

Grammatical Gender Influences Dutch 5-year-olds' Pronoun Interpretation in a Pointing Task

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Background: Pronoun Interpretation

Reflexives can be “ok” pronouns, but not vice versa:



Miss Cat is touching her
Miss Cat is touching herself

Miss Cat is touching her
Miss Cat is touching herself

Shown for 4- to 7-year-olds in English, Dutch, Spanish, ...
At the same time: correct pronoun/reflexive production
(according to corpus studies, elicitation tasks)

Explanations in the literature:

- Delay of Principle B acquisition (cf. Government & Binding)
- No bi-directional optimization (cf. Optimality Theory)

Alternative account:

Task effects and differences in processing cost

Experiments require more than just comprehension

Interpretation:

Who is meant by “her” or “herself”?

- Reflexive “herself” → Referent *within* the same phrase
Low impact on memory / attention
- Pronoun “her” → Referent *outside* the phrase
High impact on memory / attention

Additional Task:

- Store interpretation
- Compare spoken sentence to visual referents
- Select appropriate response (pointing, saying “yes” / “no”)
- Execute response

Grammatical Gender

Marked in Dutch pronouns, not reflexives

Masculine “hem” → Frequent, default choice

Feminine “haar” → Less frequent, explicitly specifies sex/gender

Experiment

Pointing task

- 36 Dutch 5-year-olds (15 girls)
- 24 pointing task trials (6 masculine pronoun, 6 feminine pronoun; 12 matched reflexive trials)

In which picture is Miss Cat touching {her|herself}?

Additional test: Eye tracking (before pointing task)

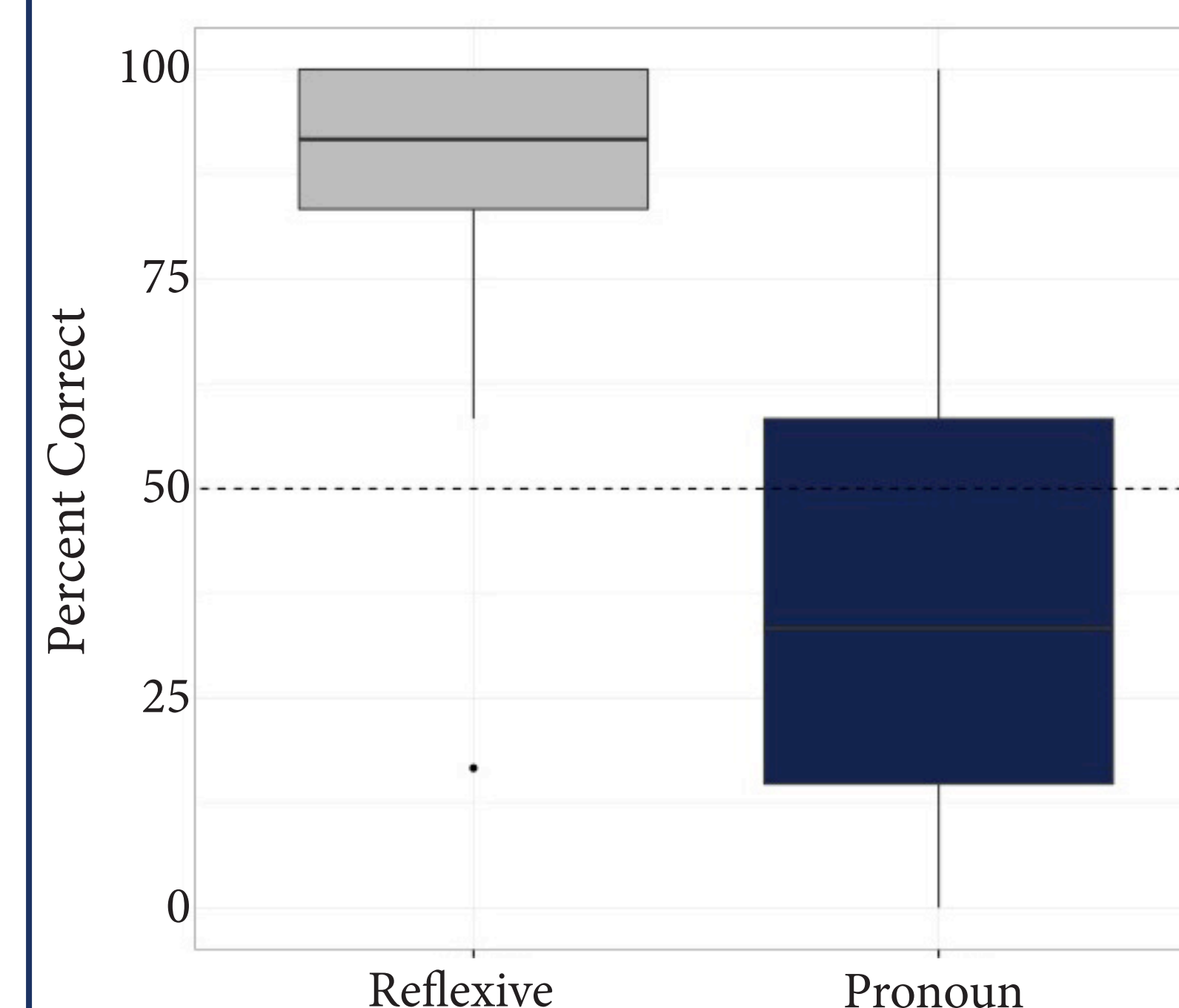
- 48 trials with the same sentences and images
- Task: Watch television

Conclusion

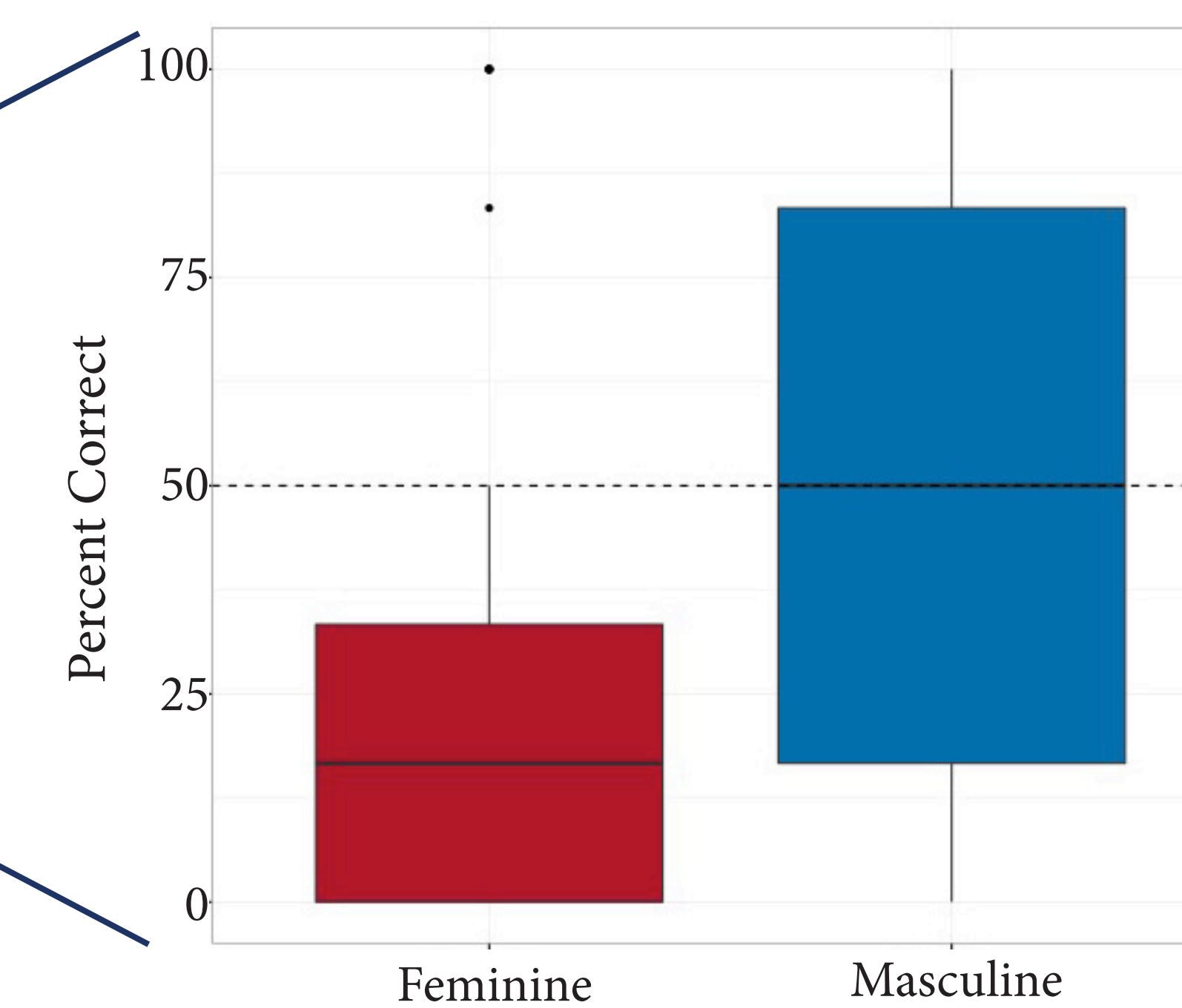
- Different tasks tap into different levels of linguistic processing
→ Explanation for several cross-linguistic findings?
- 5-year-olds' pronoun interpretation is correct on-line
but susceptible to disruptions off-line
- Reflexive bias: Repair strategy?
No evidence for reflexive interpretation on-line
- Pronoun gender interacts with task demands

Results

Reflexives vs Pronouns



Pronouns: Feminine vs Masculine



Eye tracking results

Measure:

- Fixations on Target (Miss Cow) -
- Fixations on other toy (Miss Cat)
- within 300 to 800 ms after pronoun onset
- comparing pronoun trials to neutral trials

“Miss Cat is touching **her**.”
“Look! **How nice!**”

12.95 % vs 3.21 %

Fixations on the correct referent
→ Replication of previous results for Dutch 4-year-olds

Correct choices in the pointing task

- 85.6 % Reflexive (above chance level with $p < .001$)
- 39.3 % Pronoun (at chance level)
→ Significantly different ($p < .001$)
- 26.6 % Feminine Pronoun (below chance level with $p < .01$)
- 50.7 % Masculine Pronoun (at chance level)
→ Significantly different ($p < .001$)

Incidental finding

Reflexive bias: Children choose the reflexive interpretation systematically, ie. > 80 % of trials (observed in 26 of 36 children)

→ Not chance performance, “guessing”

Note: Girls and boys did not differ ($p = .6$)

References

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