

Selected finger combinations in American Sign Language: frequency, acquisition, and markedness

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Research Questions

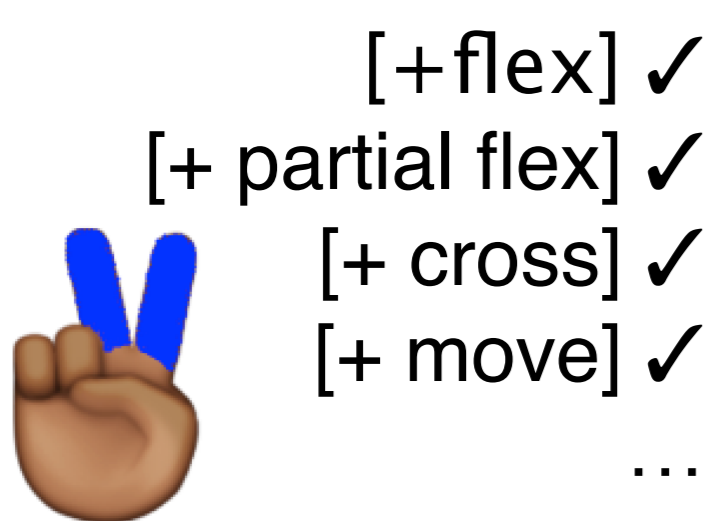
What do Selected Finger (SF) Combination (SFC) type and token frequency and order of acquisition suggest about the relative markedness of SFCs?

What is the relationship between ABY's acquisition of SFCs and adult type and token SFC frequency?

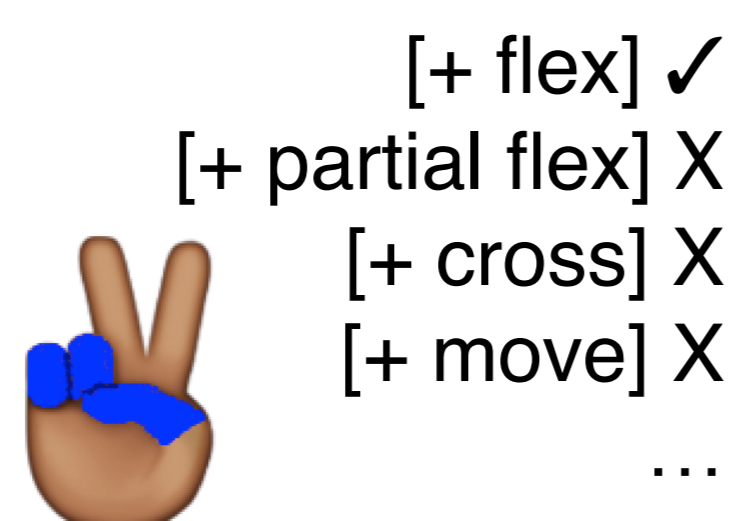
Selected Fingers Constraint

1 sign \leq 2 finger groups (Mandel 1981)

Selected Marked configuration



Non-Selected Unmarked configuration only



- Thumb = SF iff no other SFs
- If no fingers have marked features,
- SF = perceptually salient fingers
- Coding follows Caselli et al. 2016 and Brentari 1998

Type frequency
SFC's frequency in the lexicon

Token frequency
SFC's frequency in usage

Acquisition
SFC's presence in child productive lexicon captured in a given session

Data

Video:
10 sessions
45 min – 62 min
9 hr 10 min total

Subset of SLAAASh Corpus:
Sign Language Acquisition, Annotation, Archiving and Sharing (Lillo-Martin & Chen Pichler 2008)

Participants

ABY: 1;04.22–2;04.02 Deaf native ASL user	ABY's mother and father: Deaf native ASL users	5 additional adults: Deaf and Hearing ASL signers
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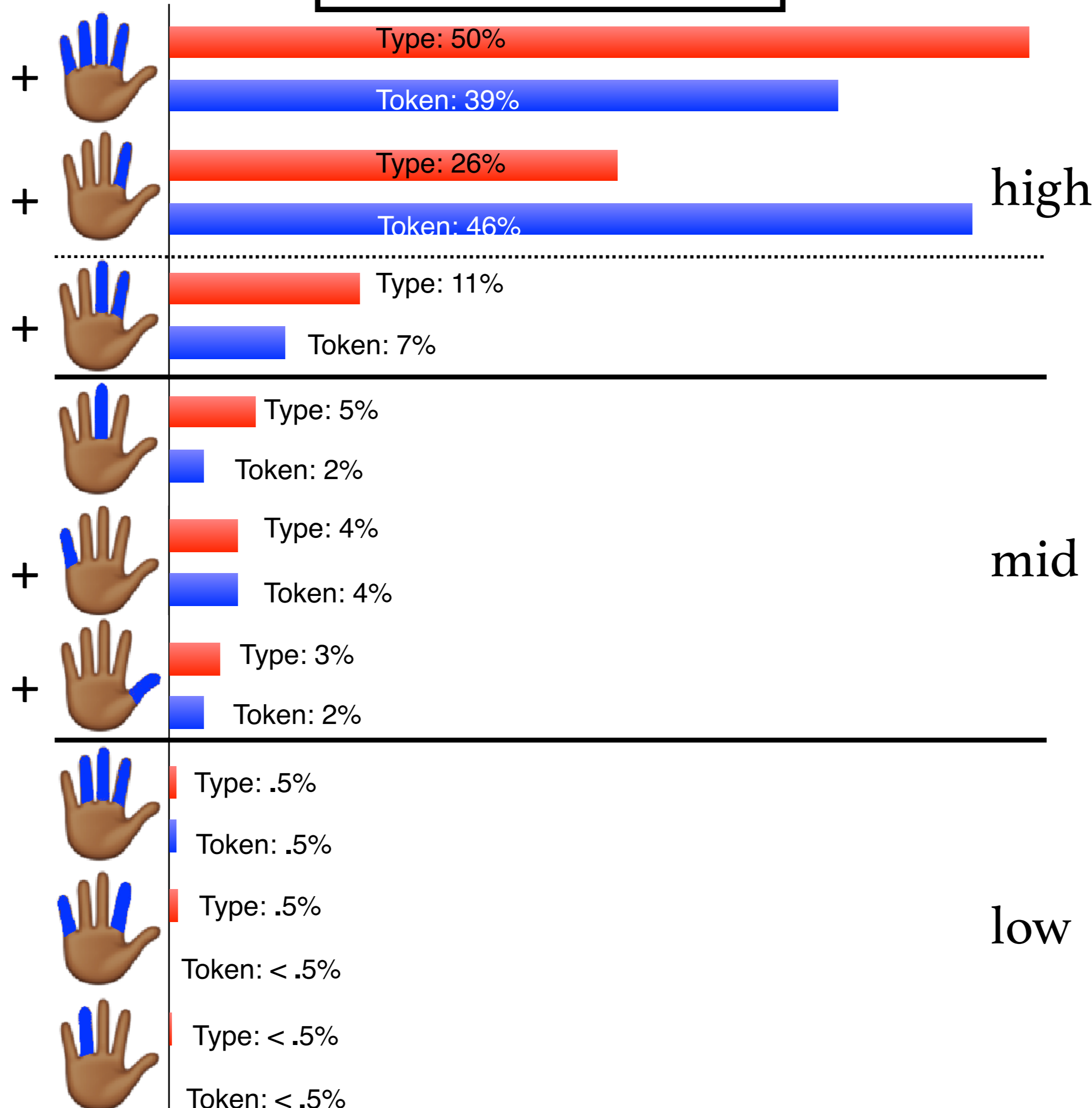
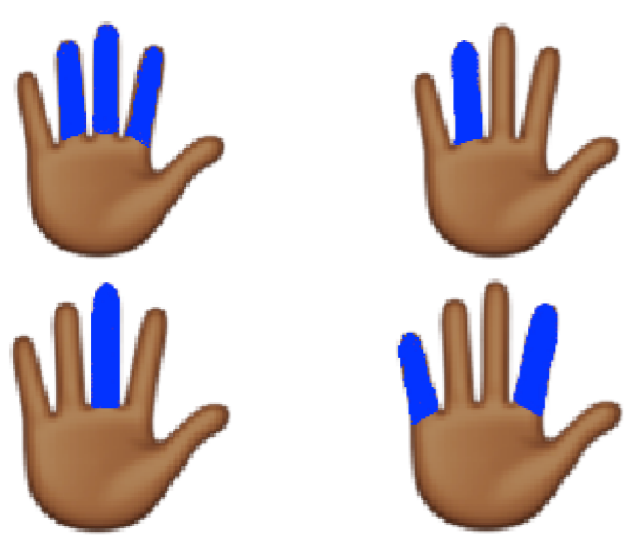
Adult SFC Frequency

SFC Acquisition

Early Acquisition + (1;04.22 - 2;00.16)

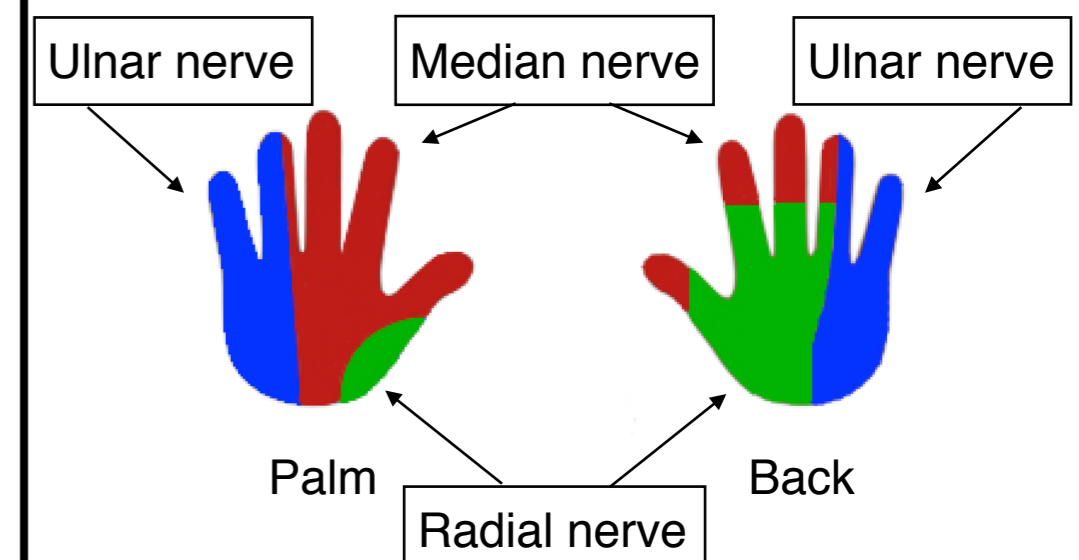


Late Acquisition (2;00.16 - 2;04.02)

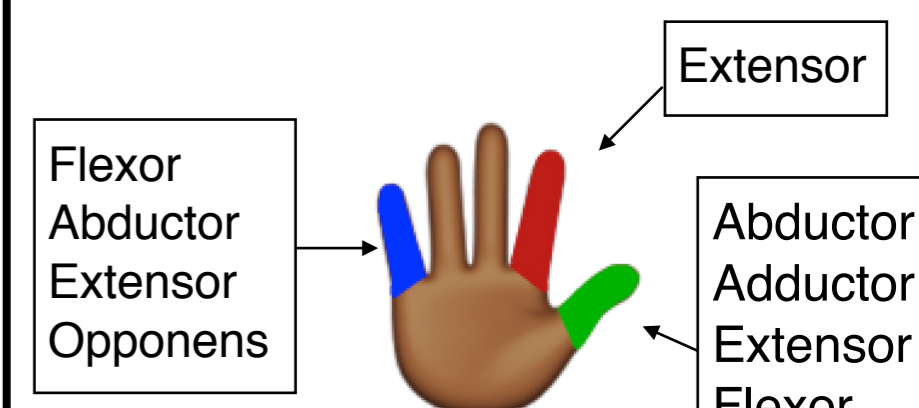


Articulatory Explanation of Markedness Hierarchy

Fingers in high frequency/early acquired SFCs **share nerves**; higher potential for shared sensory feedback



Fingers in high frequency/early acquired SFCs have **independent muscle attachments**; greater ease of articulation



Brentari, D. (1998). *A prosodic model of sign language phonology*. Cambridge, MA: MIT Press.
 Caselli, N., Sevcikova, Z., Cohen-Goldberg, A., Emmorey, K. (2016). ASL-Lex: A Lexical Database for ASL. *Behavior Research Methods*. doi: 10.3758/s13428-016-0742-0
 Lillo-Martin, D. & Chen Pichler, D. (2008). Development of Sign Language Acquisition Corpora. In Crasborn, O., Efthimiou, E., Hanke, T., Thoutenhoofd, E., & Zwitserlood, I. (Eds.), *Proceedings of the 3rd Workshop on the Representation and Processing of Sign Languages: Construction and Exploitation of Sign Language Corpora*; 6th Language Resources and Evaluation Conference 129-133. http://www.lrec-conf.org/proceedings/lrec2008/workshops/W25_Proceedings.pdf.
 Mandel, M. (1981). *Phonotactics and morphophonology in American Sign Language* (Doctoral Dissertation). Retrieved from Escholarship.
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