

# Does degree of partner's extraversion affect children's speech accommodation?

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# outline

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Introduction

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Discussion

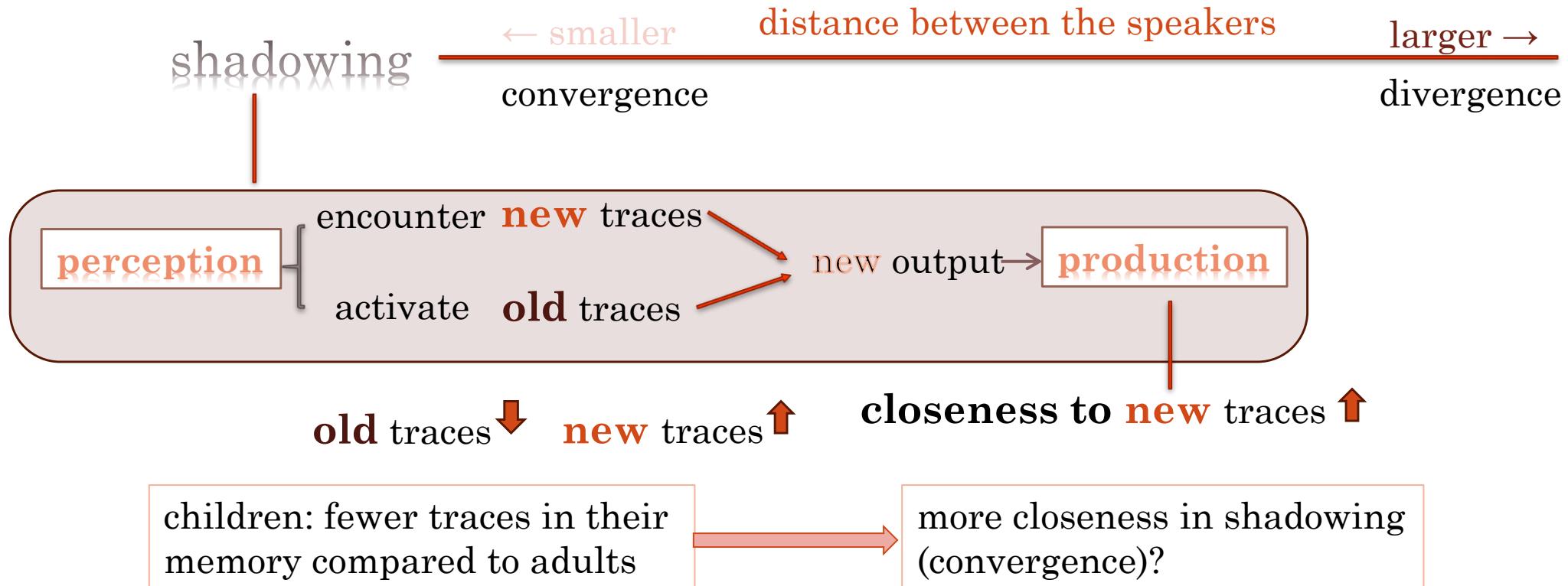


# Introduction

# Speech accommodation

- Definition: speakers adjust their speech features based on those of their **conversation partners** during interactions
- Strategies:
  - Convergence
  - Divergence
- Theoretical framework
  - Communication Accommodation Theory (CAT; Giles et al., 1973):
    - socially motivated & consciously controlled
  - Interactive Alignment Model (IAM; Pickering & Garrod, 2004)
    - automatic & driven by priming effects
  - Hybrid model (Lewandowski, 2012; Lewandowski & Jilka, 2019): social motivations + internal psychological factors

# Child speech accommodation: exemplar based theory



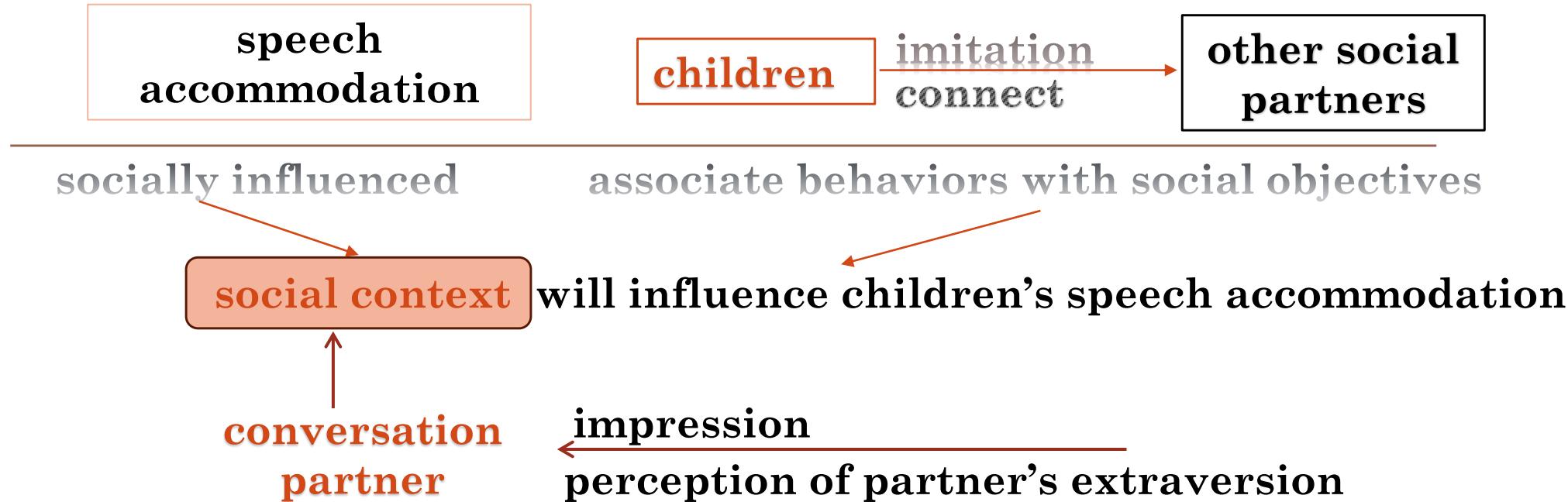
Empirical evidence:

Greater imitation of voice onset time (VOT) than adults (Nielsen, 2014)

# Child speech accommodation: acquisition view

- Developmental: prosodic accommodation was **developmentally learned skills** that children needed to acquire in early years (Wynn et al., 2018)
  - Evidence: children aged 6-14 did not show accommodation of speech rate
- Innate: **social factors** are main contributor to speech accommodation – **innate** in children
  - Evidence: pitch convergence (Lehnert-LeHouillier et al., 2020); segmental accommodation (Hogstrom et al., 2018)

# Child speech accommodation: the role of social context





## Research Questions

# Research Questions

- Do children accommodate their speech features towards their conversational partner?
- If so, do partner's degree of extraversion play a role?



## Methods

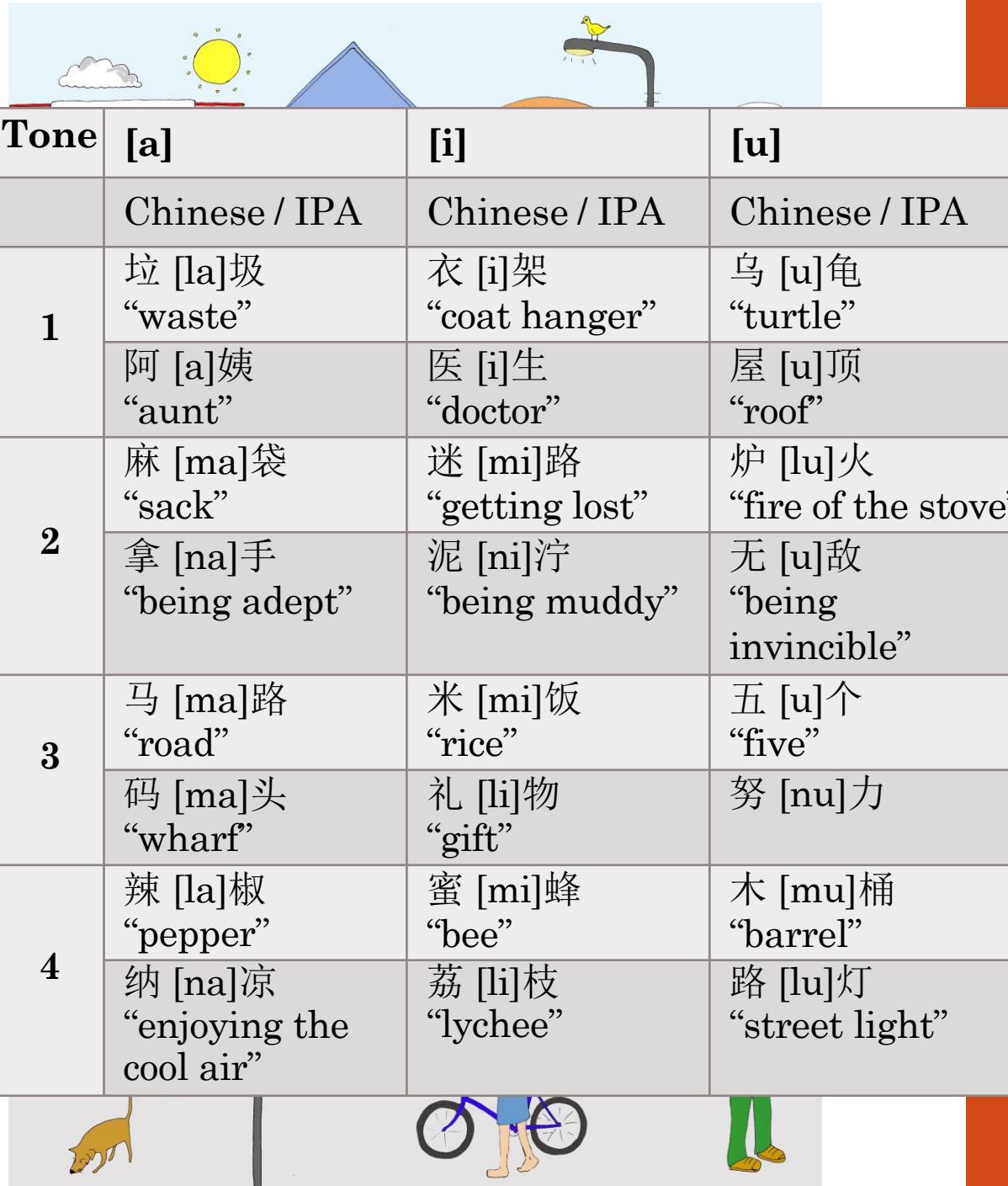
# Methods

- Participants
  - 56 Mandarin-speaking children (26f, 30m; mean age:  $10.23 \pm 0.62$ )
  - Formed same-gender pairs— 28 pairs
- Tasks
  - ‘spot the difference game’  $\times$  4 themes
  - Big-five personality questionnaire (Mandarin version; Li, 2003) – evaluate partner’s extraversion trait
- Materials
  - Pictures adapted/recreated based on Diapix UK task (Baker & Hazan, 2011):
    - four pairs of pictures in different themes
    - each pair has six differences related to six keywords



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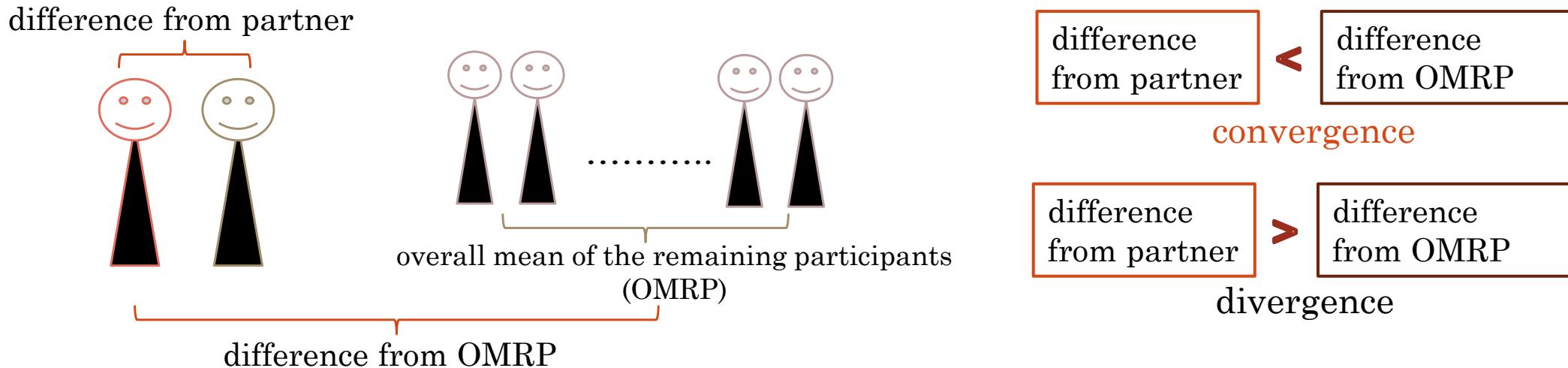
Tone	[a]	[i]	[u]
1	Chinese / IPA 垃 [la]圾 “waste”	Chinese / IPA 衣 [i]架 “coat hanger”	Chinese / IPA 乌 [u]龟 “turtle”
	阿 [a]姨 “aunt”	医 [i]生 “doctor”	屋 [u]顶 “roof”
2	麻 [ma]袋 “sack”	迷 [mi]路 “getting lost”	炉 [lu]火 “fire of the stove”
	拿 [na]手 “being adept”	泥 [ni]泞 “being muddy”	无 [u]敌 “being invincible”
3	马 [ma]路 “road”	米 [mi]饭 “rice”	五 [u]个 “five”
	码 [ma]头 “wharf”	礼 [li]物 “gift”	努 [nu]力
4	辣 [la]椒 “pepper”	蜜 [mi]蜂 “bee”	木 [mu]桶 “barrel”
	纳 [na]凉 “enjoying the cool air”	荔 [li]枝 “lychee”	路 [lu]灯 “street light”

# Methods

$$F0 \text{ difference} = \text{Keyword}_{\text{child}, \log f0} - \text{Keyword}_{\text{compared\_object}, \log f0}$$

## Euclidean Distance of vowel formant

$$= \sqrt{(\text{Keyword}_{\text{child}, F1} - \text{Keyword}_{\text{compared\_object}, F1})^2 + (\text{Keyword}_{\text{child}, F2} - \text{Keyword}_{\text{compared\_object}, F2})^2}$$



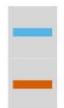
Model<- difference ~ compared\_object \* partner\_extraversion\_score + (1 | subject) + (1 | item)

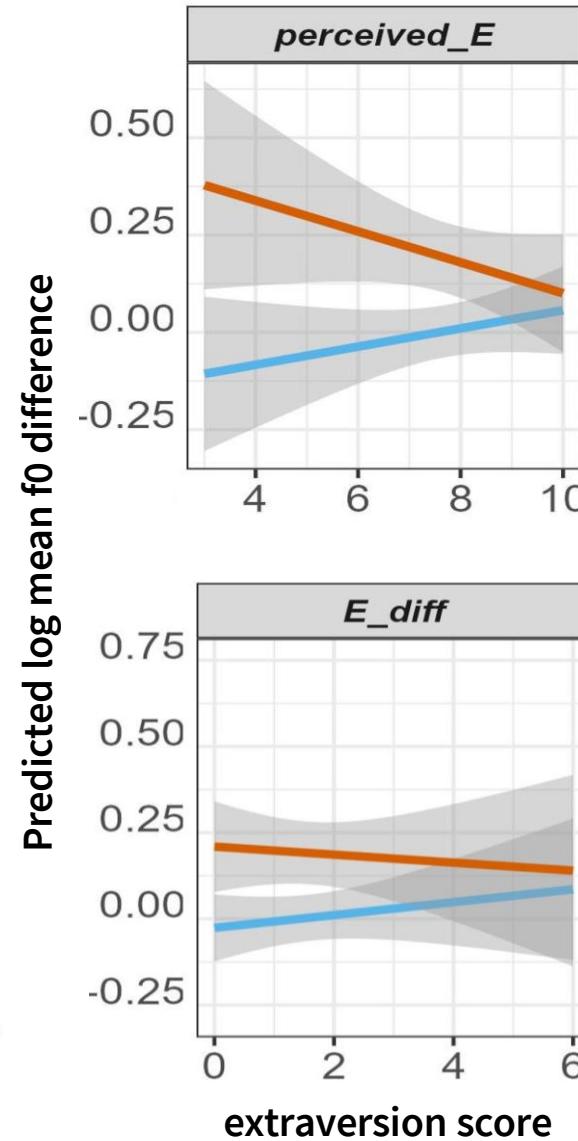


# Results

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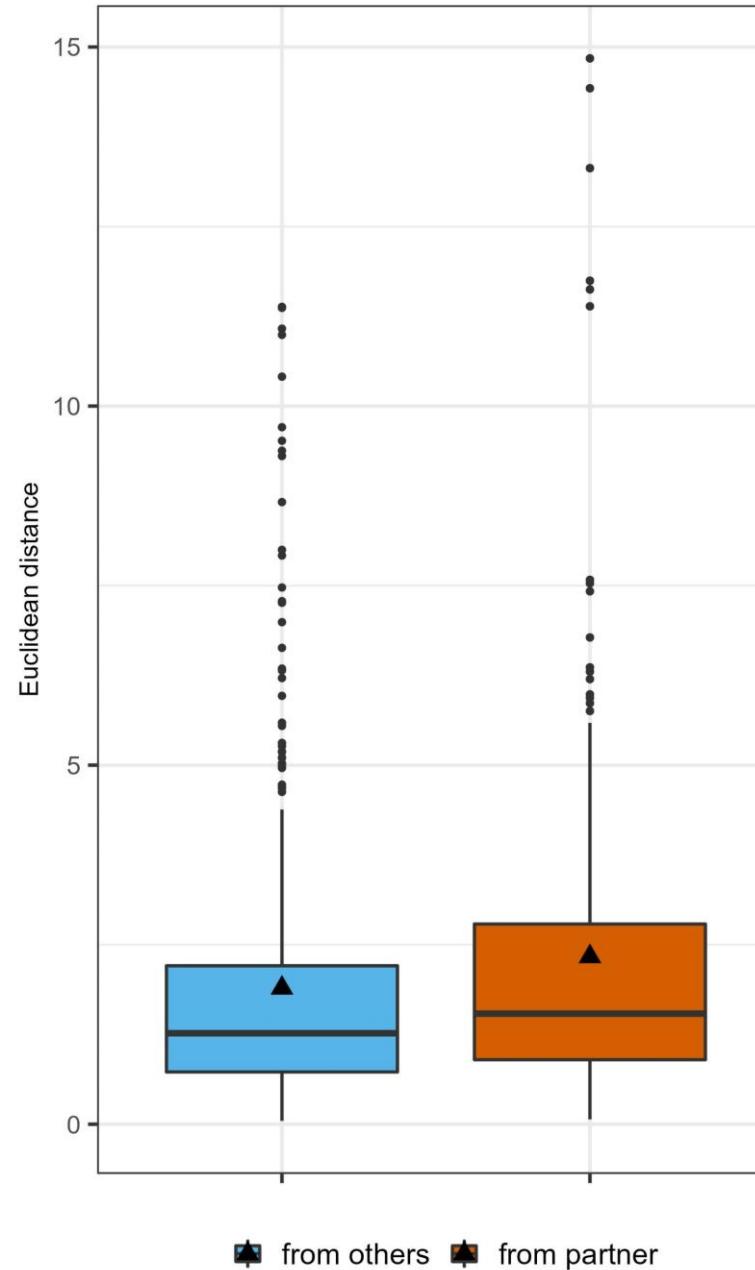
- Significant interaction between the compared object (partner vs. remaining means) and the partner's extraversion score for f0 difference ( $\chi^2 = 25.231$ , Df = 2,  $p < 0.001^{***}$ ).
  - Higher partner's extraversion score, lower difference, more convergence

 from OMRP  
from partner



# Results

- Insignificant trend of divergence in vowel formant





## Discussion

# Discussion

- Children **aged nine to eleven** are already well- equipped with the necessary speech skills for accommodation.
- Children were more likely to converge their f0 when they thought their partner was more extravert
  - Children's speech behaviors are not only guided by their own personality traits but also influenced by their impression of their conversation partners
- Convergence of f0 & trend of divergence of vowel formant
  - Different accommodation strategies to serve different functions
    - Convergence: affective function
    - Divergence: cognitive function –facilitate communication

# Summary

- Children demonstrated convergence of f0 towards their conversation partner, which was positively correlated with their evaluation of the partner's extraversion score.
- They converged their f0 to reduce social distance while diverging the vowel formant to distinguish their speech and facilitate task completion.

# Acknowledgement

- Supervisor Dr. Chen Si and our lab members!
- Research funding provided by Hong Kong Polytechnic University.
- The children and the primary school that allowed us to collect data there.



Thank you!