

Day 1: Introduction and Background

7 January 2020

Overview: Motivating the course; basic background on sign languages, sign language linguistics, and sign language phonology

1 Meet & greet

- Your previous experience with sign languages, if any
- What you hope to gain from this course

2 Why I want to do this course

- Looking through 7 current-ish introductory phonology textbooks yields a total of one sentence about sign languages
- Until recently, my own phonology teaching has been almost exclusively about spoken languages
- Omitting sign languages from our teaching is scientifically undesirable
 - E. g., what if we never taught the phonology of stress languages (like English)—not just their stress phonology, but *anything* about them?
- Omitting sign languages from phonology teaching, or treating them as an advanced, special topic marginalizes and others Deaf people and Deaf cultures
- There are reasons beyond audism why the field is like this
 - Lack of widely-adopted transcription system makes it more work to get data to use in class
 - We can't just go to Wiktionary and find IPA transcriptions for a dozen more words to round out an example or problem set

These two are self-perpetuating, and this course aims to help break the cycle

- Because sign languages are treated as a special/advanced topic, few of us end up feeling competent to include them in our teaching
- There's a strong pedagogical tradition in phonology of classic topics, examples, and problem sets
 - We all rely on this tradition to reduce our prep time
 - But the classics don't include data from sign languages

- Let's watch a talk by Julie Hochgesang (Gallaudet U. Linguistics Dept.), starting at 11:00
 - Inclusion of Deaf linguists and sign languages. Georgetown University Roundtable (GURT) 2019 – Linguistics and the Public Good¹



"Inclusion of Deaf Linguists and Sign Languages in Linguistics"

¹ <https://youtu.be/1tUHS3reLeE>

3 Basic background on sign languages

- Ethnologue.com lists 143 sign languages, from 107 countries
- Several countries recognize a sign language as one of their official languages, though what this means in practice varies
 - New Zealand, Republic of Korea, Philippines, Papua New Guinea, Kenya, Venezuela, Zimbabwe...
 - and many have some other official status for a sign language (e.g., can be used in parliamentary business, official minority language)
 - Kenya, Germany, Iceland, Taiwan...
- Family trees?
 - There is not a strong methodological tradition for classifying sign languages genetically
 - But in some cases the history is known
 - e.g. Cagle 2010 uses a combination of known history and lexical comparison to probe roots of ASL
 - Most aspects of proposed family trees are unsurprising
 - related sign languages in neighboring countries
 - related sign languages in a country and its former colonies
 - But a couple of relationships are not obvious, notably...
 - Descendants of Old French Sign Language are found in many European countries and also (with influence from other sign languages) American Sign Language
 - ASL has in turn been influential in many countries
 - ASL is unrelated to the sign languages found in other English-speaking countries, which descend from British Sign Language

4 Sign languages generally have their origin in homesign

- In the U.S., only about 10% of deaf children have a Deaf or hard-of-hearing parent (Mitchell & Karchmer 2004)
- For most of human history (think no schools, no trains, no internet...), most deaf children have had to figure out on their own how to communicate with their non-signing families
- See brief literature review in Abner et al. 2019, pp. 249-250:
 - homesigning children are the ones who innovate systematicity and structure in their system
 - their family members often don't themselves adopt the structures
 - homesigners tend to be poorly understood by their own families

Helen Keller's recollection of running up against the limits of homesign, around age 5:

“MEANWHILE the desire to express myself grew. The few signs I used became less and less adequate, and my failures to make myself understood were invariably followed by outbursts of passion. I felt as if invisible hands were holding me, and I made frantic efforts to free myself. I struggled—not that struggling helped matters, but the spirit of resistance was strong within me; I generally broke down in tears and physical exhaustion. If my mother happened to be near I crept into her arms, too miserable even to remember the cause of the tempest. After awhile the need of some means of communication became so urgent that these outbursts occurred daily, sometimes hourly.” (Keller & Sullivan 1905, p. 17)

5 From home sign to sign language

- When many homesigners gather together → school sign languages, urban sign languages
 - two schools for Deaf children in Managua, birthplace of Nicaraguan Sign Language in 1970s & 1980s
 - no sign language input provided by teachers
 - American School for the Deaf, birthplace of ASL in 1810s
 - with input from existing sign languages known by teachers and students (Cagle 2010)
 - Throughout history Deaf people have formed communities in bigger cities
- When deafness is prevalent enough in a gene pool that most hearing people have deaf friends and family → shared sign, aka village sign
 - Famous example is Chilmark, Martha’s Vineyard, where for several generations about 4% of population was deaf (Groce 1985)
 - Sign language may be used by hearing and deaf alike
 - Great example of Universal Design, by the way! (though see Kusters 2010)
 - Unlike in the rest of the U.S. at the time, deaf and hearing Vineyarders had similar marriage rates and income, according to Groce
 - Martha’s Vineyard sign was also used by hearing people when convenient, such as hearing fishermen communicating boat to boat
 - Also an important concept in disability studies (see e.g. Bickenbach et al. 1999)
 - impairment (medical)
 - vs. limitations on activity and social participation that result from interaction of impairment with how society is set up
 - consider dyslexia—not a disability until reading became a necessary part of life
 - Martha’s Vineyard case is pointed to as evidence that really the only reason deafness is a disability is because so few hearing people can sign

6 “Sign language” or “signed language”? Two opposing views

- Joann Crips & Anita Small, Canadian Cultural Society of the Deaf, writing in 2004:

“[...] Some people would use this term [signed language] to argue for their own benefit to negate the value of true languages in sign. **They may use the term signed language to advocate for Signed English – Seeing Essential English (SEE1), Signing Exact English (SEE2), or other signed systems that try to represent English on the hands.** These signed systems are often presented and labeled as signed languages because they are visually expressed but they are not languages. [...]

The only context in which the term signed language would be used is if you were describing signed languages versus spoken languages in which case the explicit purpose of the discussion was to refer to the modality of languages rather than referring to the languages themselves. [...]²

- Sacramento State prof. of Deaf studies Don Grushkin on Quora in 2017:

“[...] “sign language” subtly devalues these languages, since you don't ever see anyone talk about “voice language”. [...]

Consequently, some of us have decided to consciously **place signed languages on a semantic par with voiced (not “spoken”) languages by referring to them respectively as “signed” or “voiced”**. In this way, we emphasize that these are all equally languages; it's just that some are presented in the signed modality, while others are presented in the voiced modality.

You will note that I avoided using “spoken” as a descriptor. That is because this term also has been used to devalue signed languages: Hearing languages are “spoken”, while Deaf languages are “signed”. The problem with this is that while we are signing, we ARE speaking — in the sense that we are making an utterance to share information and ideas. Modality is irrelevant, and we want to emphasize that with our signed languages, we are performing the same functions that are performed in voiced languages. There is no need for Hearing people to have a monopoly on the term “speaking” or on the idea of “language”.³

7 Is “sign language phonology” an appropriate term?

- also Don Grushkin on Quora, in 2016:

“It's true that terms like “phonetics”, “phonology”, “phoneme”, having been created by Hearing people in studying their spoken languages, referred to the modality in which their languages are typically spoken: sound. And these spoken languages are produced (in part) with the tongue, hence the root of “language” being ‘lingua’ — tongue. [...] So for a long time, this perception of language as purely sound-based has contributed to audism and the suppression of signed languages.

In 1960 [...] Stokoe felt it was necessary to create new, non-sound-based terms for the components of the signed language he was studying (ASL). Thus, instead of “phoneme” and “phonology”, he came up with “chereme” and “cherology” (from the Greek for “hand”).

² <https://deafculturecentre.ca/signed-language-vs-sign-language/>

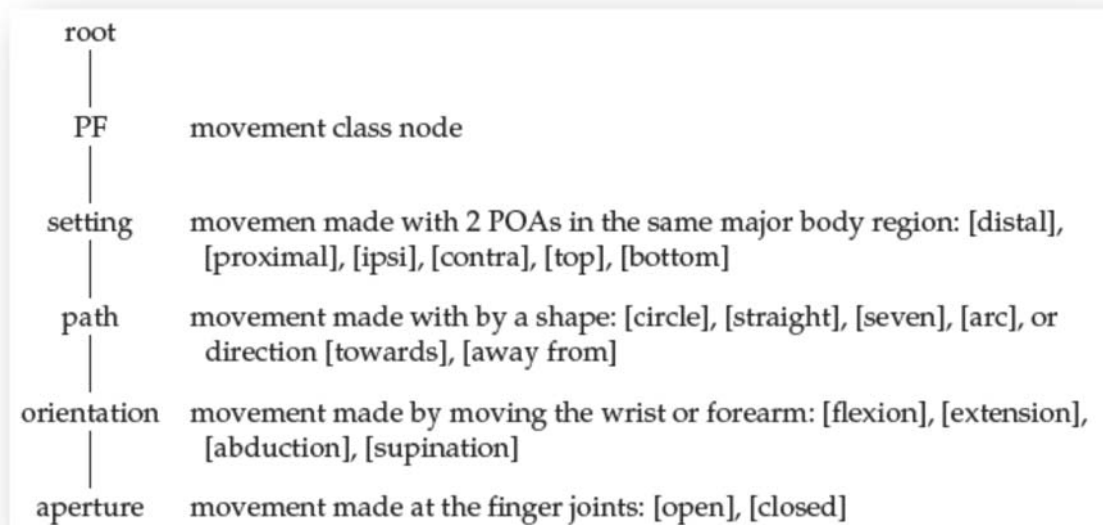
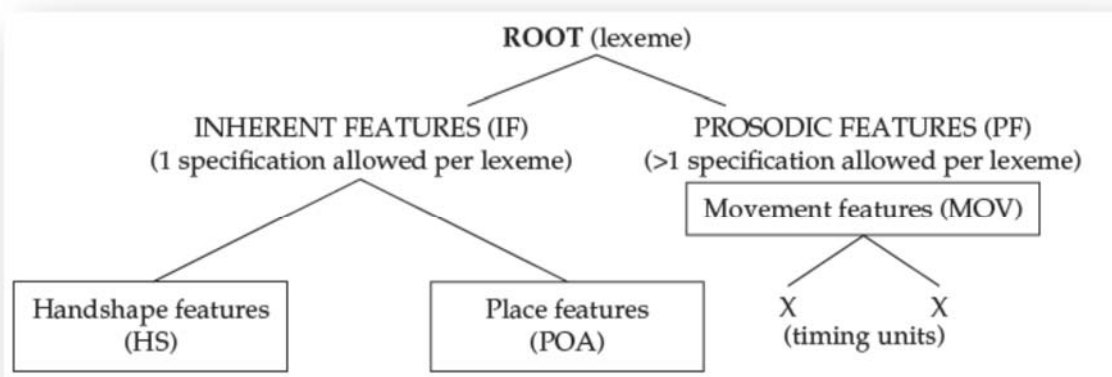
³ <https://www.quora.com/What-is-the-difference-between-Sign-language-and-Signed-language>

Since that time, linguists have come to understand that the principles of language are universal [...], regardless of the modality in which they are spoken. Moreover, we found that the use of **separate terminology for signed language principles contributed to the continued perception of signed languages as “different” from and “not quite equal” to spoken languages**. So the definition of linguistic terminology has changed to destress the role of sound in language in general [...]. Thus, instead of defining a phoneme as “the smallest non-meaningful unit of Speech/sound”, it is now “the smallest non-meaningful unit of language”. This helps establish the universality of language regardless of modality. [...]”⁴

8 Very compressed overview of sign language phonology

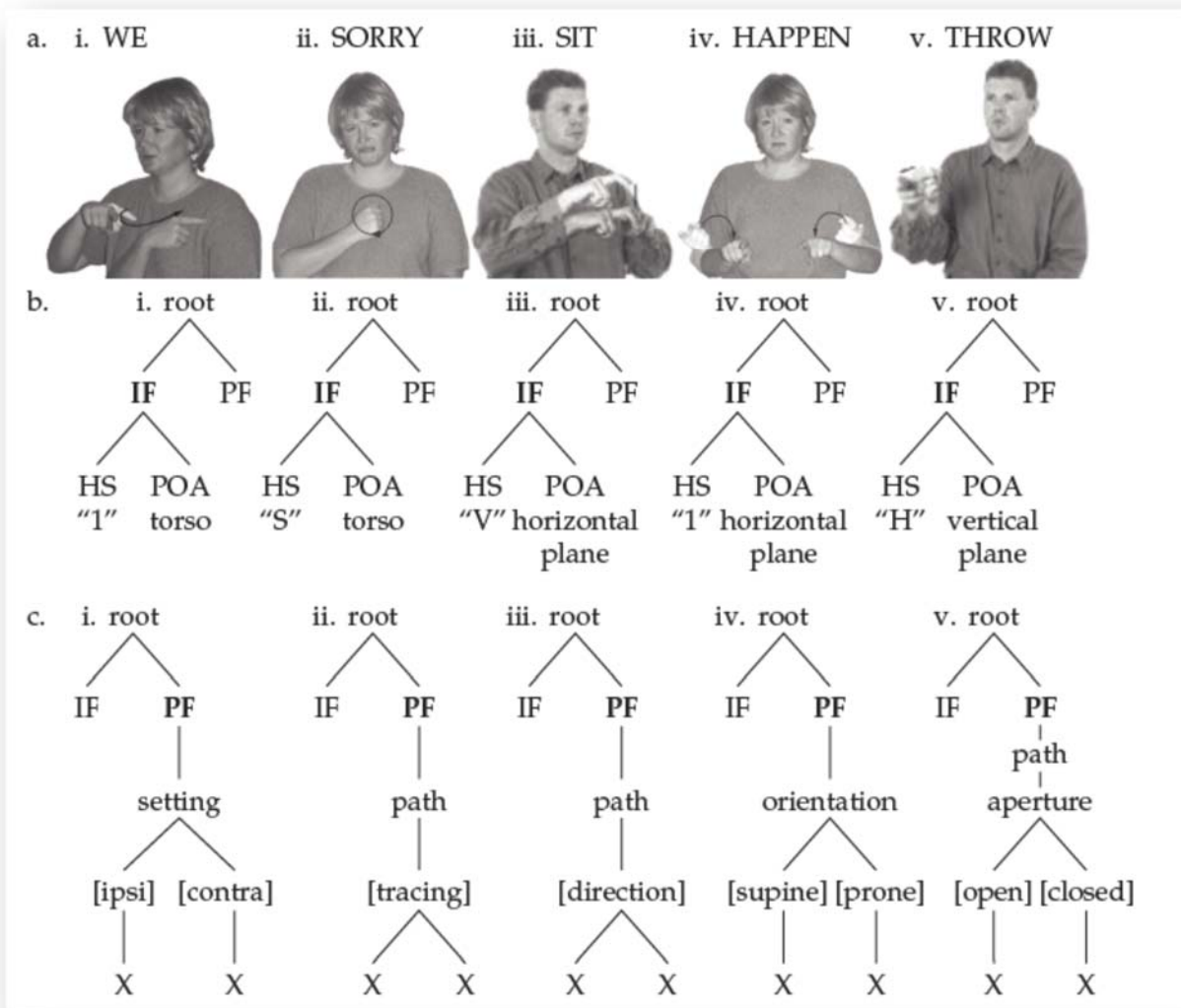
8.1 Overview of features

- Brentari's (1998) Prosodic model, copied from Brentari 2011, p. 693-694:



⁴ <https://www.quora.com/What-do-Deaf-linguists-think-of-terms-like-Phonetics-Phonology-used-for-signed-languages>

- ASL examples (Brentari 2011, p. 694):



- Inherent features (Brentari 2011)
 - In general, a sign language morpheme has a lot of features
 - ...but each is specified just once
 - Similar to how tone or a harmonized feature (vowel feature, nasality) can behave in a spoken language
 - No timing slots for these, since they carry across the whole sign
- Prosodic features
 - Are on a separate tier, because they can change during the sign
- We'll take a closer look later at all features (handshape, location, movement, orientation...)

8.2 Features: non-manual components

- Few minimal pairs exist
 - Non-manual features tend to be more morphological, syntactic, intonational
- But here's one: ASL NOT-YET differs from LATE only in requiring the "TH" mouthshape (Kacorri 2016, p. 10—might be easier to see if we watch the original videos on handspeak.com):



Figure 3: Example of ASL facial expression in lexical level (a) NOT-YET and (b) LATE signs. (source: www.handspeak.com)

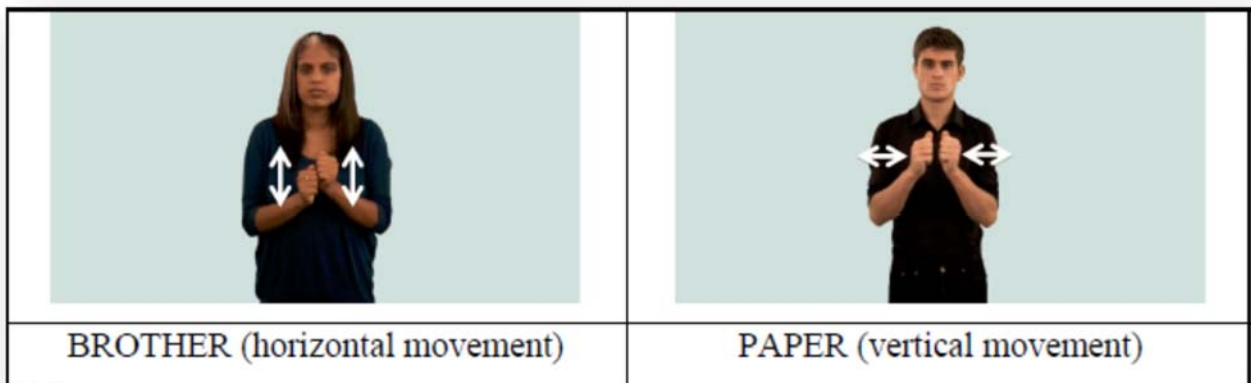
From LifePrint.com, Bill Vicars's "ASL University":

"NOT-YET: This sign is similar to "LATE" except "not-yet" uses a small negative headshake and covers the lower teeth with the tongue. Yes you have to use your tongue in this sign or you are doing it wrong. That is another reason why it is not possible to speak and sign ASL at the same time"⁵

8.3 Non-dominant hand, aka weak hand

- Many signs are just one-handed
- If they use both hands, there are four possibilities:
 - symmetrical with symmetrical movement
 - symmetrical with alternating movement
 - same handshape but weak hand doesn't move
 - different handshape, weak hand doesn't move
- BSL (British Sign Language) examples from Fenlon, Cormier & Brentari (2017, p. 5 of ms.):

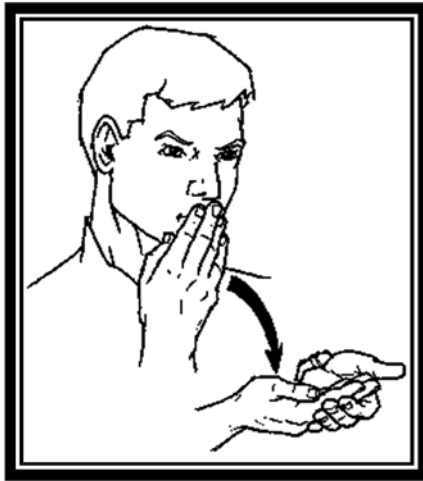
⁵ <http://www.lifeprint.com/asl101/pages-signs/l/late.htm>



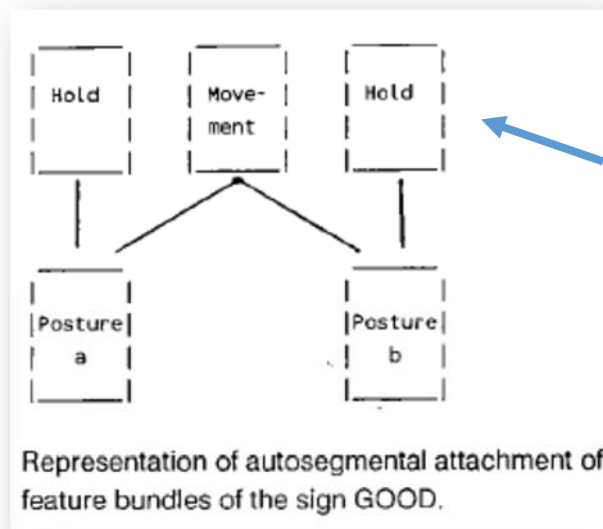
- Battison's conditions (Battison 1978)
 - Symmetry Condition: if non-dominant hand moves, must have same handshape and movement as dominant hand
 - Dominance Condition: if non-dominant hand doesn't move, handshape is from a restricted set

8.4 Syllable

- In most sign languages, most signs/lexical morphemes are exactly one syllable
- Nucleus = movement
- Onset & coda (optional) = location
- Example representation of onset-nucleus-coda word, ASL GOOD, from Liddell & Johnson 1989, p. 214



lifeprint.com

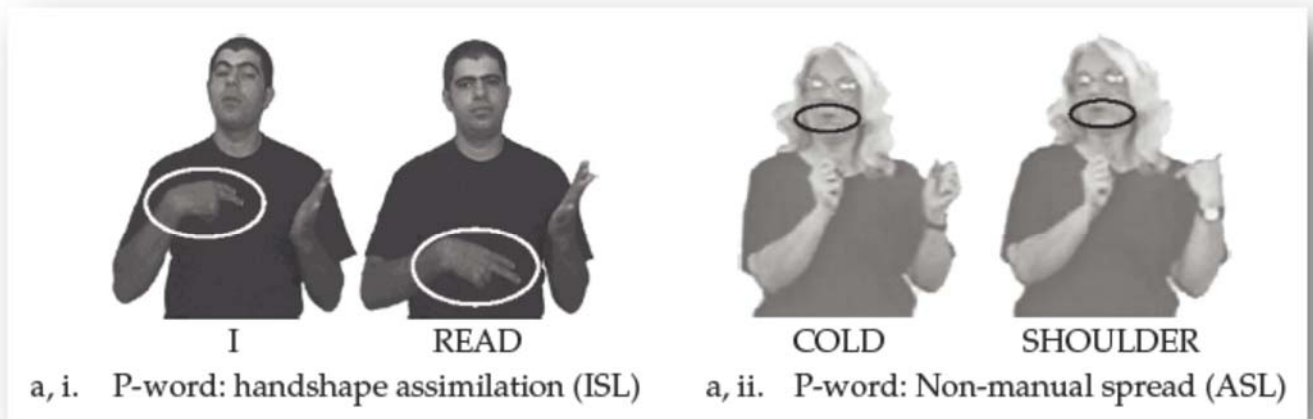


features go in each of these boxes

- Evidence of one-syllable minimum
 - When a movement-less numeral or fingerspelled letter is used as a word, a movement is inserted
 - Seen in ASL, Finnish Sign Language, Italian Sign Language (see Brentari 2011 for refs)

8.5 Phonological word

- When two roots, or a root and a clitic pronoun, are grouped together, they can undergo spreading or coalescence so that there is only one handshape, only one mouthing
 - We will collate many examples of this.
 - Here are two from Brentari 2011 (p. 699)



(Brentari 2011 p. 699)

- Normally 'I' in ISL has index-finger handshape
 - When cliticized to READ, instead anticipates V handshape of READ
- This is the compound COLD SHOULDER with same idiomatic meaning as in English
 - If it were the compositional phrase COLD SHOULDER, mouthing wouldn't persist
- Another example, from Hong Kong Sign Language (Tang et al. 2010)



- Usual handshapes for TASTE and GOOD:
- In TASTE^GOOD (meaning 'tasty'), TASTE adds the 'thumb-extended' feature to get the



8.6 Word phonotactics

- ASL: Within a word, selected fingers, major place (body region) can't change
 - e.g. ASL THROW changes handshape, but not selected fingers (lifefprint.com)



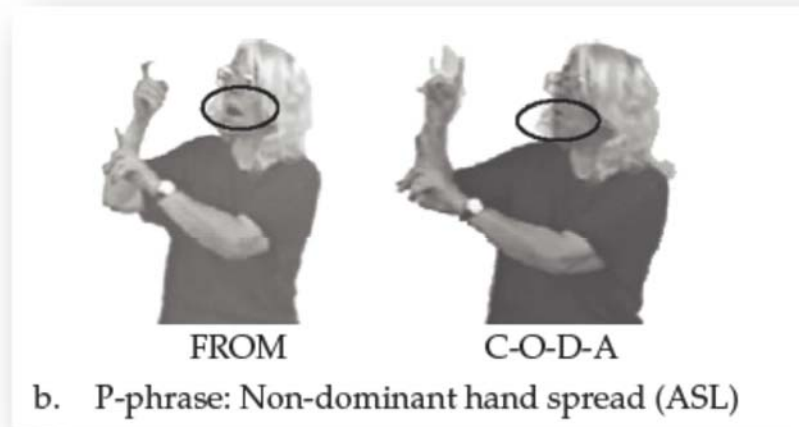
- Sandler 2012's list of "common constraints on sign form found across sign languages"

CONSTRAINTS ON THE FREE MORPHEME	
1. Selected finger constraint (Mandel 1981)	There may be only one (group of) selected finger/s in a free morpheme
2. Internal movement constraint (Mandel 1981)	If there is a change of finger position in a morpheme, all selected fingers make the same change.
3. Unselected fingers constraint (Corina 1993)	If selected fingers in a free morpheme are closed, unselected fingers are open. If selected fingers are in any other position, unselected fingers are closed.
4. Symmetry constraint on two-handed signs (Battison (1978)	When both hands move in a free morpheme, they must be symmetrical in handshape, movement, and location
5. Dominance constraint on two-handed signs (Battison 1978)	When one hand is active and the other is passive (i.e., functions as a place of articulation) in a free morpheme, the passive hand either has an unmarked shape or it has the same handshape as the active hand

CONSTRAINT ON THE SYLLABLE	
6. Movement in syllables (Brentari 1998)	A syllable must contain a movement, either a path movement, a handshape change, or an orientation change. These different types of movement may combine simultaneously, but maximally one of each type may occur in a single syllable.

8.7 Phonological phrase

- Lengthening at end of phrase
- Nondominant hand's shape can spread across whole phrase

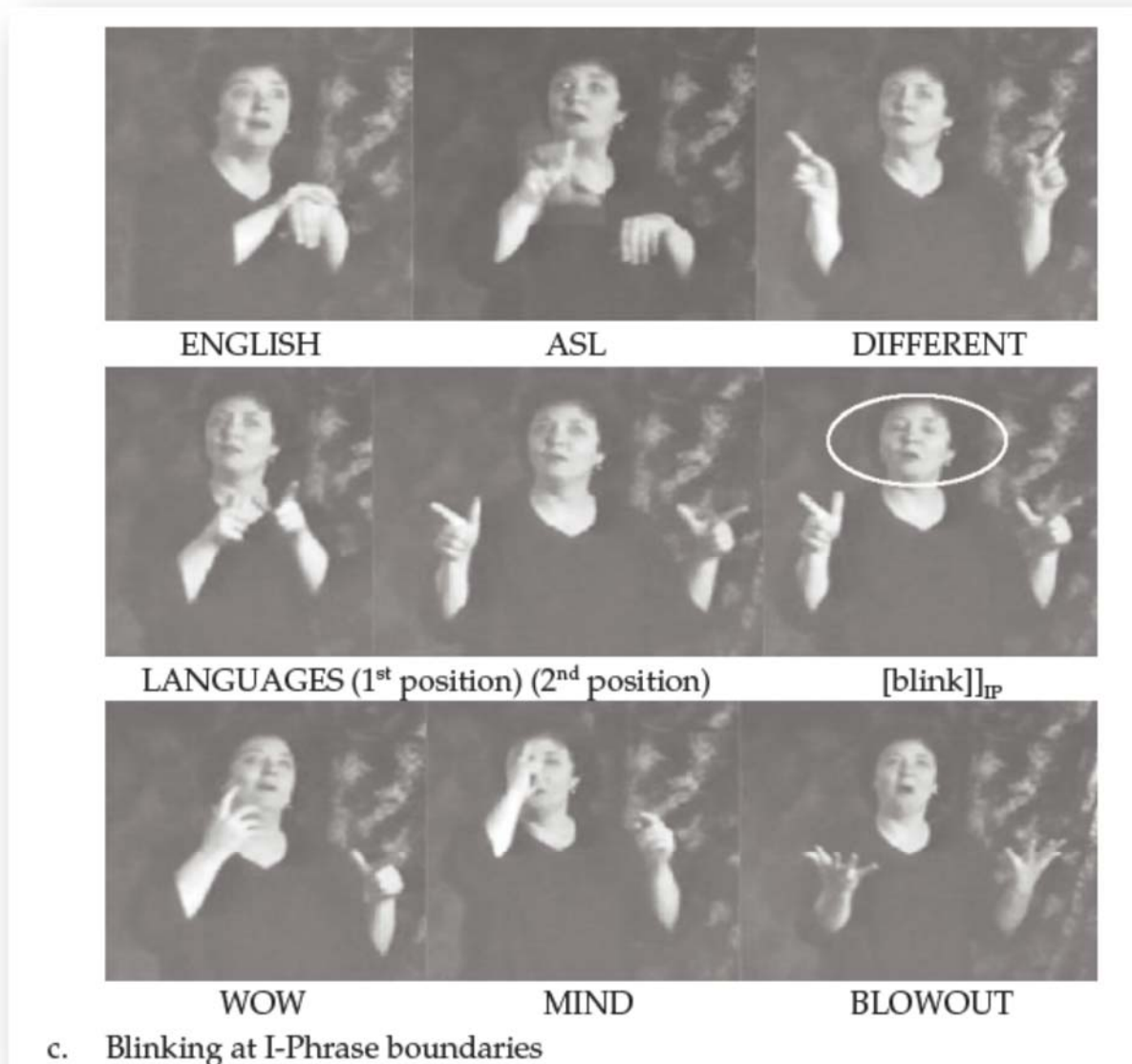


Brentari 2011 p. 699 (I think the circle was supposed to be around the signer's left hand)

- The nondominant (left, in this case) hand's shape and location for FROM persists during fingerspelled C-O-D-A
- Same thing for COLD SHOULDER above

8.8 Intonational phrase

- Changing which side of signing space whole body leans towards
- "Reset" nonmanual components
- Optional blinking at end
 - Tang et al. 2010: rate of blinking and coincident features (lengthening, head nods) vary cross-linguistically



ASL example from Brentari 2011, p. 699)

8.9 Intonation

- Tends to be nonmanual
- E.g. Israeli Sign Language (Sandler 2004, p. 4 of ms.):
 - wh-question: furrowed brows
 - shared information: squinted eyes



wh question superarticulation shared information superarticulation



wh-question and shared information superarticulation

Figure 4. Simultaneous componential intonation (superarticulation) in Israeli Sign Language (Reprinted with permission from Meir & Sandler, in press)

8.10 Structure of the lexicon

- Core lexicon: what we've been talking about so far
- Non-core/gesture: just as in spoken languages, signers gesture too!
 - It's just more challenging to draw the line since the modality is shared
- "Loans" from fingerspelling, tracings & depictions of Chinese characters
 - Differs from spoken-to-spoken borrowing, where borrower may lack native perception
 - since there are no "native speakers" of fingerspelling, as far as I know
 - But similar in that the input may be phonotactically bad
 - can get repaired, yielding insight into borrowing language's phonotactics
 - or they can be tolerated, stretching the language's phonotactics
- The fingerspelling loan lexicon itself contains several subtypes (initializations, two-letter signs, adapted full words... see Brentari & Padden)
- Example of nativization in ASL: NO (Cormier, Schembri & Tyrone 2008, p. 30)

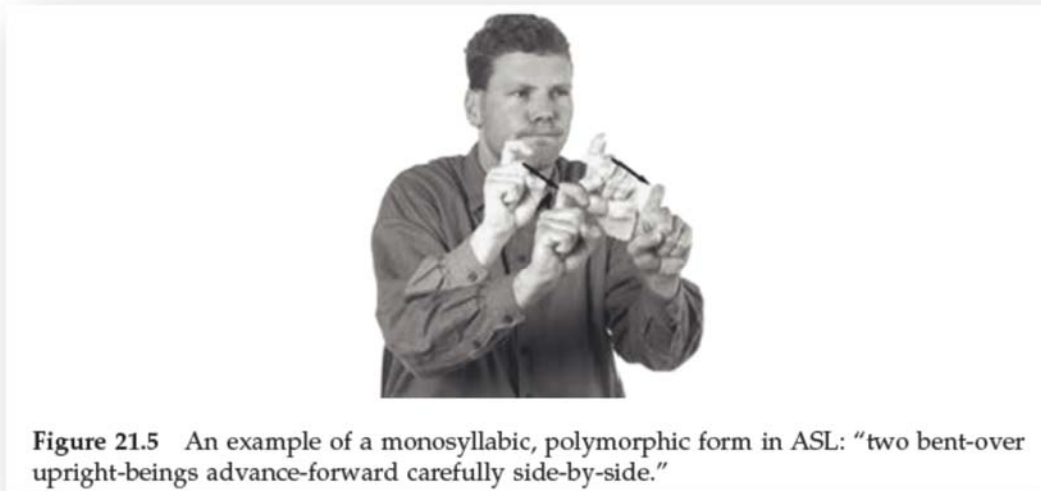


cf.

- Mouthings of spoken-language words
 - a sort of simultaneous code-mixing
 - but as we'll see, there's some evidence that these also get incorporated into the native lexicon

8.11 Important thing to know about morphology

- Affixes are often simultaneous with the root
 - Extreme example from Brentari 2011 p. 703 (six morphemes, one syllable)



9 Universalism vs. particularism

- Tension between two undesirable extremes
 - Forcing one language into an analytic framework that was developed for another
 - Failing to grasp the similarities between languages
- This is an issue in comparing spoken languages with each other too

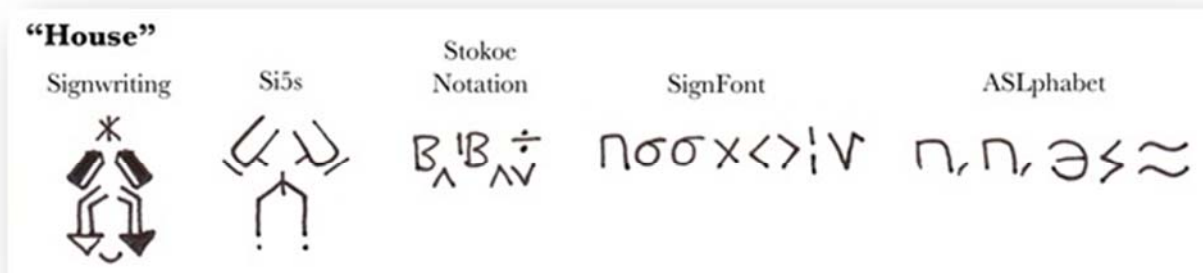
Some areas where signed and spoken languages really are different, qualitatively or quantitatively

- Simultaneity vs. sequence
 - see morphology example above
 - Brentari 2011 argues that auditory temporal resolution (2 msec) is better than visual (20 msec) → favors sequentiality in spoken languages
- Takes longer to sign a word than to speak one
 - arms and hands are bigger and slower than tongues and lips
 - but number of propositions per minute is similar (see refs in Brentari 2011)
 - because of simultaneity in signing
- Duality of patterning (though see Aronoff et al. 2008)
 - meaningless units (phonemes) group together into meaningful units (morphemes)
 - in spoken languages, there’s a lot of leakage
 - e.g. phonaesthemes (*snore, sneeze, snout, snoop, snot, sneer, sniff...*)
 - in signed languages, there is more iconicity
 - may tend to decrease diachronically as distance from homesign grows (Frishberg 1975)

- So it's hard to say whether greater iconicity in signed languages happens because visual iconicity is easier than auditory iconicity, or because signed languages tend to be younger

10 Transcription systems?

- Nothing that seems to be widespread in the phonology literature, but there are systems with varying degrees of popularity.
- Here's a nice comparison of some ways to write ASL HOUSE, courtesy of Wikipedia⁶



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⁶ <https://en.wikipedia.org/wiki/ASL-phabet>

⁷ https://commons.wikimedia.org/wiki/File:Brief_Comparison_of_ASL_Writing_Systems.jpg

11 Let's look at the syllabus now

12 My goals for this course

- I want us all to come out of the quarter ready and able to include sign language data/examples in our teaching
 - This means understanding enough of the basics of sign language phonology, and having some orientation to the literature
- I also want us to start building a bank of examples, tagged for what concepts or phenomena they are examples of, to reduce the prep burden
 - I've uploaded a couple of examples already—let's take a look on the computer now
- I hope some of you will take the course for 4 units and develop a problem set as your project
- If this sets some of us on the path to including sign languages in our research too, great!
 - but after just this one course, we'd surely need to collaborate with experts if we want to do so

13 Web system

- For now I'm just putting everything on CCLE
- But I'm all ears about a better system—why don't you all think about it and we can discuss next week?
- Desiderata
 - Multiple tags for each example
 - Tags are searchable
 - Also possible to just browse examples by title
 - A wiki might be good, but it has to be possible to retrieve items by tag, as with Wikipedia's *Category* feature
 - it also has to be easy to paste in images and not require each one to be first hand-saved as a separate file
 - In principle I'd like it to be public, but in practice it will be too much work to get permissions for all the images
 - still, I'd like it to be durable for us and those we invite (i.e., not on CCLE)
- Maybe Google Drive would work well?

14 Divide up next readings for next week or two

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