Selective attention to the mouth of signing faces

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WORKSHOP ON INFANT LANGUAGE DEVELOPMENT
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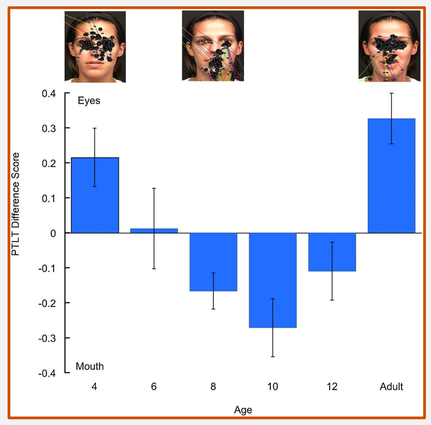
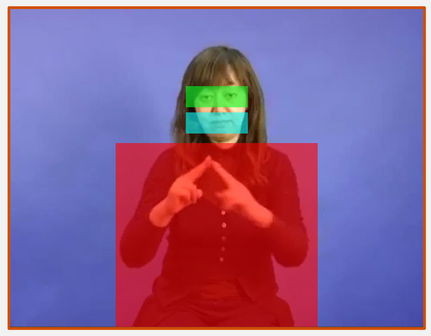
Introduction

Infants show a **U-shaped** scanning pattern of **talking faces**[1]

Similar patterns with **non-linguistic videos**[2]

Sign language is predominantly **visual**





Nacar et al. (in prep.) found that **8 mo** but **not 12 mo can discriminate** BSL from JSL

Where will 8 and 12 mo infants look at when seeing a **person signing**?

Will this effect be modulated by **bilingualism** as sometimes reported in other types of audiovisual processing[2, 3]

Participants

Age	Monolinguals	Bilinguals
8 mo	13	14
12 mo	17	11

Procedure

Passive watching of **~10 secs videos** of a person signing in each language (27 videos in BSL/ 27 videos in JSL) presented in blocks of 5 (max. 11 min)

Gaze registered using eye-tracker (Tobbi Pro Spectrum).

AOIs: eyes, mouth, body

PTLT formula (Pons et al., 2015)

$$\frac{TL_{AOI}}{TL_{eyes} + TL_{mouth} + TL_{body}}$$

Results

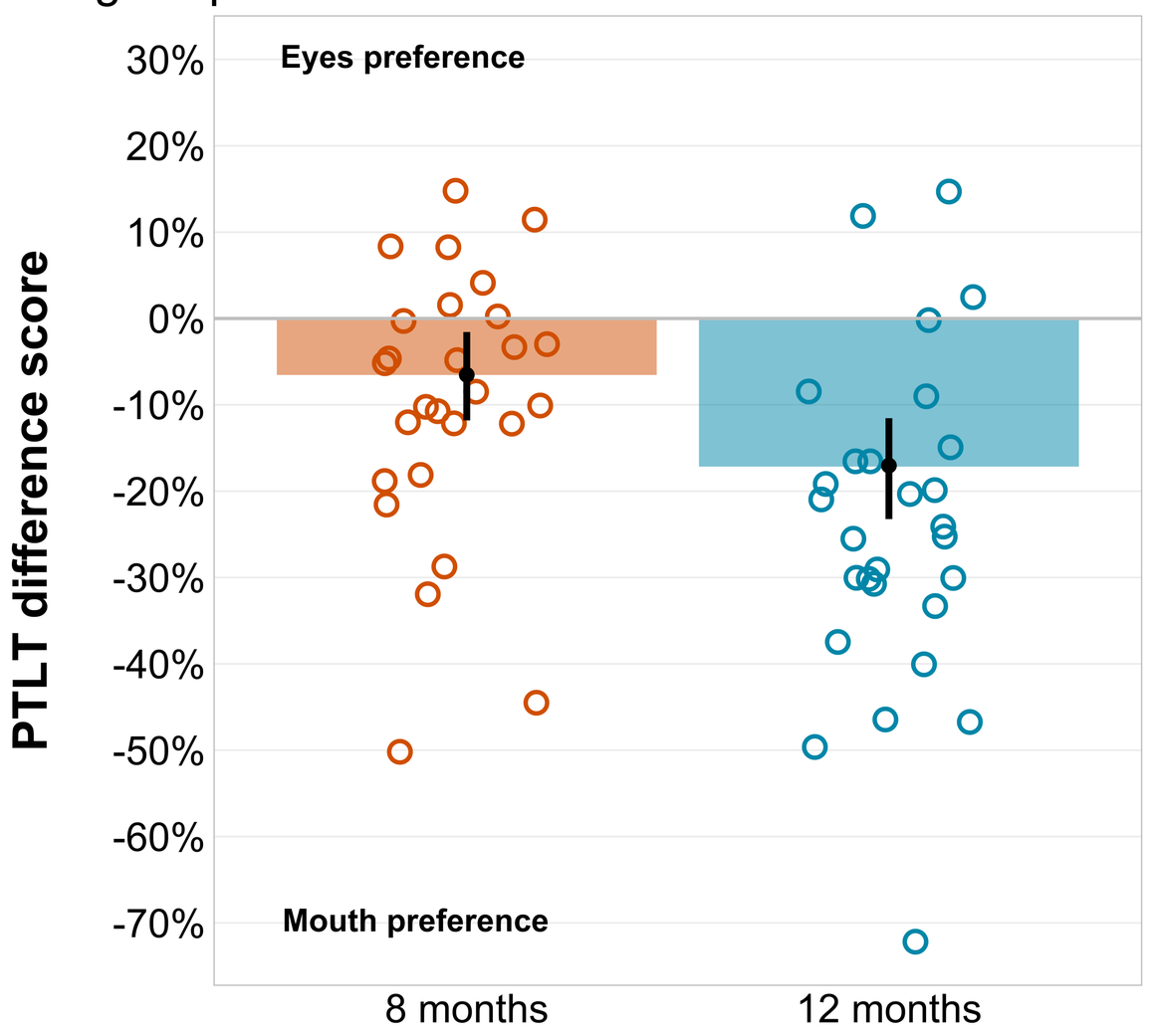
Generalized Bayesian multilevel model in `brms`

Zero-inflated Beta link distribution

```
ptlt ~ aoi * age_group + (1 + aoi | participant)
```

No effect of bilingualism

Difference between eye and mouth PTLT
Marginal posterior mean and 95% credible interval



Conclusions

Mouth preference in all groups, which increases with **age**

No shift back to the eyes

Gaze patterns were not modulated by languauge profile

References

[1] Lewkowicz, D. J., & Hansen-Tift, A. M. (2012). Infants deploy selective attention to the mouth of a talking face when learning speech. *Proceedings of the National Academy of Sciences*, *109*(5), 1431–1436. https://doi.org/10.1073/pnas.1114783109

[2] Ayneto, A., & Sebastian-Galles, N. (2017). The influence of bilingualism on the preference for the mouth region of dynamic faces. *Developmental Science*. https://doi.org/10.1111/desc.12446

[3] Pons, F., Bosch, L., & Lewkowicz, D. J. (2015). Bilingualism Modulates Infants' Selective Attention to the Mouth of a Talking Face. *Psychological Science*. https://doi.org/10.1177/0956797614568320

Poster, materials and code here!

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