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EYE-TRACKING OF SIGN LANGUAGE: THE EFFECT OF LEARNING EXPERIENCE

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Eye-tracking (ET) research on sign language indicates that experienced or native signers tend to fixate primarily on the face while observing sign language, whereas non-signers focus more on the hands in the signing space (Sander *et al.*, 2025).

However, findings regarding sign language learners remain somewhat ambiguous. Emmorey *et al.* (2009) reported that beginner sign language learners tend to fixate more on the signer's mouth, while experienced native signers focus predominantly on the signer's eyes and surrounding facial regions. In contrast, other studies have found no significant differences in face fixation time between groups (Agrafiotis *et al.*, 2003; Muir and Richardson, 2005).

We have initiated a longitudinal study tracking learners of Czech Sign Language (CSL; N = 19) to examine whether their visual attention patterns change over time and to compare them with a control group of naive participants (N = 21) with no prior CSL experience. The study involves co-registration of ET and electroencephalography (EEG; not reported here). During each session, participants watch 28 short CSL videos (Fig. 1) while completing an attention task requiring recognition of excerpts from the videos.

In total, three sessions are planned: the first shortly after participants begin learning CSL (together with the naive control group), the second approximately six months later, and the third after one year. At the conference, we plan to present data from the first two sessions; however, until this point, the data are not yet processed (first session) or collected (second session). We hypothesize that by the second session, the participants will exhibit increased fixation on the face compared to both their first session and the naive control group.

Figure 1: Example of video stimuli.

References

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