

## Introduction

**Speakers are communicatively efficient** [1]: Balance efficiently between **minimizing production effort** and **maximizing understandability**

- Avoid 'costlier' linguistic material when possible
- Use 'costlier' linguistic material when understandability is at risk

**What can endanger understandability?**

Low predictability of the linguistic message (e.g. [2])

Noisy environment (e.g. [3])

Listeners' comprehension difficulty

**The impact of listeners' comprehension difficulty on speakers' speech:**

- Speakers increase linguistic material in *local* cases of misunderstandings [4]
- Speakers also modify their speech based on *global* estimations of listeners' knowledge state [5]

**Speakers should increase linguistic material when conversing with language learners**

**Increased linguistic material when conversing with (L1) language learners:**

- Predictable words are reduced *less* in CDS compared to ADS [6,7]
- Vowels are hyperarticulated *more* in CDS [8]
- Parents talk less redundantly to their infants as they grow older [9]

**Is this adaptation driven by listeners' perceived language proficiency or by their perceived general cognitive capacities?**

**Do speakers use increased linguistic material with L1 and L2 learners alike?**

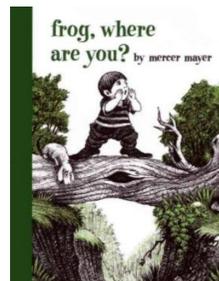
**Case study: Referential choice**

- Pronouns are typically shorter (and perhaps easier to produce) than full NPs [10]
- Communicative efficiency: Pronouns should be used less when understandability is at risk [11]

**Speakers should use pronouns *less* when conversing with language learners**

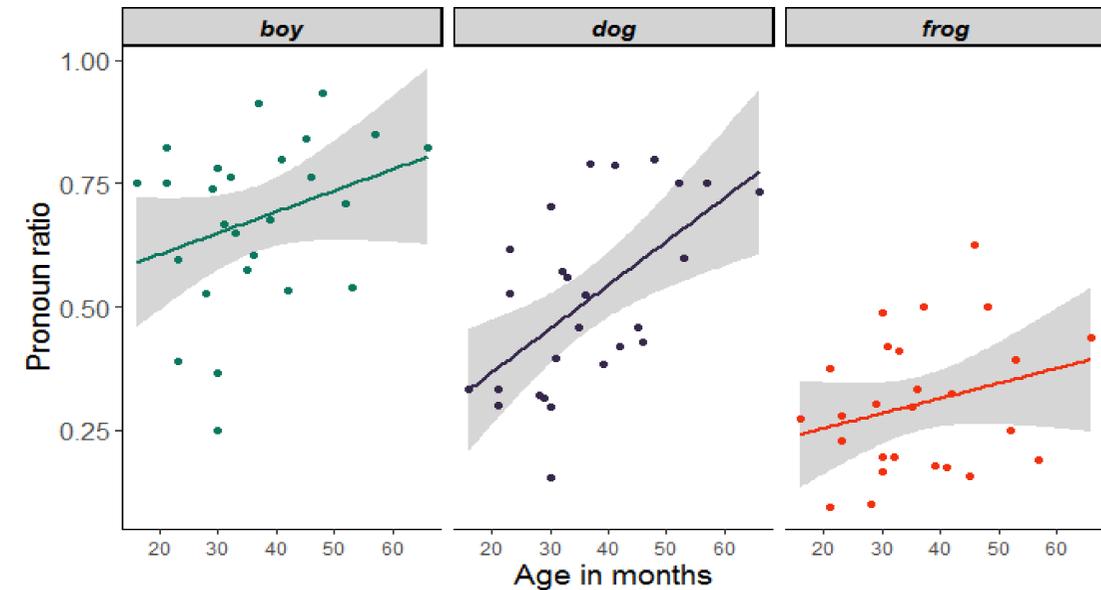
## Picture book elicitation task

- Tested the impact of listeners' proficiency on usage of pronouns vs. full NPs:
  - **L1 listeners:** developmental (26 dyads of parents and children 1;4- 5;6y)
  - **L2 listeners:** native vs. non native adult speakers (n=58, 2 confederates)

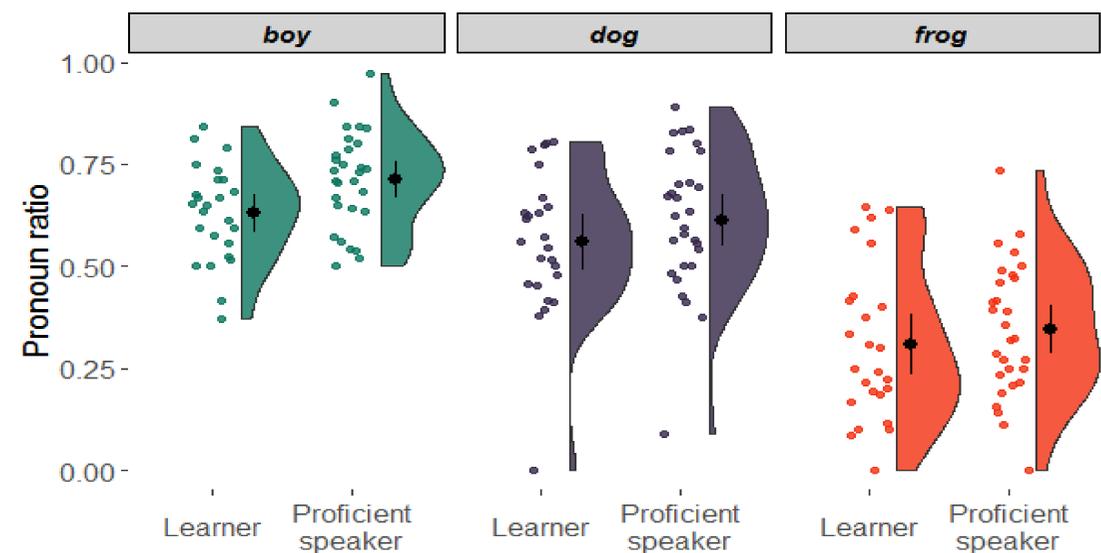


- Calculated **pronoun ratio** per character: pronouns/all mentions
- Pronoun ratio should be lower when talking to learners compared to proficient speakers:
  - **L1 listeners:** should increase with age
  - **L2 listeners:** should be higher when talking to the proficient speaker confederate

## L1 listeners results:



## L2 listeners results:



## Discussion

- Speakers use more linguistic material when talking to language learners compared to proficient speakers – L1 and L2 learners alike (though stronger effect size for L1 learners!)
- Supporting the idea that referential choice is impacted by communicative efficiency (see [10])
- Open question: The role of the learner type (L1/L2) in processes of language change (see [12])

## References (clickable links)

1. Jaeger & Buz (2017), 2. Mahowald et al. (2013), 3. Zhao & Jurafsky (2009), 4. Buz, Tanenhaus & Jaeger (2016), 5. Loy & Smith, 2020, 6. Pate & Goldwater (2015), 7. Tippenhauer et al. (2020), 8. Uther, Knoll & Burnham (2007), 9. Tal, Grossman & Arnon (2021), 10. Arnold & Zerkle (2019), 11. Tily & Piantadosi (2009), 12. Lupyán & Dale (2010)