

# Evaluating the Alignment of Utterances in the Swedish Sign Language Corpus

Carl Börstell  
University of Bergen  
carl.borstell@uib.no

## Introduction

- There is **no segmentation** of the STS Corpus<sup>1</sup> beyond the individual sign glosses
- Some work<sup>2,3</sup> used **translation-tier** segmentations, or **pauses** as segment-breaks, to **infer utterance units**
- The **syntactic UD annotation** of the STS Corpus in principle = syntactic units

*How do these all align?*

## Correspondence

**Utterance units** do not always align. Some gaps between unit types (see figure) – for instance, not all manual back-channels have translations, but some non-manual back-channels have translations

**Endpoints** of utterance units are not always aligned (see figure)

### Alignment of syntactic, translation and prosodic utterance units

Major gaps and discrepancies marked with red circles



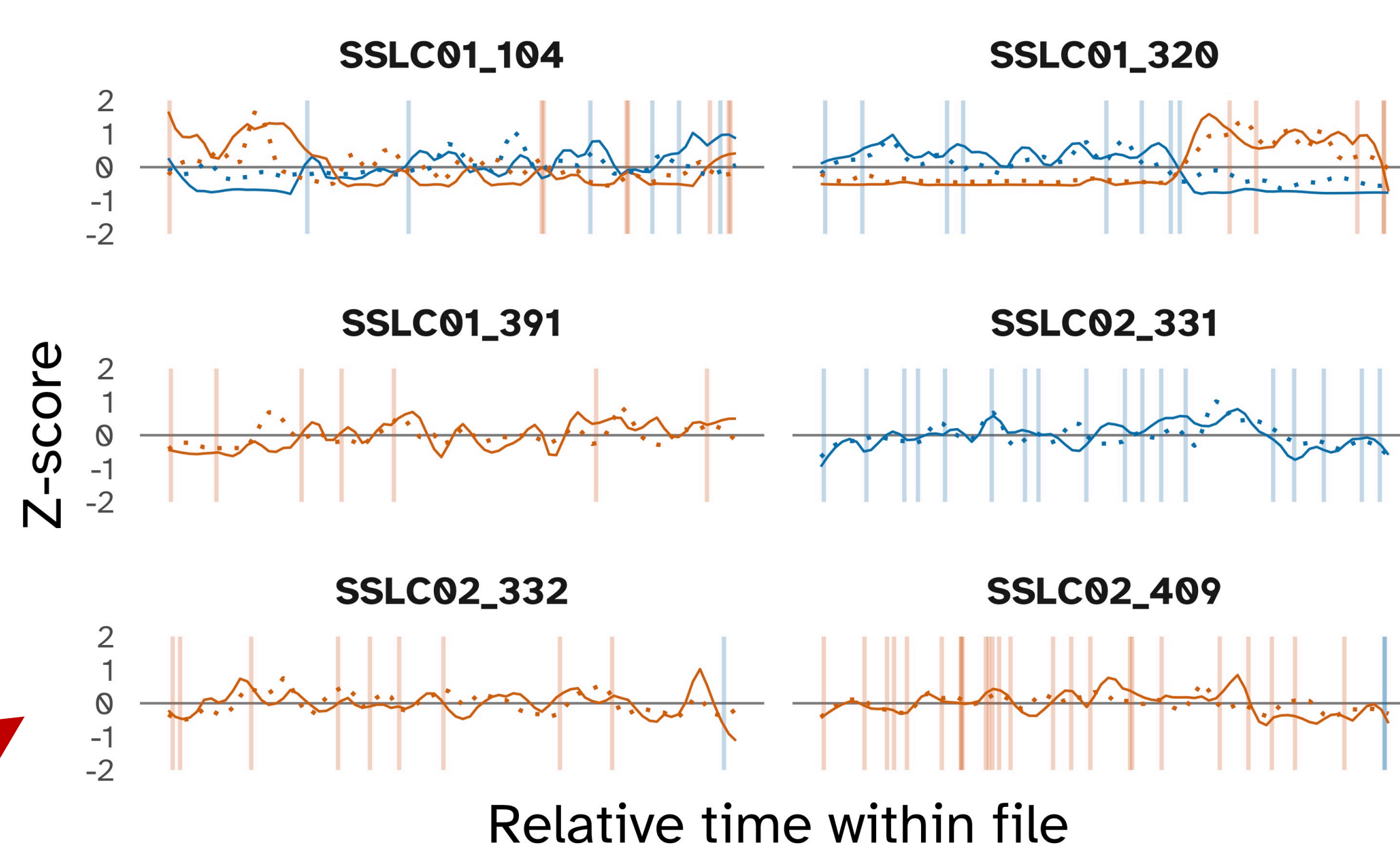
## MediaPipe metric

The subset video files were analyzed with MediaPipe<sup>7</sup> computer vision software: the **movement of the head and hands** was compared to locations with **endpoints** across utterance unit types (see figure)

No clear alignment between computer vision-based activity and endpoints across utterance units

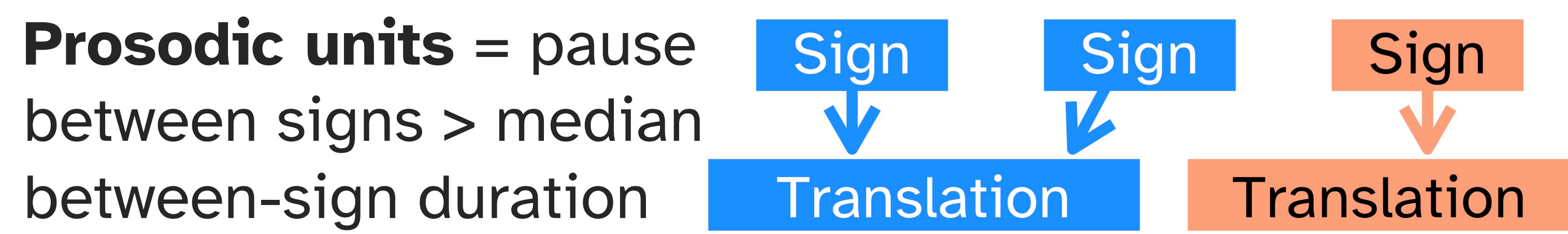
### Relative movement of hands and head

Landmark coordinates for wrists (solid) and nose (dotted) of signers 1 & 2: vertical bars show segmentation points aligned across utterance units



## Inferring units

**Translation units** do not align exactly with sign units, assignment is approximate (see figure)



**Syntactic units** = segmentation in the STS UD data<sup>4</sup>

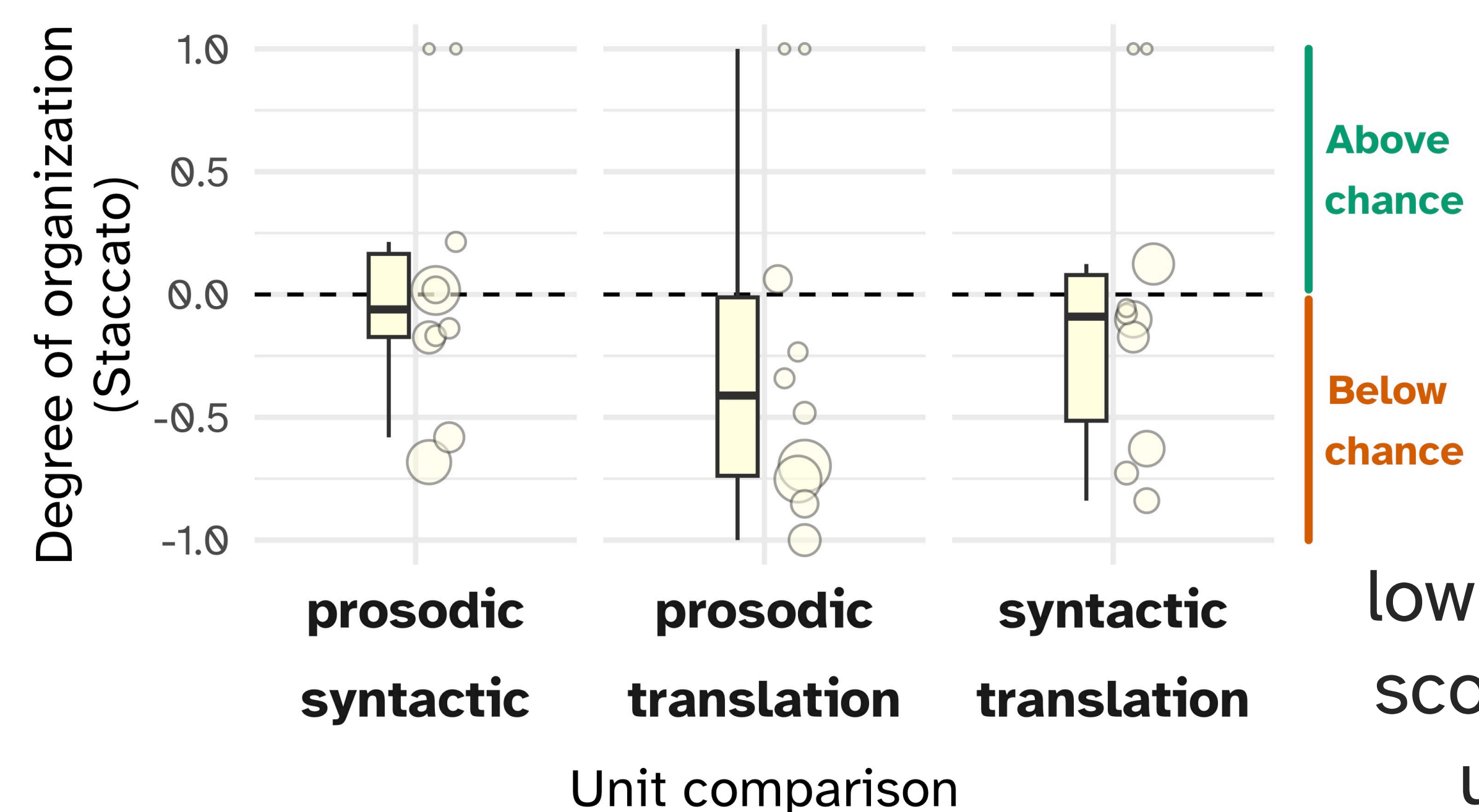
**NB: Based only on a subset of the STS corpus!**

## Alignment score

**Alignment** across unit types was calculated as *degree of organization* with the Staccato method<sup>5</sup> in ELAN<sup>6</sup>

### Degree of organization between utterance units

Distribution of scores for each unit comparison: each circle represents one tier comparison



~1600 signs  
~200 units

Overall, low alignment scores across unit types...

## Conclusions

- Low degree of alignment** across inferred utterance units in a subset of the STS Corpus
- Little overlap** between endpoints of inferred utterance units' & CV-extracted "prosody"
- Preliminary study** based on a **subset** of the STS corpus: more data is crucial for validity!

## References

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