

BACKGROUND

Lexical access

Language modality impacts the dynamics of sub-lexical competition within spoken and signed languages (Villameriel et al., 2019 *Cognition*)

Parallel activation

Bimodal bilinguals activate signs while hearing words (Villameriel et al., 2016 *JML*)

Do **modality-specific sub-lexical** aspects of language processing **impact** the dynamics of parallel **lexical access** in **bimodal bilinguals** of spoken Spanish and **Spanish Sign Language (LSE)**?

MAIN FINDINGS

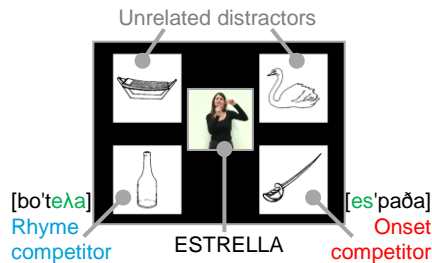
Cross-modal and cross-language activation in both directions: parallel activation of Spanish during sign recognition and parallel activation of LSE during word recognition.

No difference between native signers or L2 learners of LSE.

Dynamics of sub-lexical competition during cross-language activation and lexical access are similar.

METHODS

Exp.1: Parallel activation of words



Eye-tracking study - Visual World Paradigm

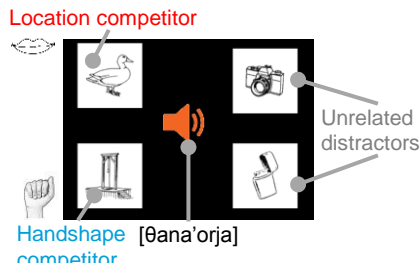
"Click on the picture that matches the sign/word"

Same **participants** in both experiments:
 28 native signers + 28 L2 learners of LSE

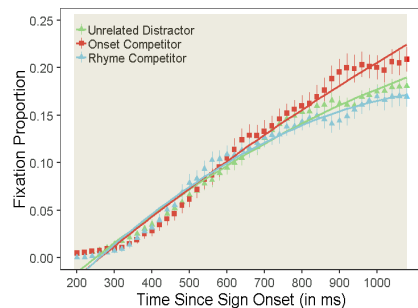
45 **trials** in each experiment:
 30 critical (target absent) + 15 fillers



Exp.2: Parallel activation of signs



RESULTS

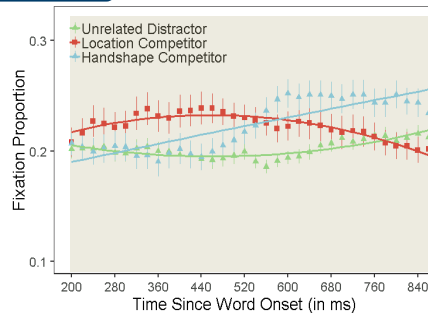


Parallel activation of Spanish words (while seeing LSE signs).

Onset competitors show co-activation.
 No effect for rhyme competitors.

Growth Curve Analysis in time window of interest (duration of stimulus moved forward 200ms to allow for eye saccade).

Data plotted in 20 ms bins.
 Solid lines show model fit.
 Error bars show standard error.



Parallel activation of LSE signs (while hearing Spanish words).

Location and handshape competitors show co-activation.
 Location precedes handshape effect.