Where does this end?
Sentence boundary identification in natural DGS

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Fenlon et al. (2007) found that subjects with and without a background in sign language can identify sentence boundaries in their languages with relatively high accuracy. In addition, persons with a background in sign language can identify sentence boundaries in an unknown sign language with high precision. The stimuli used were pre-recorded, pre-practiced narrations. With my study, I raise the **question** whether sentence boundaries in German Sign Language (DGS) can be identified in natural, spontaneous utterances with similar high accuracy as found by Fenlon et al. (2007). The **hypothesis** tested in this study is: „Due to their intuition, native signers of DGS can identify sentence boundaries in natural DGS, resulting in a high inter-annotator agreement."

Preparations

Methodological pre-test

Pre-test to find best test method

4 deaf informants:
- 1 female, 3 male, different age groups
- DGS acquisition: before age of 10 years

4 deaf participants:
- 2 female, 2 male, different age groups
- DGS signers

Results

Informants:
- Personal signing style

➡ Participants need time to adapt to signing style of informants

➡ Calculation of individual signing speed of informants

Participants:
- Individual differences in understanding of the concept „sentence"

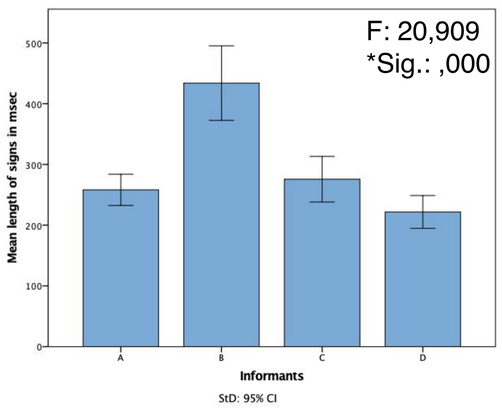
➡ Questionnaire: Segmentation strategy
- Individual response times

➡ Test for individual reaction time (RT) of participants

Study preparations

Informants:

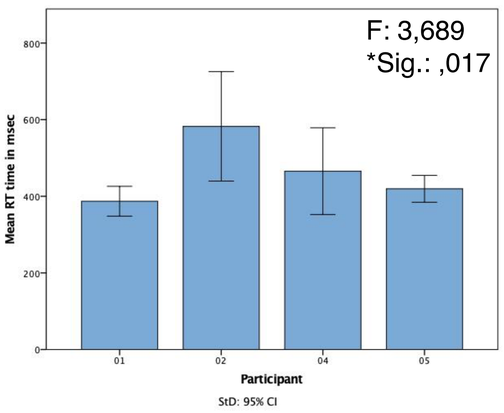
➡ Calculation of individual signing speed of informants (narrow transcription)



	Mean	N	StD
A	258,08	177	172,675
B	433,81	126	348,027
C	275,60	191	262,517
D	221,73	196	192,130

4 deaf participants:
- 2 female, 2 male
- 3 btw. 18-30 years, 1 btw. 45-60 years
- Deaf from birth, at least one deaf parent (one exception, early support)
- Age of DGS acquisition: 0 years
- Qualified for university entrance
- No background in linguistics

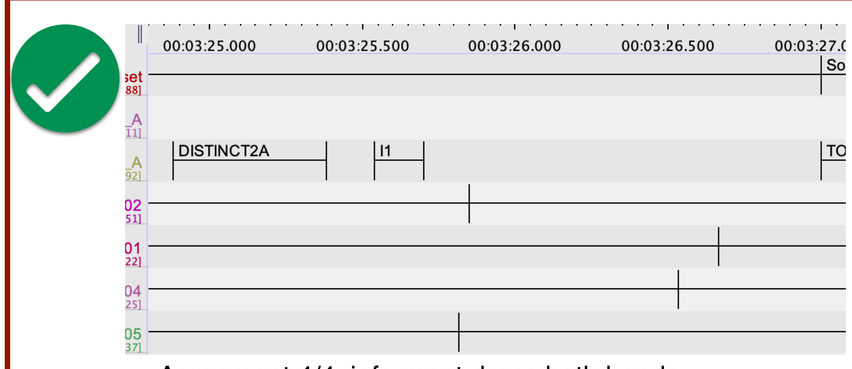
➡ Test for mean individual RT



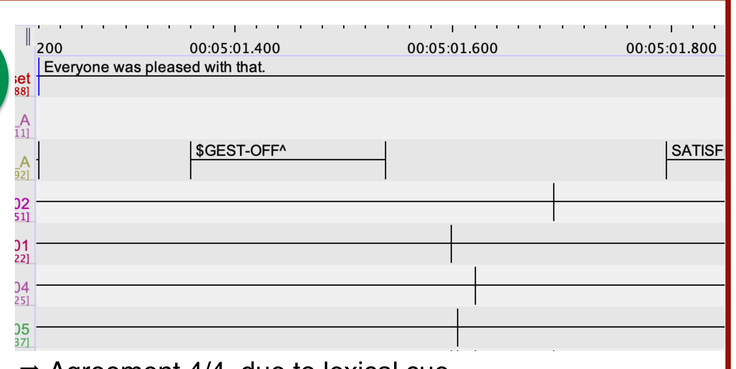
Sentence Boundary Identification Task

	Fenlon et al. (2007)	My study
Task	„Press enter on the keyboard when you perceive a sentence ending." No definition of „sentence" given in the instruction	
Participants	2 groups: 6 deaf native signers of BSL; 6 hearing non-signers	1 group: 4 deaf native signers of DGS
Stimuli	from ECHO project (http://sign-lang.ruhosting.nl/echo) 1 text format: 4 fables Signers: 1 female, 1 male native BSL signers experienced story tellers one week in advance to prepare the fables	from the public DGS Corpus (meine-DGS.de) 2 text formats: Subject Areas and Experience Report Signers: 1 female, 3 male native DGS signers same region of origin as participants spontaneous, natural signing
Procedure	practice: different signers / narrations (avoid familiarity) per participant: 2 stimuli films within-subject reliability: segment each stimulus twice	RT test per participant: 4 stimuli films (only one run) additional time to adjust to signers style additional questionnaire w.r.t. segmentation strategy
Software	ELAN (Version 5.2) [Computer software]. (2018, April 04). Nijmegen: Max Planck Institute for Psycholinguistics. Retrieved from https://tla.mpi.nl/tools/tla-tools/elan/ Segmentation mode	

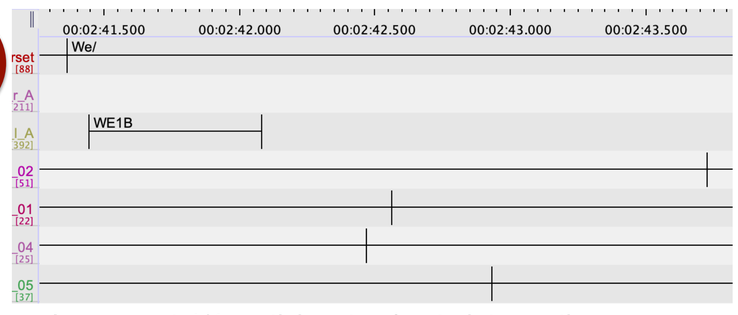
Preliminary Findings



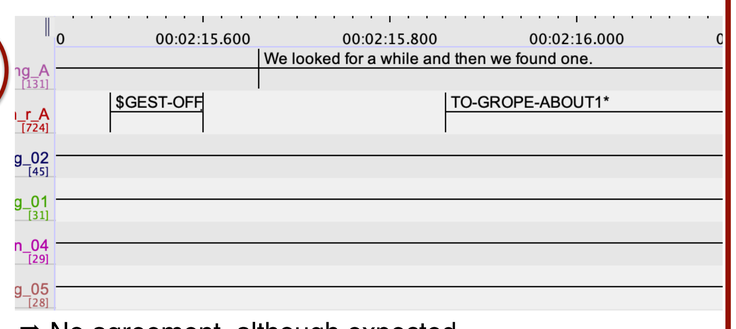
➡ Agreement 4/4, informant drops both hands



➡ Agreement 4/4, due to lexical cue



➡ Agreement 4/4 participants, due to interruption



➡ No agreement, although expected

Discussion & Outlook

➡ Analysis with python script: identifies segmentations that occur within 1 sec. of each other and counts occurrences of agreement among annotators

	4/4 participants	3/4	At least 3/4
A	6	10	16
B	3	14	17
C	2	12	14
D	2	6	8

In contrast to what was found by Fenlon et al. (2007) for pre-practiced stimuli, participants do not agree upon sentence boundaries in natural and spontaneous DGS with high accuracy. Instead, the number of agreements found is surprisingly small. This difference might be due to the different types of stimuli used. However, further analyses are needed for clarification.

Further analyses:
- Include mean RT per participant in analysis
- Analyses of agreements: what triggers them?
- Differences in strategies to mark sentence boundaries between informants
- Analysis of segmentation questionnaire
- Influence of text type

Further research:
- Same test with oral languages
- Same test with hearing persons / signers of a different sign language

Literature

Fenlon, J., Denmark, T., Campbell, R., Woll, B. (2007). Seeing sentence boundaries. In: Sign Language & Linguistics, 10(2). DOI: http://doi.org/10.1075/sll.10.2.06fen

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