

ISL-LEX v.1: An Online Lexical Resource of Israeli Sign Language

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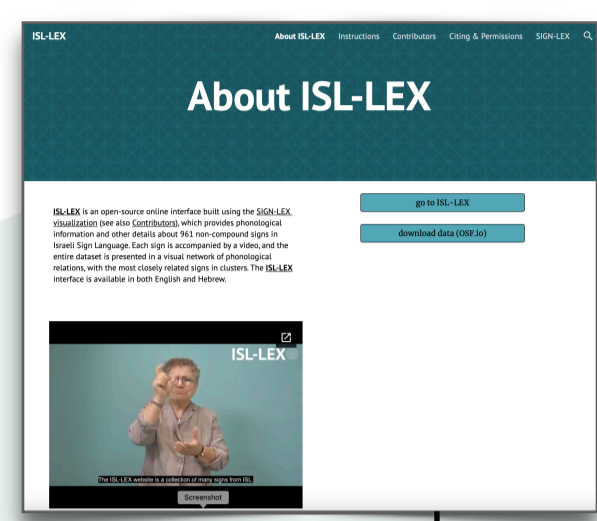
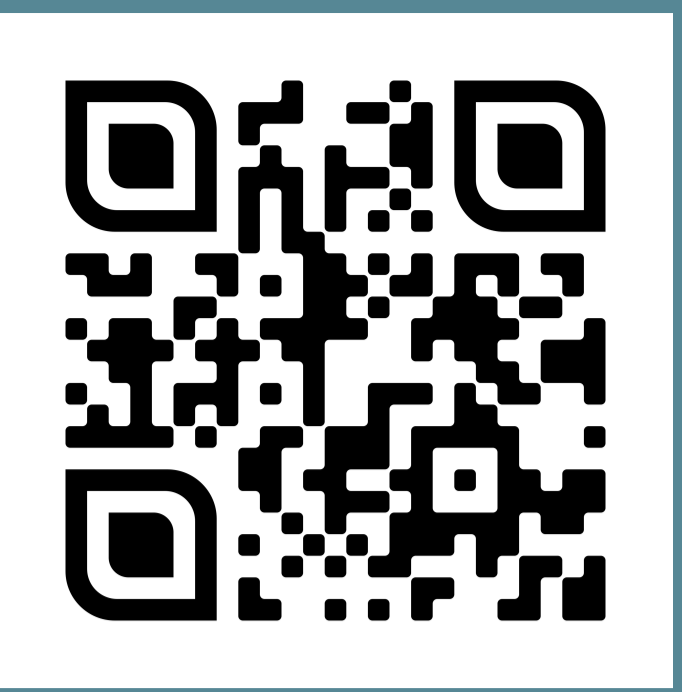


Figure 1. Landing page website

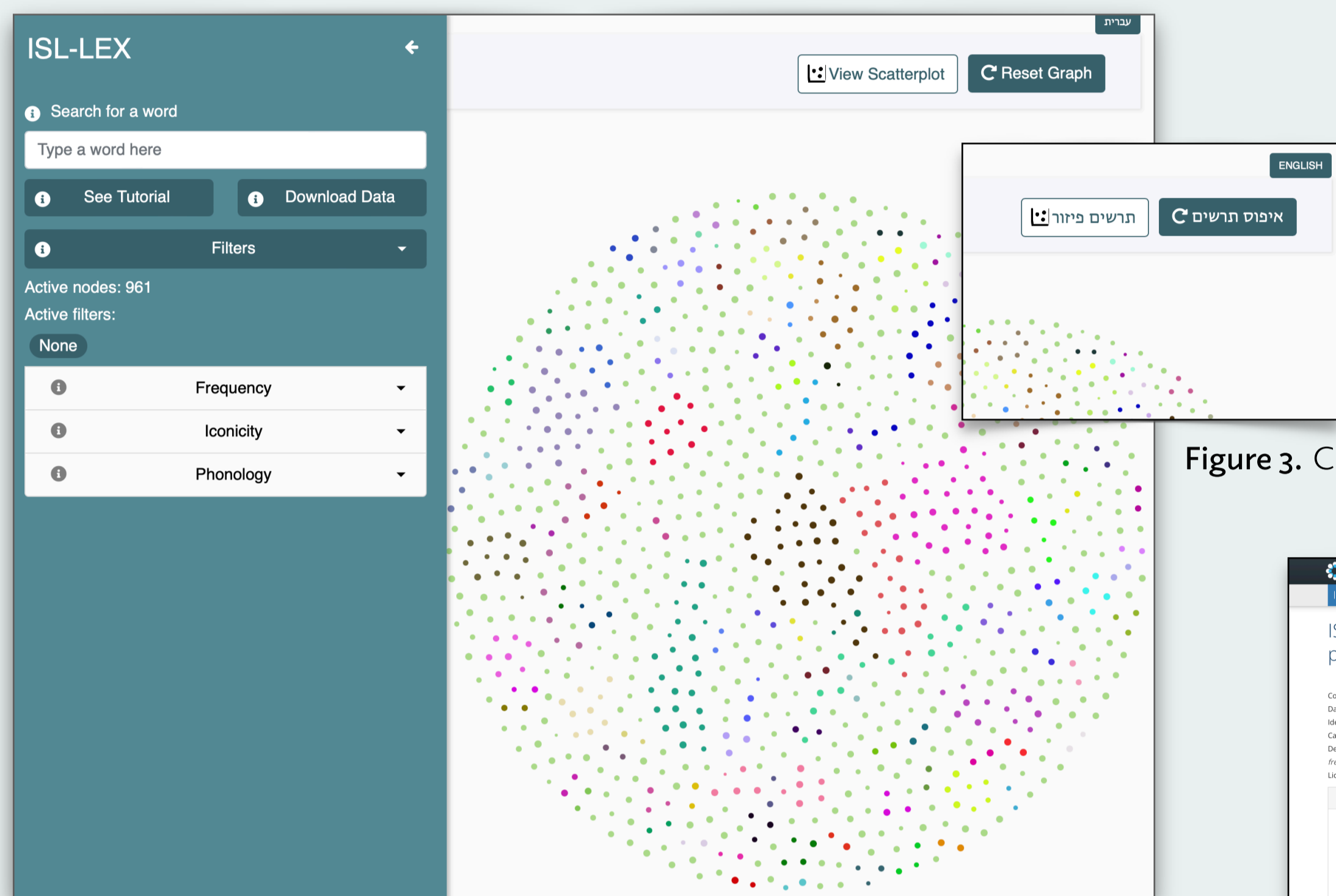


Figure 2. ISL-LEX interface (English)

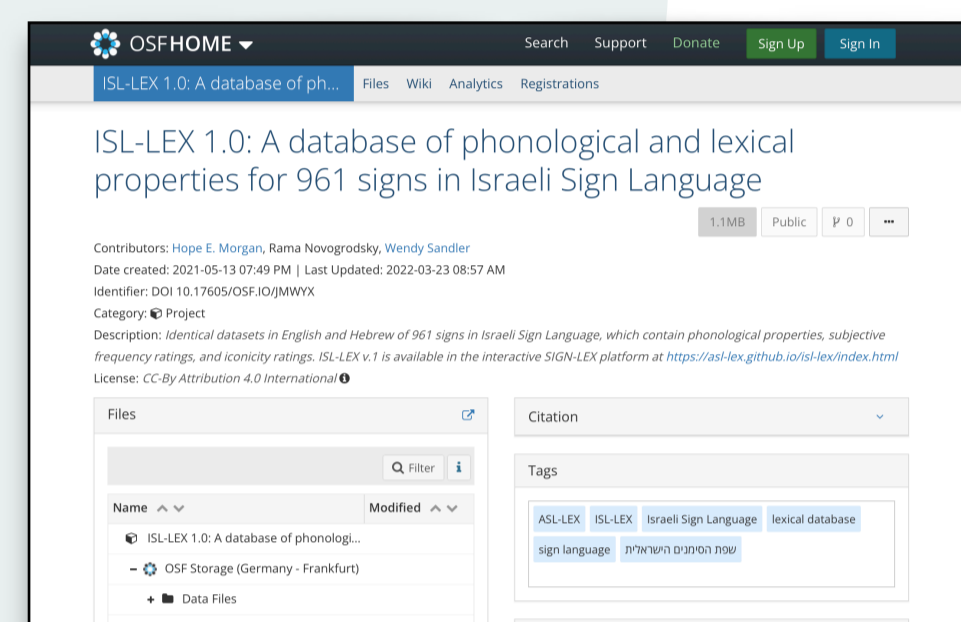


Figure 4. CSV data in OSF

ISL-LEX v.1

- first publicly available dataset of ISL
- 961 non-compound ISL signs
 - 467 from ISL Child Development Inventory (CDI; Novogrodsky & Meir 2020)
 - 494 chosen randomly from master list of 4,233 ISL Signs (IADPI)
- subjective frequency ratings (deaf signers)
- iconicity ratings (deaf signers, hearing non-signers)
- phonological properties (40 fields)
- interface built using SIGN-LEX visualization (Caselli et al. 2017, 2022)
- text in English and Hebrew

digital resources

contents

phonology

domain/parameter	field
articulator	number of hands
	symmetry of the moving hands
	symmetry of handshapes
handshape	hands cross or connected
	handshape dominant (h1)
	ending handshape (h1)
	handshape non-dominant (h2)
	initialized
	selected fingers
	flexion
	spread/stacked
	thumb position
	thumb contact (aperture)
orientation	palm orientation
	finger direction*
location	major area
	location 1
	location 2
	laterality
articulatory movement	contact (yes, no)
	contact type
	path movement (yes, no)
	axis of path movement 1
	axis of path movement 2*
	setting change 1
	setting change 2*
	handshape change (yes, no)
	handshape change type
	orientation (yes, no)
manner of movement	orientation movement
	path shape 1
	path shape 2
	syllables
	repeated exact
	alternating
	bidirectional/unidirectional
	displaced iteration
	switch dominance
	switch orientation
trill	

Table 1. Forty phonological fields in ISL-LEX (*in dataset, but not included as filter option in the interface)

(For a detailed description of the coding schema, see *Phonological coding in a lexical database of Israeli Sign Language* [Morgan, Sandler, & Novogrodsky forthcoming])

videos

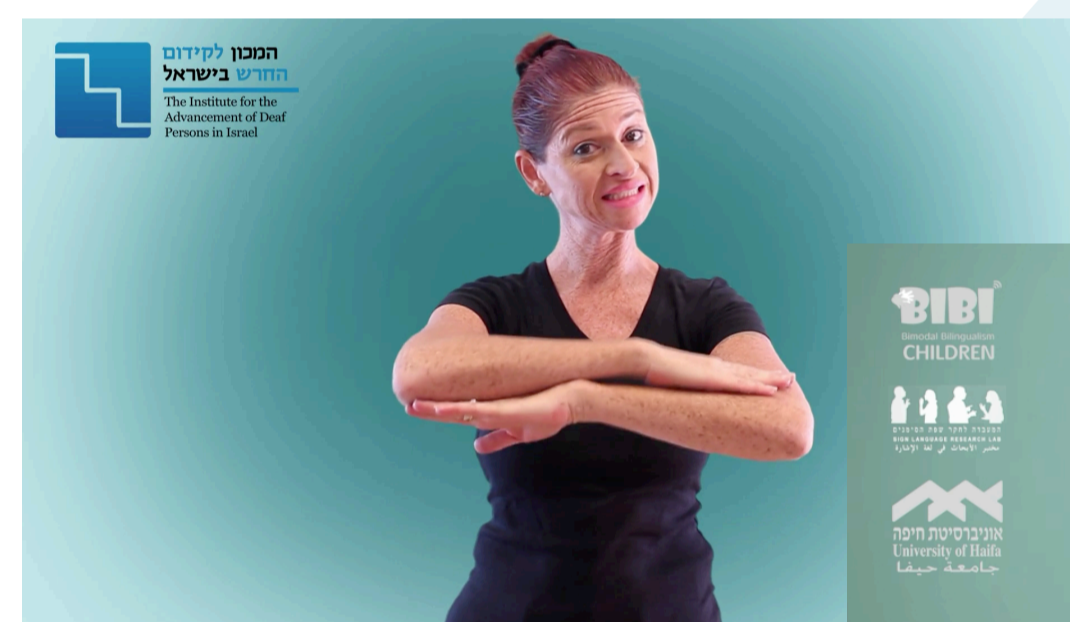


Figure 5. video from IADPI



Figure 6. video from University of Haifa

subjective frequency ratings

(see Novogrodsky & Meir 2020)

- ratings for all 961 signs, done in 2 batches
- Likert scale (1-7): *How often do you see this sign?*
- 19 deaf ISL signers
- average rating (all signs): 5.695

iconicity ratings

(see Novogrodsky & Meir 2020)

- ratings for 467 signs (signs in ISL CDI)
- Likert scale (1-7); 1 = non-iconic, 7 = very iconic
- 2 groups: 41 hearing Hebrew-speakers, 11 deaf ISL-signers

interface features

visualization

- each node (circle) is a sign
- visualization based on phonological-relatedness, by proximity, color, and edges (using 15 features)
- video of sign appears when hovering over node with cursor



filter

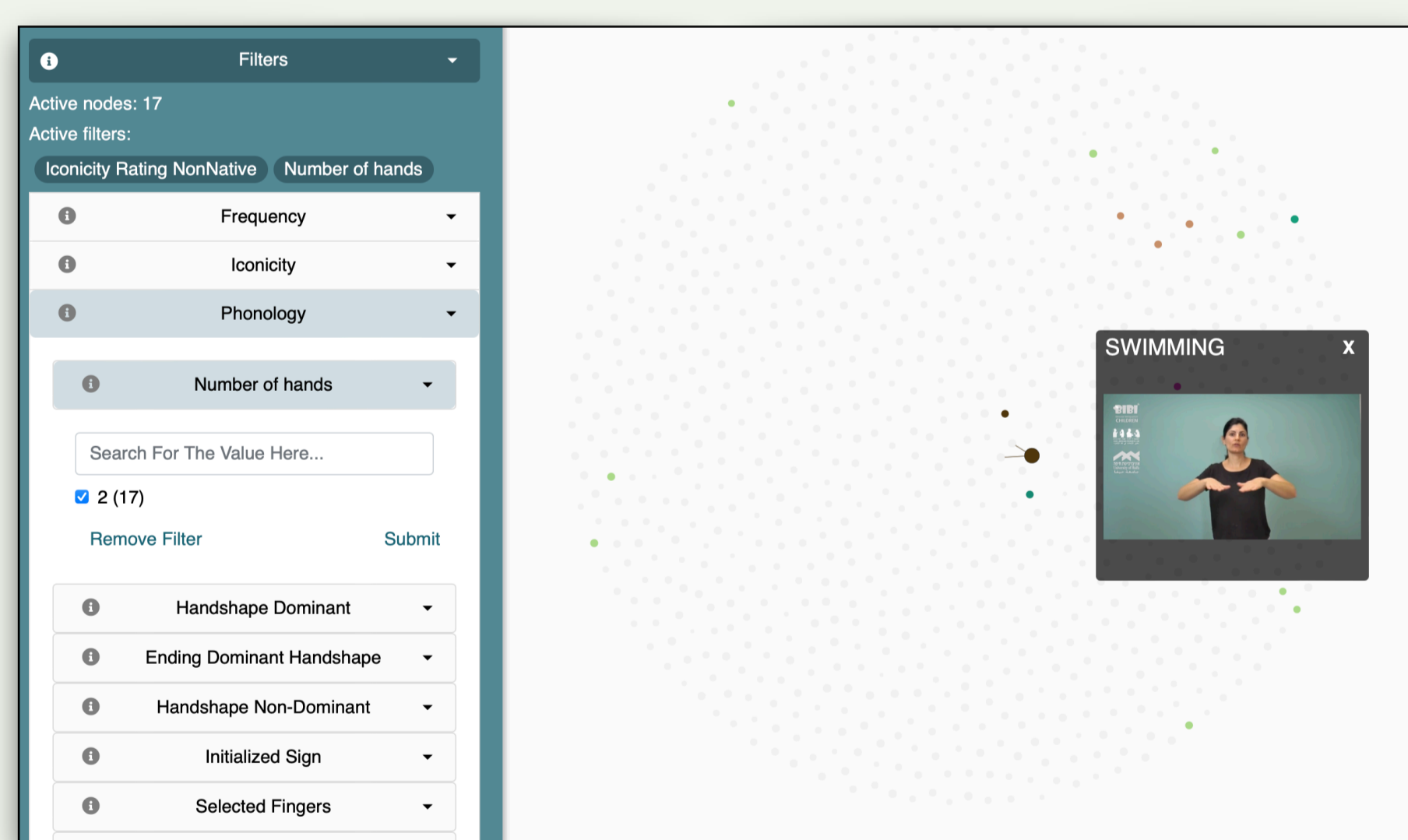


Figure 7. Example of filters in use: 17 signs found with (i) highest iconicity ratings by non-signers that are also (ii) two-handed; sign selected is SWIMMING

scatterplot

- scalable data (frequency, iconicity, neighborhood density) presented in plots to show the relationships between parameters
- a subset of signs can be selected

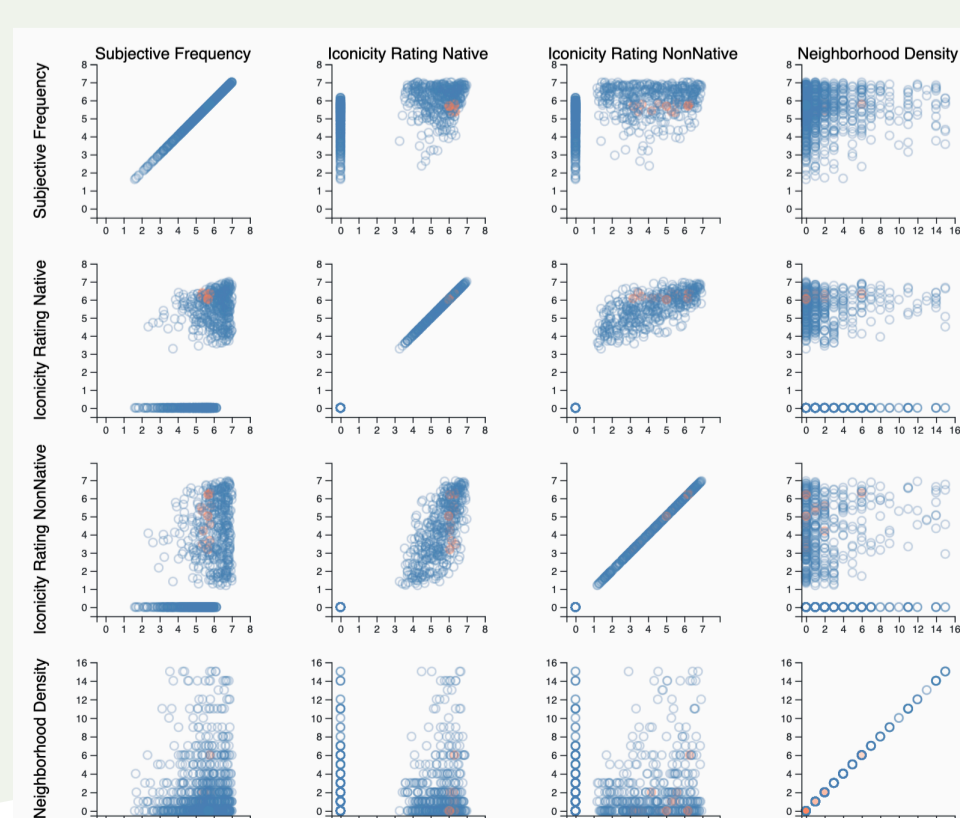


Figure 8. Scatterplot graphs with all 961 signs

References

Caselli, N., Sevcikova Sehyr, Z., Cohen-Goldberg, A. M., and Emmorey, K. (2017). ASL-LEX: A lexical database of American Sign Language. *Behavior Research Methods* 49(2), 784-801. DOI:10.3758/s13428-016-0742-0

Caselli, N., Sevcikova Sehyr, Z., Cohen-Goldberg, A. M., Emmorey, K., Pandit, S., Cao, X., Fantès, M., Simeon, J. (2022). SIGN-LEX: Interactive visualizations for sign language lexicons. SIGN-LEX. <http://www.sign-lex.org/>

Institute for the Advancement of Deaf Persons in Israel (IADPI). ISL Dictionary. Currently hosted by Ma'agale Shema: <https://isl.danfishgold.com/#e-3SI> (original site is offline: <https://www.isl.org.il>).

Novogrodsky, R. and Meir, N. (2020). Age, Frequency and Iconicity in early sign language acquisition: Evidence from the Israeli Sign Language MacArthur-Bates Communicative Developmental Inventory. *Applied Psycholinguistics*, 1-29. DOI:10.1017/S014271642000247

contributors

This project builds upon the combined efforts and resources of many individuals and institutions



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