Economy principle in signed narratives: Is it age-sensitive?

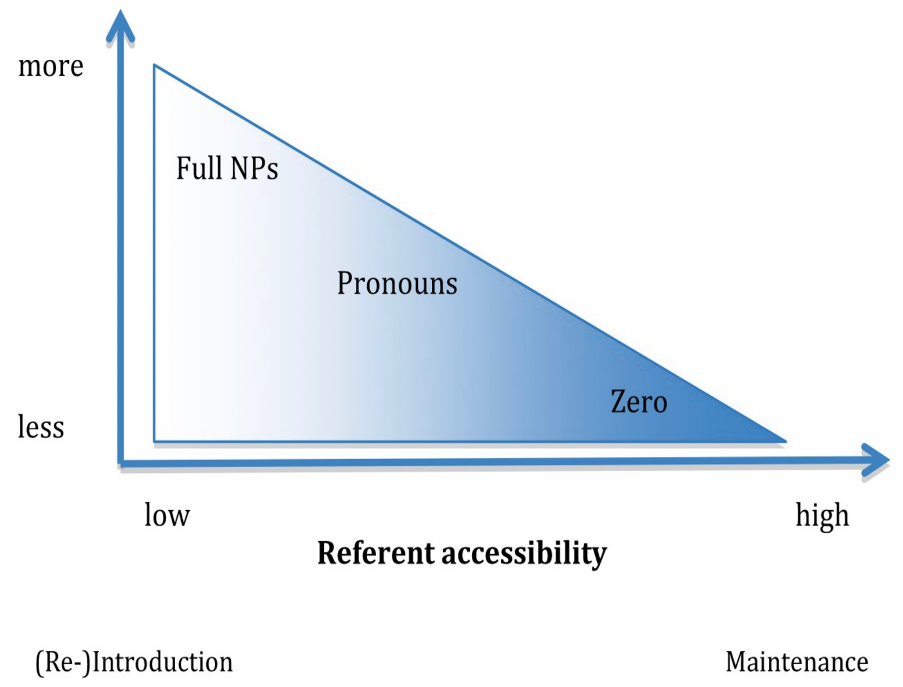
Onur Keleş (Boğaziçi University, onurkeles.boun@gmail.com) & Kadir Gökgöz (Boğaziçi University, kadir.gokgoz1@boun.edu.tr)

FOCUS OF THE STUDY

Referential Accessibility:

In narratives, speakers and signers vary **the quantity of marking** on referring forms and anaphoric tools (REATs) based on the accessibility of the referent in the addressee's mind [1-2]:

Accessible → less marking
Inaccessible → more marking



Taken from [11]

Discourse Status:

A referent can also be:

Introduced → mentioned for the first time
Maintained → continued across at least two clauses
Re-introduced → old referent brought back to discourse

The Present Study: -- investigated the reference tracking strategies of native and late deaf adult signers in Turkish Sign Language (TİD) narratives by using a 7-point scale of referent accessibility.

Referent Tracking in Sign Languages

Sign Languages are natural languages of the Deaf communities all around the world. REs for sign languages include the following main tools:

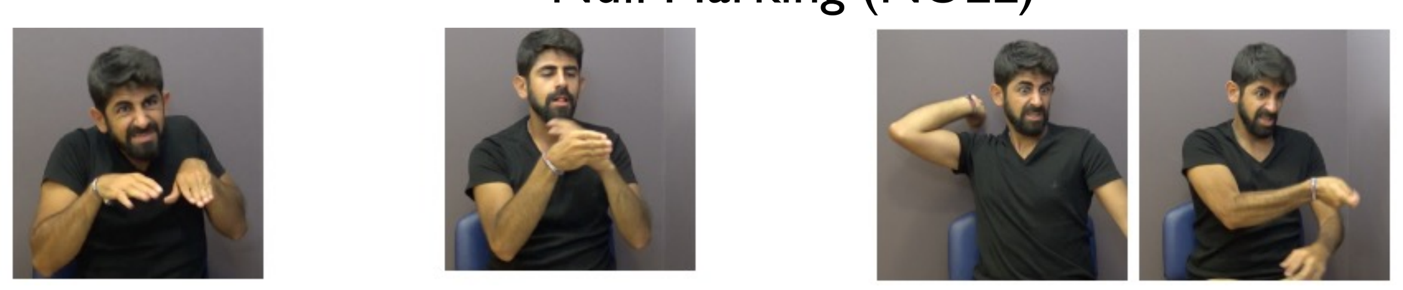
Nominal (NOM)

Pronominal (PRO)

Classifiers (CL)

WCL BPCL *Handling* ExtCL

Null Marking (NULL)



CA *Plain VERB* *Agreement VERB*

Age of Acquisition Effects

Two groups of signers

1) Native deaf signers: have deaf parents, AoA: 0-3 years
2) Late deaf signers: have hearing parents, AoA: >3 years

Native language deprivation among late signers known to influence morphosyntactic [5] and narrative abilities [3].

References & Acknowledgements

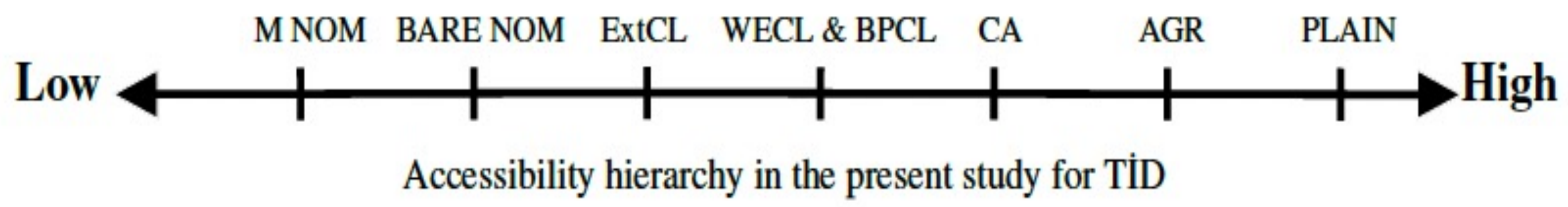
[1] Ahn D. The determinacy scale: A competition mechanism for anaphoric expressions [PhD Thesis]. Harvard University; 2019. [2] Ariel M. Accessing Noun-Phrase Antecedents. Routledge; 1990. 284 p. [3] Becker C. Narrative competences of Deaf children in German Sign Language. Sign Language & Linguistics. 2009, 12(2):113–60 [4] Bel A, Ortells M, Morgan G. Reference control in the narratives of adult sign language learners. International Journal of Bilingualism. 2015;19(5):608–24 [5] Boudreault P, Mayberry R. Grammatical processing in American Sign Language: Age of first-language acquisition effects in relation to syntactic structure. Language and Cognitive Processes. 2006. [6] Bürkner P-C. Advanced Bayesian Multilevel Modeling with the R Package brms. The R Journal. 2018; 10(1):395. [7] Czubek TA. A comprehensive study of referring expressions in ASL. 2017;244. [8] Frederiksen AT, Mayberry RI. Reference tracking in early stages of different modality L2 acquisition: Limited over-explicitness in novice ASL signers' referring expressions. Second Language Research. 2019;35(2):253–83. [9] Morgan G. Discourse cohesion in sign and speech. 2000. [10] Nuhbalaoglu D. Comprehension and production of referential expressions in German Sign Language and Turkish Sign Language: An empirical approach [Doctoral Dissertation]. [Germany]: Georg-August-Universität Göttingen; 2018. [11] Perniss P, Özyürek A. Visible Cohesion: A Comparison of Reference Tracking in Sign, Speech, and Co-Speech Gesture. Topics in Cognitive Science. 2015. [12] Sloetjes H, Wittenburg P. Annotation by Category: ELAN and ISO DCR. In: Proceedings of the Sixth International Conference on Language Resources and Evaluation (LREC'08). Marrakech, Morocco: European Language Resources Association (ELRA); 2008. [13] Swabey LA. The Cognitive Status, Form and Distribution of Referring Expressions in ASL and English Narratives [Unpublished Doctoral Dissertation]. [Minneapolis, USA]: University of Minnesota; 2002. [14] Toole J. The Effect of Genre on Referential Choice. In 1996. p. 263. [15] Williams J. Zero Anaphora in Second Language Acquisition: A Comparison among Three Varieties of English. Studies in Second Language Acquisition. 1988; 10(3):339–70.

HIGHLIGHTS

- Deaf native and late signers' reference tracking examined with a story-telling paradigm in Turkish Sign Language.
- Nominals and SASS mainly used for referents with low accessibility (most to introduce).

ACCESS TO DATA, CODE & POSTER

- Null markers and classifiers favored for highly accessible referents.
- Plain verbs found to be the most implicit marker of reference.



Accessibility hierarchy in the present study for TİD

- Both groups of signers used the same REATs but late signers had slightly lower accessibility ratings (i.e., used more overt markers of reference).
- Limited evidence of over-redundancy in late signers' reference tracking compared to native signers.

METHODS

Participants:
8 native and 8 late deaf adult signers.
Late signers' exposure to TİD between ages 3-17.

Procedure:
Participants shown 10 short wordless clips from a cartoon and asked to retell them.

Accessibility Scoring (following [14])
5 for most accessible and -2 for least accessible) based on:

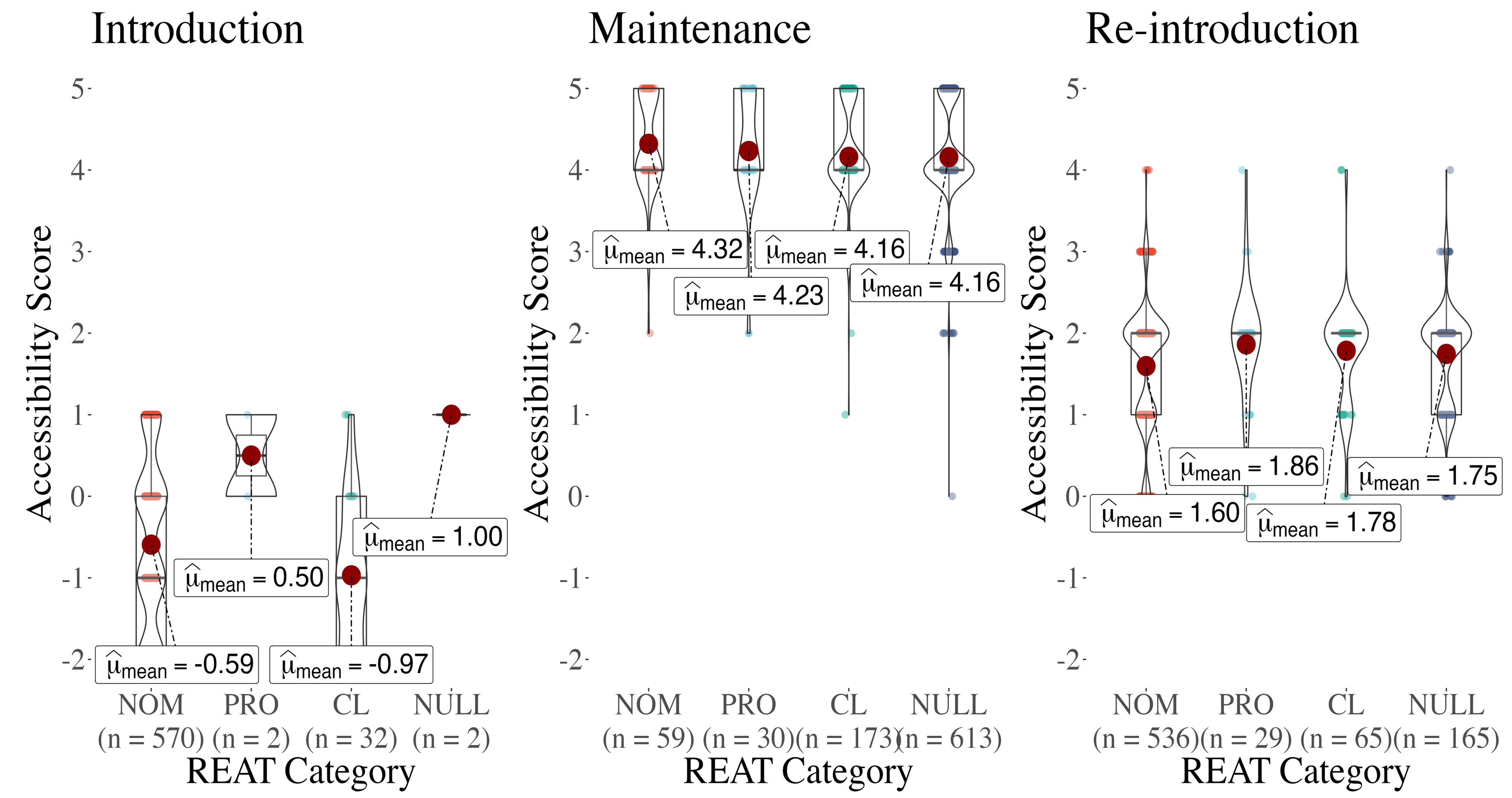
(i) the number of propositions back to previous mention of the current referent
(ii) topicality/saliency of the current referent
(iii)number of matched competitors between the referent and its previous mention

Annotation
Using ELAN [12], we annotated the accessibility score, discourse status, and REAT.

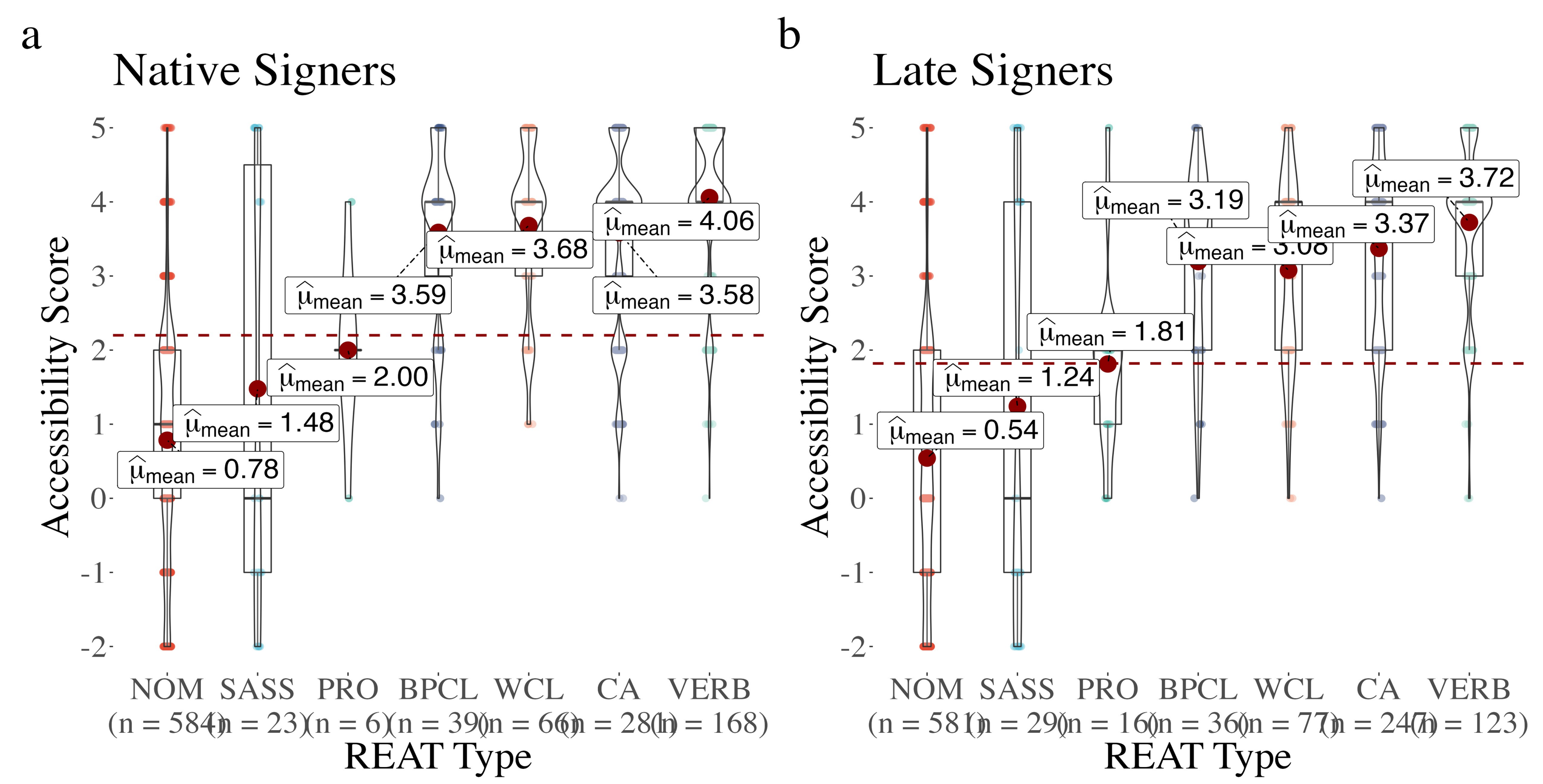
RESULTS

We fit a Bayesian linear regression model using the brms package [6] in R to accessibility score (dependent variable) with discourse status and acquisition group as fixed effects and subject as random effect.

Maintenance condition greatly increased accessibility ratings *(β = 4.86, 95% CI [4.76, 4.95]) whereas* ***introduction greatly decreased accessibility*** *(β = - 4.68, 95% CI [-4.78, -4.58]). NULL was used to maintain highly accessible referents but* ***signers overall preferred NOM for lowly accessible referent introduction and re-introduction.***



Native signers *had* ***slightly higher mean accessibility ratings*** *(β = 0.14, 95% CI [0.01, 0.28])* ***despite employing similar mean numbers of REAT.***



DISCUSSION

-- The observed distribution of REAT types was in line with previous observations [7-8, 12].

-- Limited over-explicitness by late signers in reference tracking is akin to findings from hearing L2 acquirers of a sign language [4, 8] and spoken language [15].

Conclusion:

-- Native and late signers share the same linguistic inventory to track referents but differ in pragmatic competence.

-- Delayed first language exposure might negatively affect late deaf signers' pragmatic competence, and this might be reflected in their sensitivity to economy of form.