

ASL-LEX A lexical database for American Sign Language

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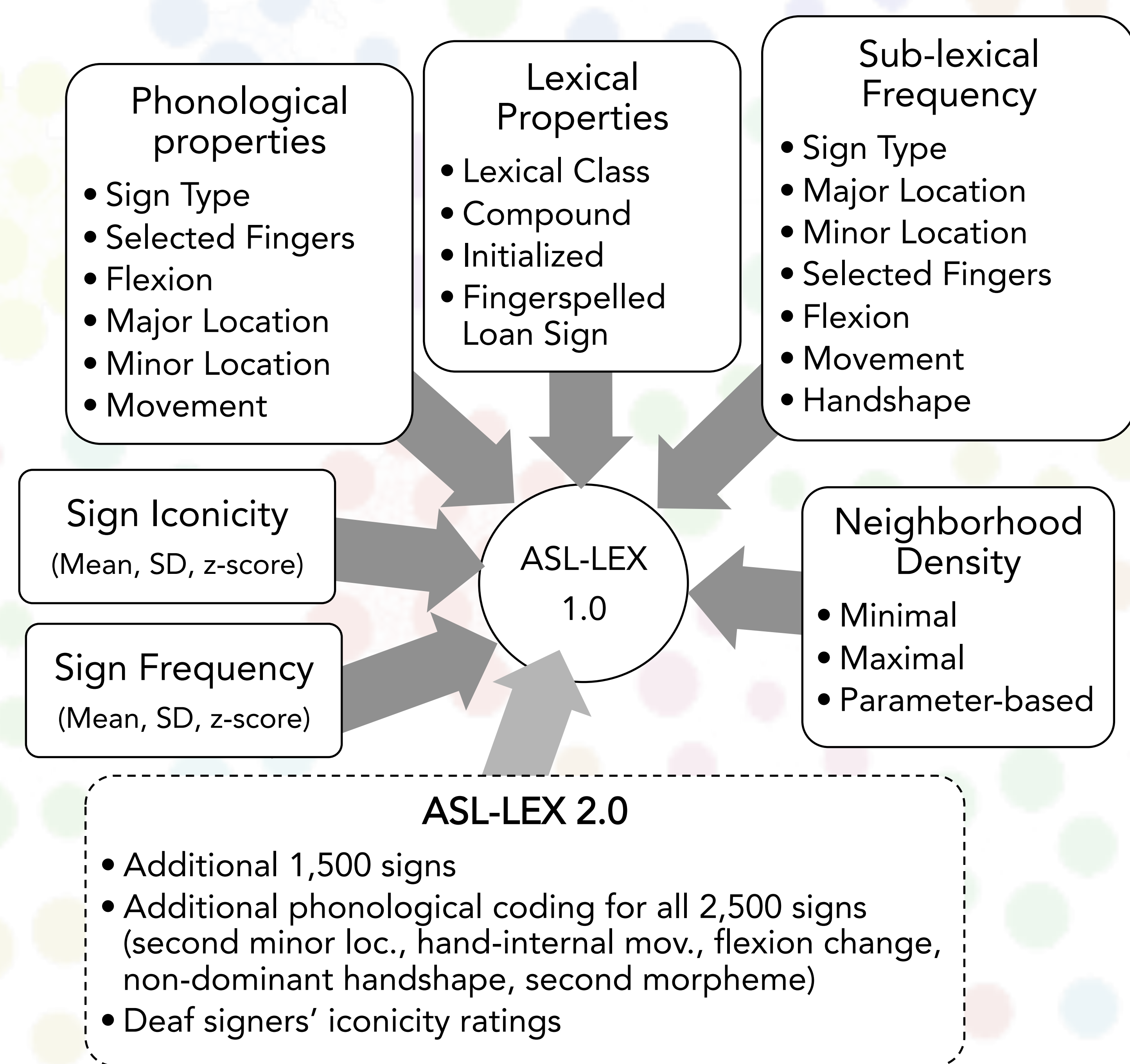
ASL-LEX is a searchable database of lexical and phonological properties of ~1,000 signs in ASL. It includes subjective frequency ratings, iconicity ratings, lexical properties and six phonological features from which neighborhood densities have been calculated. ASL-LEX provides reference video clips and, for a subset of signs, information about English translations and consistency.

Participants

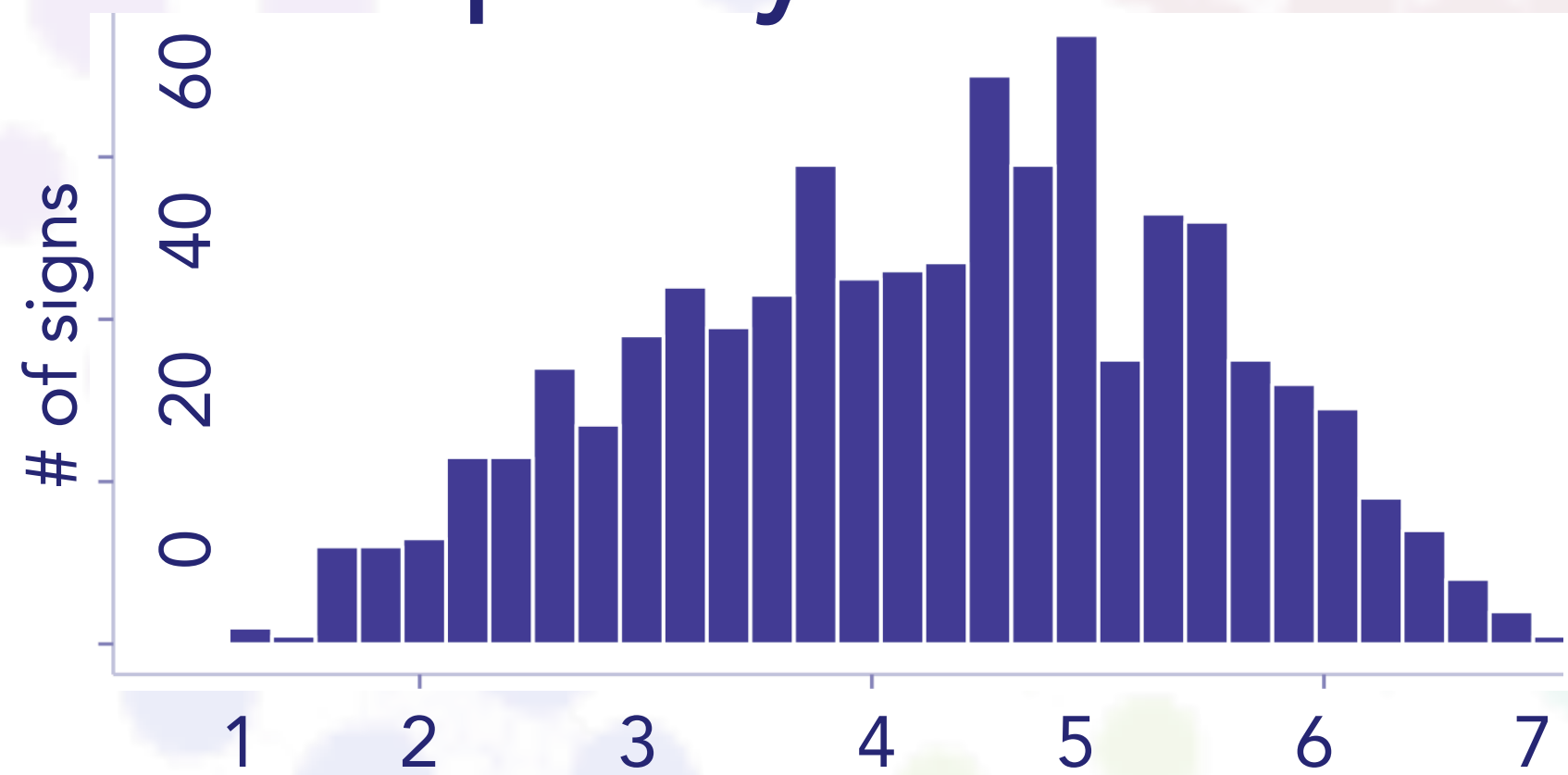
- Frequency ratings: 69 Deaf ASL signers (39 native & 30 early signers exposed to ASL before age 7); each sign rated by 25-31 participants
- Iconicity ratings: Each sign was rated by 21-37 hearing non-signers

Task & Materials

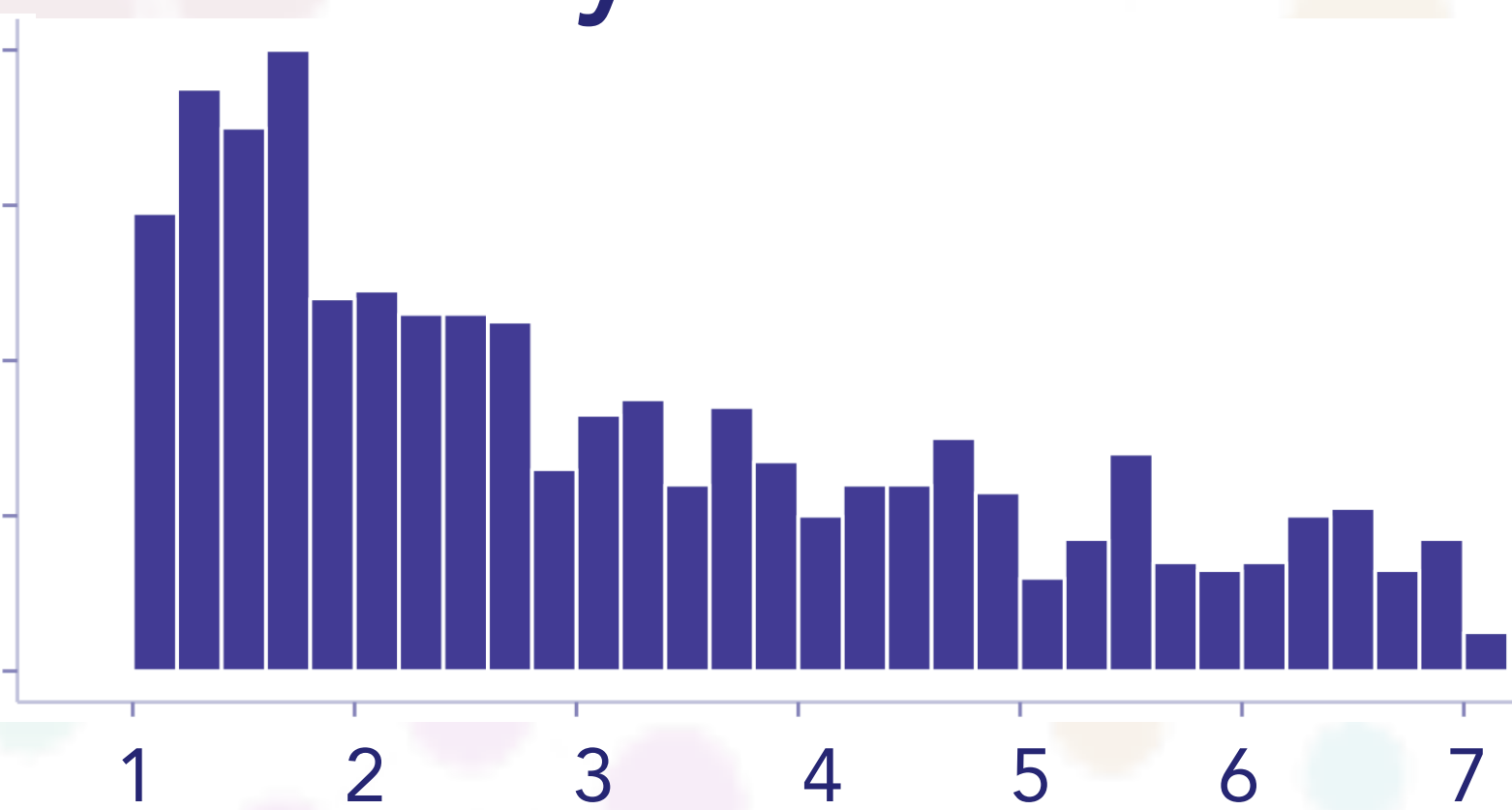
- Signs drawn from several resources (e.g. Mayberry et al., 2014) and modeled by a Deaf native ASL signer
- Videos were presented via an online survey tool; 4 surveys were created (~250 signs each, balanced for frequency of English gloss)
- A subset of signs were repeated to check for consistency
- Signs were rated on a 1-7 scale based on how often the sign appears in everyday conversation (1 = very infrequently) and how transparent the sign meaning is given the English translation (1 = not at all iconic)



Frequency Distribution



Iconicity Distribution



- Native & early signers did not differ in frequency ratings, suggesting relatively stable ratings across proficient signers
- Frequency ratings correlated with ASL frequency ratings (Mayberry et al. 2014) ($r_s = .65^{**}$, $N=297$) and BSL frequency ratings (Vinson et al. 2009) ($r_s = .52^{**}$, $N=226$)

Manuscript under review: Caselli, N., Sevcikova Sehyr, Z., Cohen-Goldberg, A., & Emmorey, K. ASL-LEX: A lexical database of American Sign Language.

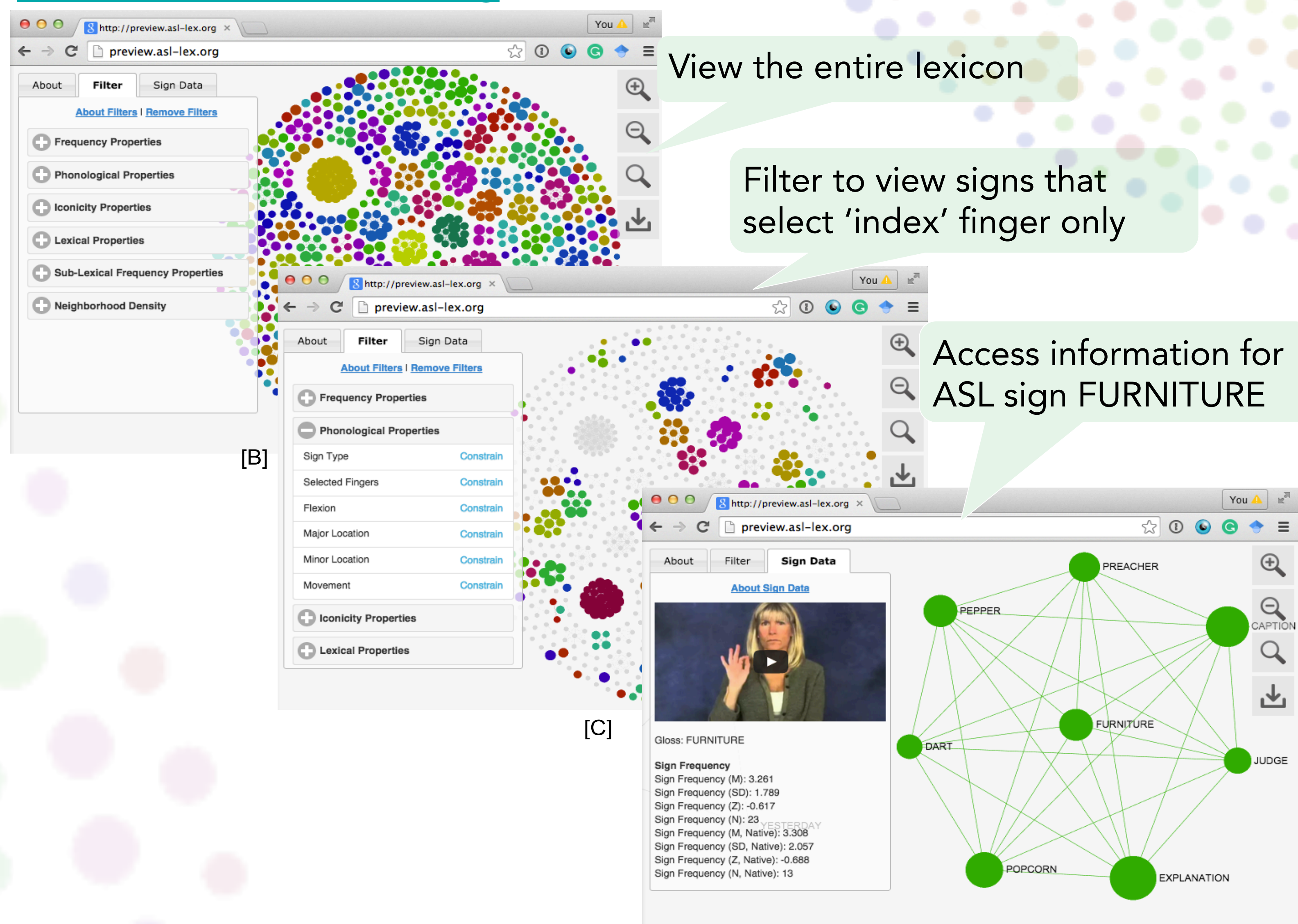
Work supported by NIH DC010997 to Dr. Karen Emmorey and SDSU, and a Tufts University Faculty Research Award to Dr. Ariel M. Cohen-Goldberg.

References: Mayberry, R. I., Hall, M. L., & Zvaigzne, M. (2014). Subjective frequency ratings for 432 ASL signs. *BRM*, 46 (2).

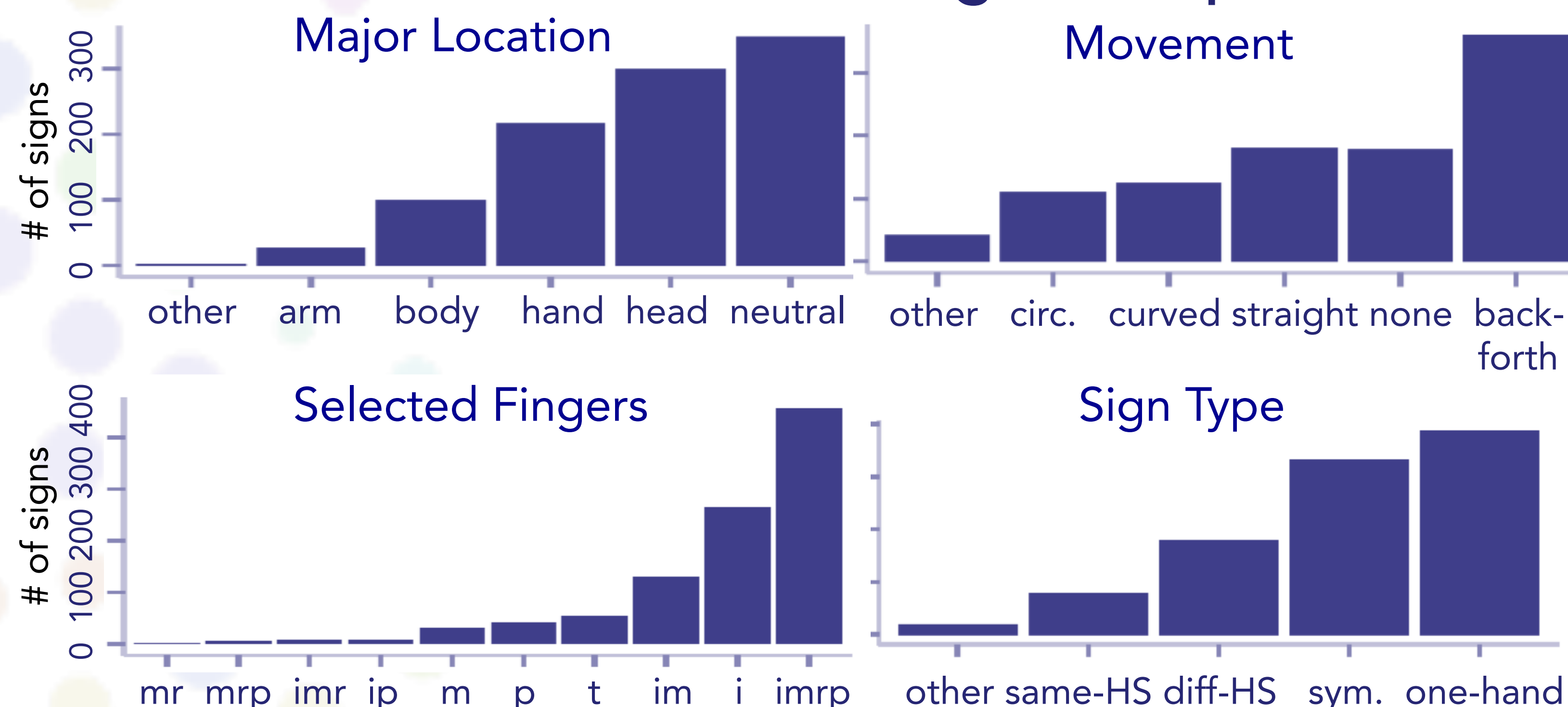
Vinson, D. P., Cormier, K., Denmark, T., Schembri, A., & Vigliocco, G. (2008). The British Sign Language (BSL) norms for age of acquisition, familiarity, and iconicity. *BRM*, 40 (4).

<http://preview.asl-lex.org>

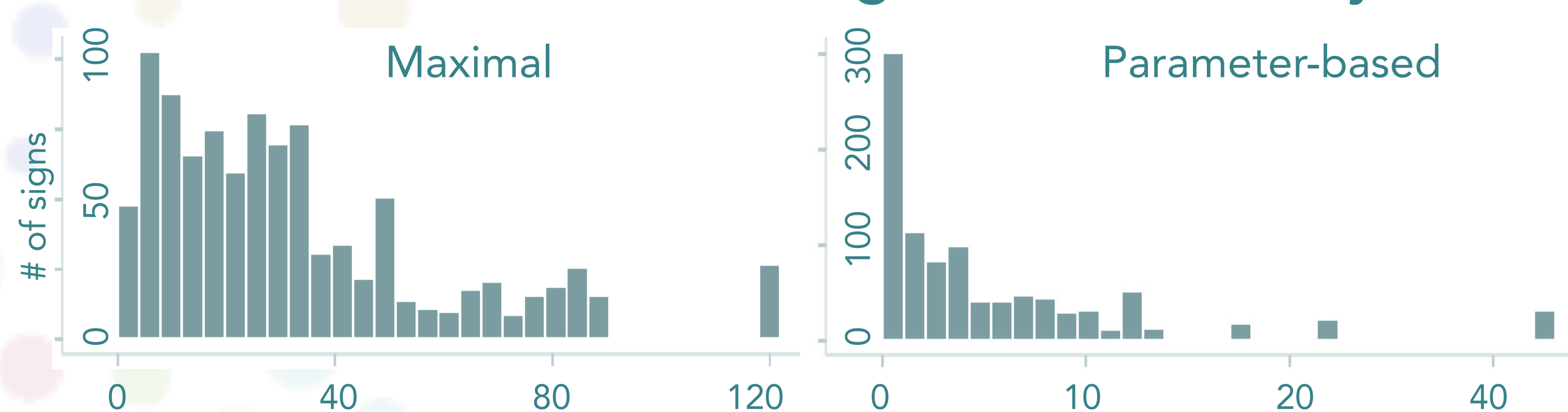
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Distribution of Phonological Properties



Distribution of Neighborhood Density



Relationships Among Lexical & Phonological Properties

- Frequency and iconicity scores negatively correlated ($r_s = -.15^{**}$): with frequent use, signs move away from their iconic origins due to linguistic pressures to become integrated into phonology
- Sub-lexical frequencies are generally uncorrelated with each other: relative independence of sub-lexical features may be due to motoric independence of the articulators and simultaneity
- Iconicity correlated with HS frequency ($r_s = .13^{**}$): iconic signs are constructed from frequent 'unmarked' handshapes
- Frequent signs have more neighbors ($r_s = .13^{**}$), like spoken language

	1	2	3	4	5	6	7	8	9	10
ND	1 Maximal									
	2 Par-based	.75**								
Sublexical freq.	3 Sign Type	.14**	-.04							
	4 Movement	.31**	.35**	-.04						
	5 Major Loc.	.33**	.28**	.27**	.04					
	6 Minor Loc.	.24**	.22**	.04	.01	.81**				
	7 Sel. Fingers	.37**	.36**	-.09*	-.01	.04	.01*			
	8 Flexion	.48**	.46**	-.04	-.04	-.03	-.05	-.06		
	9 Handshape	.64**	.69**	-.09*	-.04	.01	.03	.53**	.69**	
Lexical prop.	10 Iconicity	.10*	.11**	-.01	.01	.02	.04	.19**	0	.13**
	11 Frequency	.13**	.11**	.02	-.02	.06*	.05	.05	.12**	.11**

Spearman correlations; * $p < .05$, ** $p < .001$