

# Selective attention to the mouth of signing faces

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## Introduction

Infants show a U-shaped scanning pattern of talking faces: **preference to the mouth increases, then decreases with age<sup>1</sup>**

**Bilinguals (BIL)** look longer to the mouth than **monolinguals (MON)**<sup>2, 3</sup>

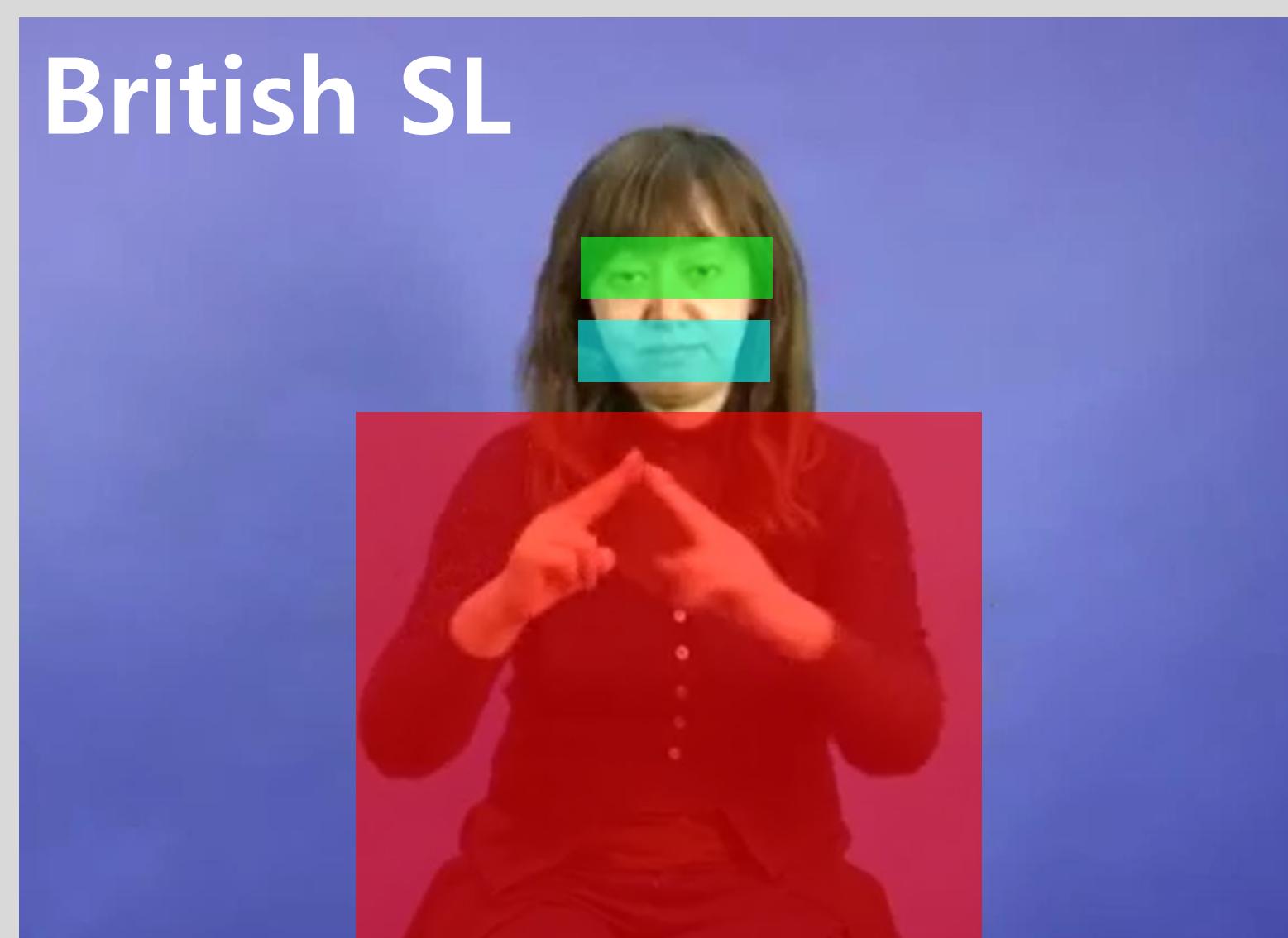
Sign language is predominantly **visual**

## Research question

Will 8- and 12-month-old MON and BIL infants look similarly to a person signing?

## Methods

### Stimuli



### Participants

Age	Monolinguals	Bilinguals
8 mo	13	14
12 mo	17	11

### Procedure

Watch short videos on a 24" screen in blocks of 5 in each language (BSL/JSL) (max. 11 min)  
Gaze registered using eye-tracker

## Data analysis

Generalized Bayesian multilevel model in brms

Zero-inflated Beta link distribution

$\text{ptlt} \sim \text{aoi} * \text{age\_group} * \text{lang\_profile} + (1 + \text{aoi} | \text{id})$

ptlt: proportion of total looking time

aoi: Area of interest (eyes vs. mouth)

age\_group: 8 months vs. 12 months

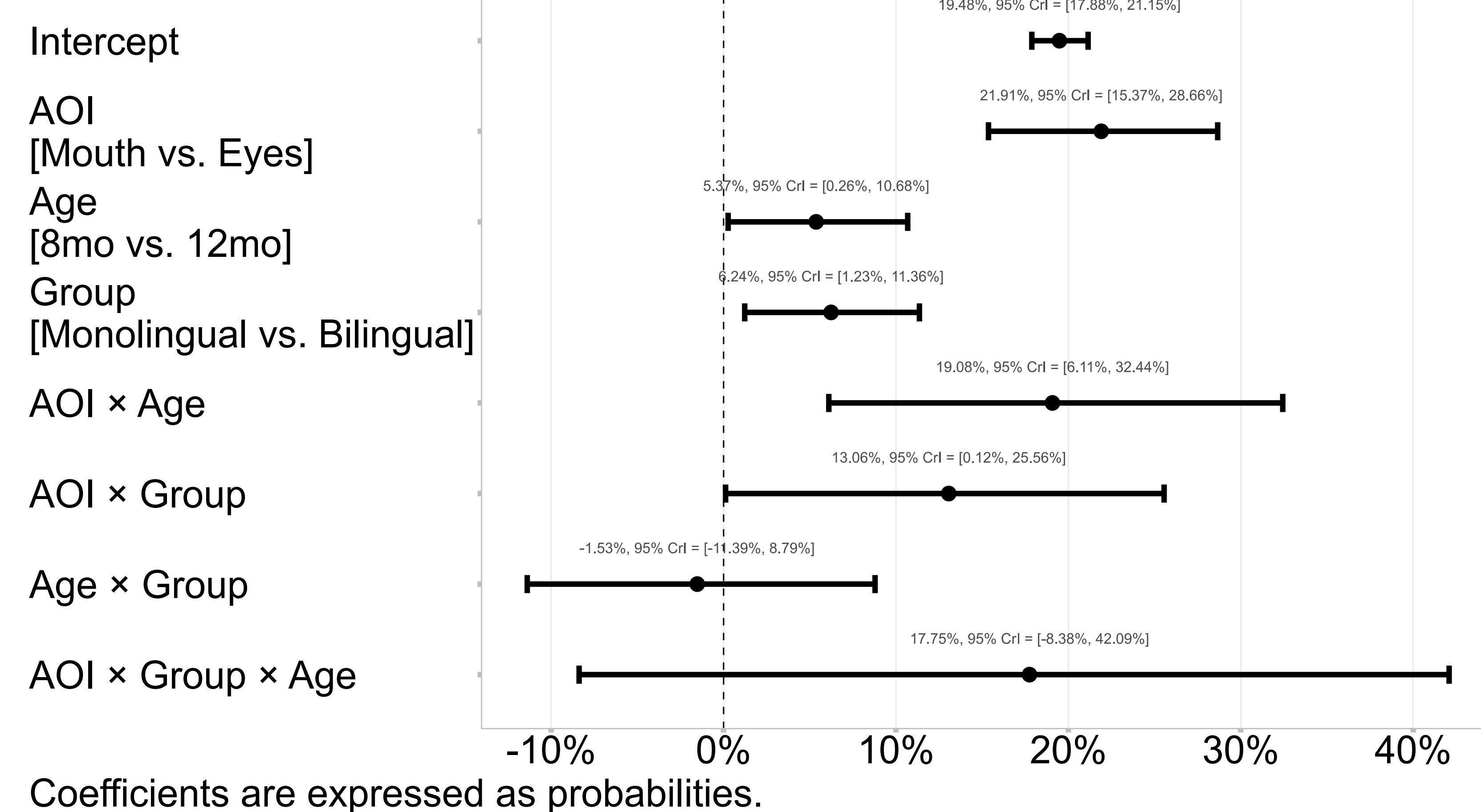
lang\_profile: Monolinguals vs. Bilinguals

id: participant index

## Results

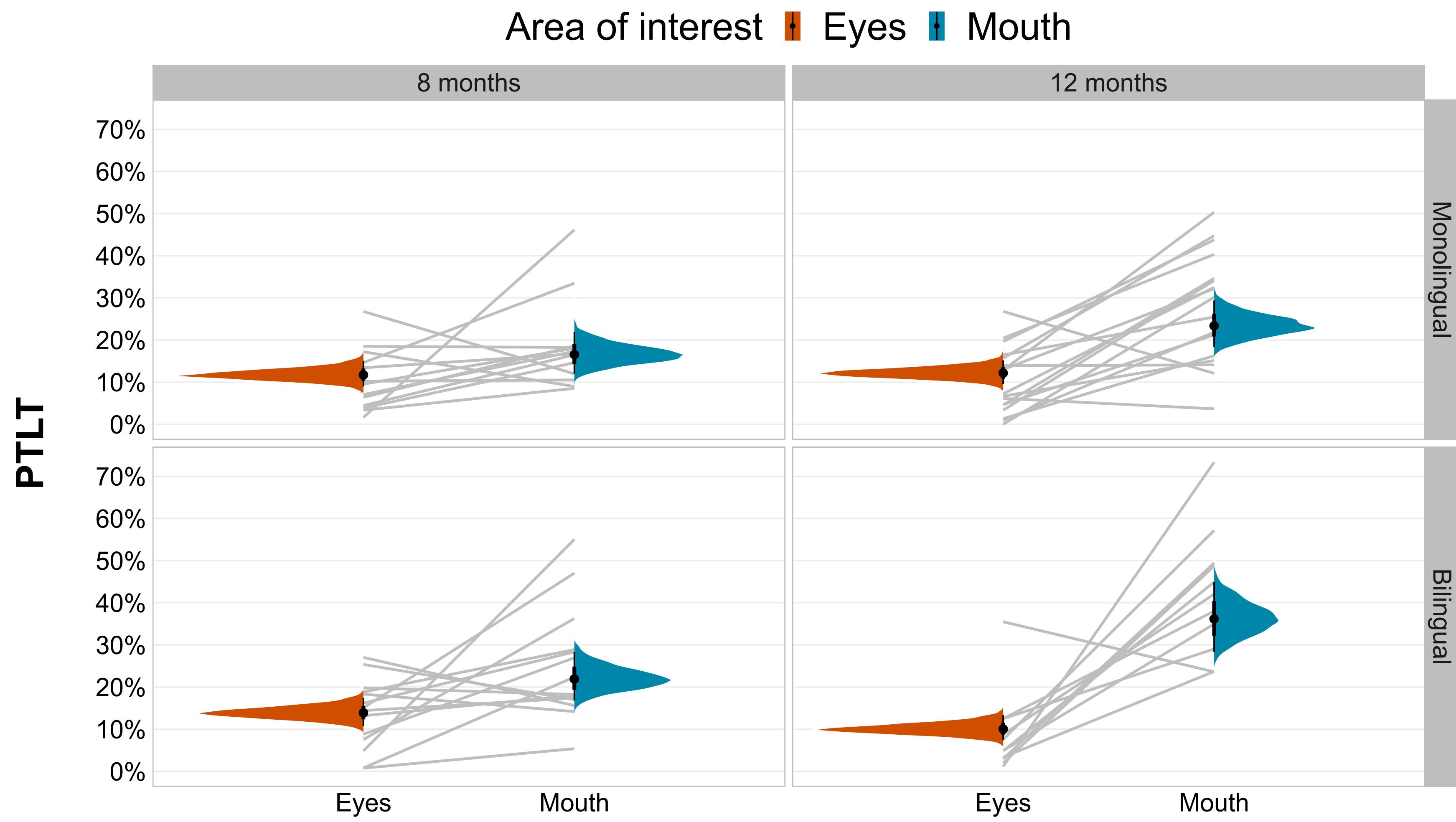
### Model outputs

Posterior mean and 95% credible interval



### PTLT marginal means by AOI, age group, and language profile

Posterior mean and 95% credible interval



## Conclusions

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

No shift back to eye preference at 12 mo: sign language perceived as non-native speech?

### 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>