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The SMILE Continuous DSGS Corpus: A Resource for Longitudinal Exploration of Continuous Swiss German Sign Language

Motivation & Background

> Sign languages remain **under-resourced**, especially for **longitudinal and learner-focused** data
> Existing corpora focus on native signers or isolated signs**, limiting broader analysis**
> **Swiss German Sign Language** (**DSGS**) lacks a **large-scale**, **annotated** corpus of **continuous** data suitable for linguistics and sign language processing (SLP)

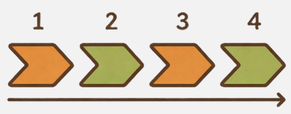
Data & Processing

Participants

10 25

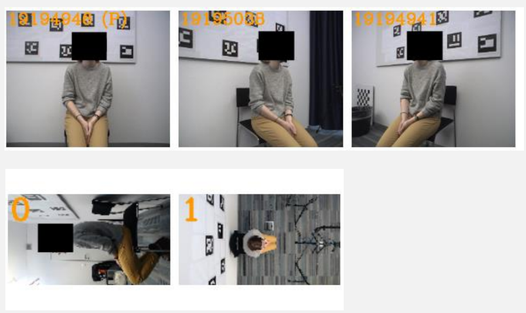
> metadata
> informed consent

Duration



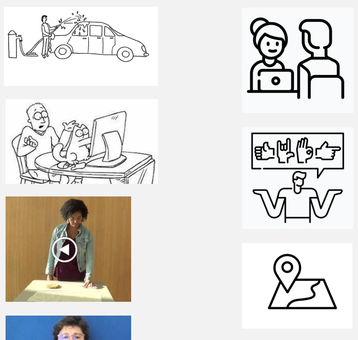
> 18 months
> 4 phases
> longitudinal

Multi-camera settings



> controlled setting

Activities



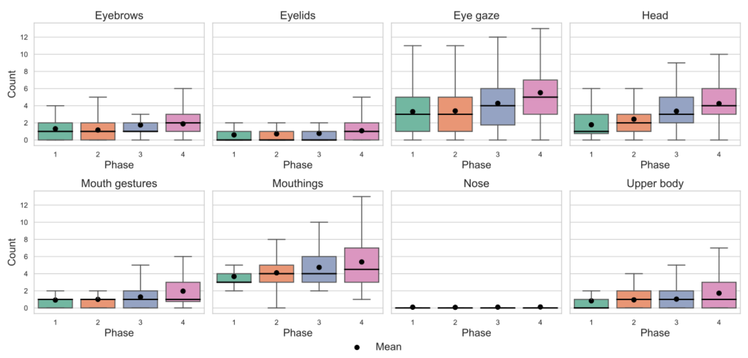
Annotations

> Manual components
> Non-manuals
> Error types in L2
> Acceptability in L1 and L2 (Battisti et al. 2024)
> Annotation agreement

> Pose processing

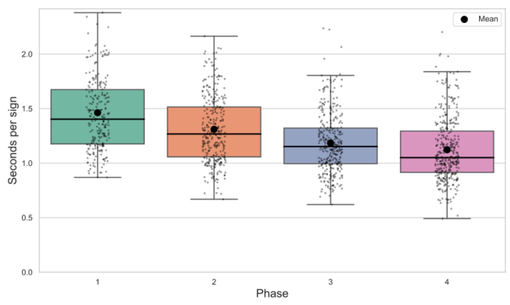
First analyses: Interlanguage study

Use of non manual components



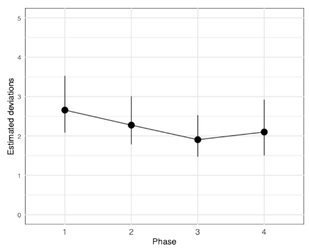
Distribution of individual non-manual components across phases
> Mouth gestures and eye gaze increase

Fluency investigation

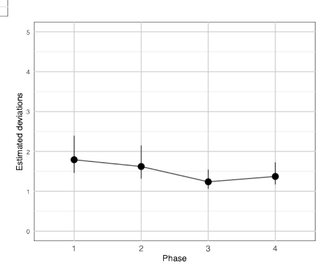


Average signing time per gloss across phases
> Median duration per gloss decreases

Error modeling



Manual component errors



Non-manual component errors

Conclusion & Outlook

> **Open source**: publicly available via SwissUBbase for research purposes under CC BY-NC-SA 4.0
> Valuable data for
  > modeling **sign language acquisition and interlanguage**
  > training **sign language recognition systems**
  > developing **data-driven feedback tools** for learners

> **Future work**:
  > extend annotations to more tasks
  > **support educational and accessibility applications**

SWISSUbase

Swiss National Science Foundation