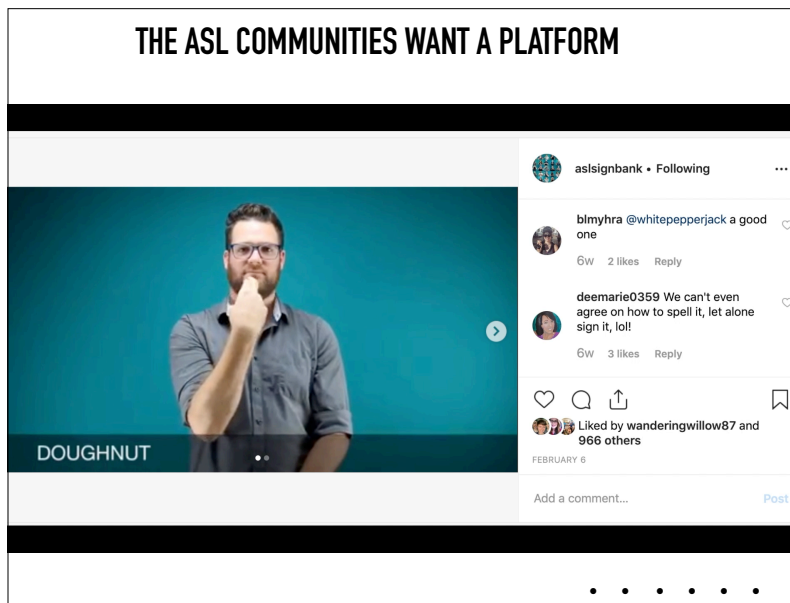
So the theme of this conference is “public good” - I think we’ve demonstrated that it’s a good idea to focus on documentation as representation itself and try to minimize our reliance on glossing; second we are making good progress towards a GUDA. Now, is this something the communities (those at Gallaudet and beyond) want? Absolutely yes.

If you check out social media using these tags, you’ll see how much dialogue there is out there and how much desire there is to see products of the Deaf communities (their ASL stories) accessible for this kind of exchange.



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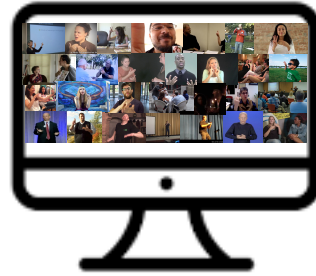
If you check out social media using these tags, you’ll see how much dialogue there is out there and how much desire there is to see products of the Deaf communities (their ASL stories) accessible for this kind of exchange.



And just one specific post on Instagram for one ASL variant of “doughnut” and the many comments that were posted there is a good indicator that there is a lot of interest in having a platform for ASL communities where they can access resources about their communities and language use.

## WHAT'S DIFFERENT ABOUT THIS?

- ▶ Preservation of ASL (since 1900s)  
=monitor corpus (existing signed language corpora are snapshot corpora)
- ▶ Data not all elicited but also naturalistic (i.e., community-generated, "authentic")
- ▶ Provides consistent access to primary ASL documentation (using already existing ASL videos)
- ▶ Deaf ownership (response to "YouTube problem")



. . . . .

GUDA will be a language documentation project that helps preserve over 100 years of video data for ASL use. This means GUDA has the potential to become a “monitor corpus” (a corpus that documents language over time and can track changes over time) as opposed to most (if not all) signed language corpora out there which are “snapshot corpora” (the data collection was collected at a single event representing one specific part of the language user’s experience).

We’ll be focused on existing video collections as well as any new collections that come in being. Most of these are “community-generated” - meaning the communities themselves created these ASL products. Some of the data will be elicited in nature like most corpora projects but mostly spontaneous, naturalistic. (“authentic”). And we’ll be focused on providing access to that (consistent metadata, consistent organization, consistent machine-readability, etc).

Youtube is potentially awesome resource for us but unfortunately looking for appropriate ASL videos are like looking for a needle in a haystack full of ASL students posting their assignments or attempts at music videos (and you end up for hours looking for the right fit for what you need).

## APPLICATIONS

- ▶ Deaf education
- ▶ Interpreting
- ▶ The communities themselves (their stories, their cultural heritage)
- ▶ Advocates
- ▶ A response to YouTube over-representation of ASL
- ▶ Etc

Preservation  
of the  
Sign Language  
By  
George W. Veditz  
Original 1913  
Reprint 1934



<https://www.youtube.com/watch?v=XITbj3NTLUQ>

• • • •

So as we work on developing GUDA, we are always thinking of the end-users who are facing this enormous and currently un-resolved issue of scattered and non-accessible data. Demand is increasing in Deaf education, sign language interpreting, Deaf advocates, and the Deaf communities (their stories, their cultural products, jokes, etc). And of course, this also becomes a resource for those who are not familiar with ASL or the Deaf communities.

## REFERENCES

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- Bird, Steven and Gary Simons. 2003. Seven dimensions of portability for language documentation and description. *Language*, 79(3). 557-582.
- Crasborn, Onno and Han Sloetjes. 2008. Enhanced ELAN functionality for sign language corpora. In *Construction and Exploitation of Sign Language Corpora*. [Proceedings of the 3rd Workshop on the Representation and Processing of Sign Languages, 6th International Conference on Language Resources and Evaluation, LREC 2008, Marrakech, ], edited by Onno Crasborn, Thomas Hanke, Eleni Efthimiou, Inge Zwitterlood and Ernst Thoutenhoofd. 39-43. ELRA, Paris. [http://www.lrec-conf.org/proceedings/lrec2008/workshops/W25\\_Proceedings.pdf](http://www.lrec-conf.org/proceedings/lrec2008/workshops/W25_Proceedings.pdf)
- ELAN (Version 5.4) [Computer software]. (2018, April 04). Nijmegen: Max Planck Institute for Psycholinguistics. Retrieved from <https://nla.mpi.nl/tools/nla-tools/elan/>
- Fenlon, J., A. Schembri, T. Johnston, & K. Cormier. (2015). Documentary and corpus approaches to sign language research. 156-172. *The Blackwell guide to Research Methods in Sign Language Studies*, ed. by E. Orfanidou, B. Woll & G. Morgan. Oxford: Blackwell.
- Haspelmath, Martin. (2010). [https://www.researchgate.net/publication/240290554\\_The\\_change\\_of\\_behavioral\\_and\\_coding\\_properties\\_in\\_constructional\\_grammaticalization](https://www.researchgate.net/publication/240290554_The_change_of_behavioral_and_coding_properties_in_constructional_grammaticalization)
- Hochgesang, J.A., O. Crasborn, & D. Lillo-Martin. (2018). *ASL Signbank*. New Haven, CT: Haskins Lab, Yale University. <https://aslsignbank.haskins.yale.edu/>
- Hochgesang, Julie A., Onno Crasborn, Diane Lillo-Martin. 2018b. Building the ASL Signbank: Lemmatization Principles for ASL. In *Proceedings of the LREC 2018 Workshop 8th Workshop on the Representation and Processing of Sign Languages: Involving the Language Community 11th International Conference on Language Resources and Evaluation, LREC 2018, Miyazaki, Japan*, edited by Eleni Efthimiou, Evita Fotinea, Thomas Hanke, Julie Hochgesang, Jette Kristoffersen, & Johanna Mesch. 69-74 ELRA. [http://lrec-conf.org/workshops/lrec2018/W1/pdf/book\\_of\\_proceedings.pdf](http://lrec-conf.org/workshops/lrec2018/W1/pdf/book_of_proceedings.pdf)
- Liddell, Scott. (1980). *American Sign Language Syntax*. Mouton.
- Liddell, S.K. (2003). *Grammar, Gesture and Meaning in American Sign Language*. Cambridge.
- McEnery, T. & A. Hardie. (2011). *Corpus Linguistics: Method, Theory and Practice* (Cambridge Textbooks in Linguistics). Cambridge University Press.
- Slobin, D.I. (2008). Breaking the Molds: Signed Languages and the Nature of Human Language. *Sign Language Studies*. 8 (2). 114-130
- Stokoe, W., D. Casterline, and C. Croneberg. 1965. *A Dictionary of American Sign Language on Linguistic Principles*. Silver Spring, MD: Linstok Press.

• • •



## DOCUMENTATION IS REPRESENTATION

(LINK TO SLIDES [HTTPS://SHWCA.SE/GUDA](https://shwca.se/guda))

- ▶ Corresponding authors:  
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[emily.shaw@gallaudet.edu](mailto:emily.shaw@gallaudet.edu)



Just in case

## Characteristics of the digital curation system for stewardship of ASL videos

**It will centrally organize (includes application of metadata), annotate (using best practices in sign language annotation), and share existing and new ASL video collections.**

This system will be:

(a) Representative of ASL as it has been used at Gallaudet for the last 100 years, by signers of different ages, races, and sexes, with different educational backgrounds

(b) Comprehensive, in including different kinds of events

(c) Accessible, via a user-friendly web interface free of charge

(d) Machine-readable and searchable, through the use of metadata (both used in language documentation for signed languages and library catalogs) and consistently-applied annotations, following SLAASh annotation conventions and ID glosses using ASL SignBank

(e) Resistant to obsolescence, achieved through interdisciplinary collaboration between GTS, Video Services, Library, Linguistics, ASL/DST, etc

*Requires an advisory board - members of Gallaudet and Deaf community members to oversee and help ensure ownership and sustainability of the project*

just a snapshot of what I'm currently envisioning based on talking with other people and my current experience with language documentation