

Gender and task effects in pronoun interpretation

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Pronoun interpretation

Asymmetric acquisition of pronouns

- Correct production from age 4 (de Villiers et al., 2006)
- Delay in comprehension up to age 6 (as reviewed by Conroy et al., 2009)
- In comparison: reflexives produced and comprehended correctly at the same time, that is age 4

Response-based tasks, the usual means to tap into comprehension, **imply**:

- (1) Understanding the instructions and the task
 - (2) Remembering the task
 - (3) Attending to the stimuli
 - (4) Comprehension of the linguistic input
 - (5) Comparing linguistic stimulus to visual representation
 - (6) Generating and executing the correct response
- Very demanding on the child's **limited cognitive resources**

Eye-tracking:

- No additional explicit task necessary
- Continuous **on-line** responses during comprehension
- **less demanding** on cognitive resources

Grammatical gender:

- Encoded in pronouns, but not reflexives, in Dutch
- **Masculine**: generic use, more frequent, **unmarked**
- **Feminine**: more salient, explicitly refers to gender, **marked**
- **Systematically used** as cue in on-line pronoun interpretation at **age 5** (Arnold et al., 2007)



Mevrouw Poes is haar aan het aankleden.
Op welk plaatje is mevrouw Poes haar aan het aankleden?
Miss cat is her dressing.
In which picture is miss cat her dressing?

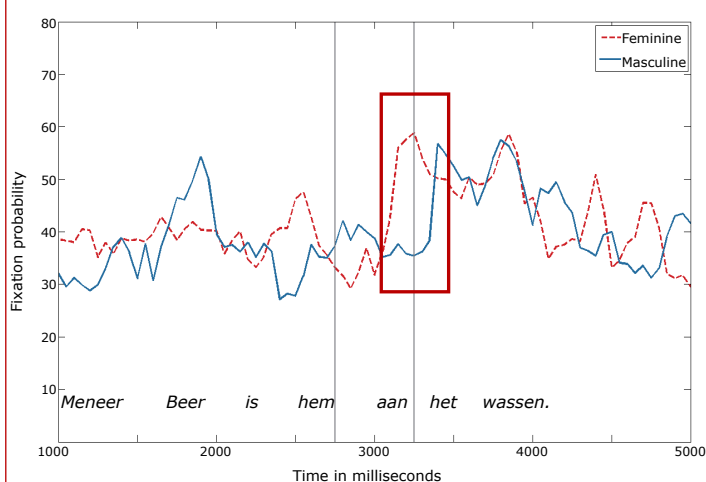
Task effect

- Off-line: replication of previous findings, **chance performance** in pronoun trials strategies high accuracy in reflexive trials from age 4
- On-line: **increased fixations** on the correct referent from age 4

Conclusion

Strong task effect

No severe delay in pronoun comprehension (Bergmann, et al., 2009)

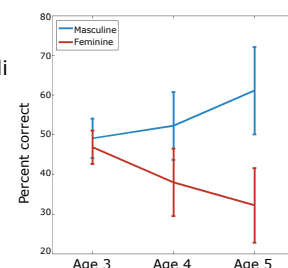


Experiment

Presentation of identical stimuli during eye-tracking and in a picture selection task.

Subjects:

- 22 children age 3 (14 ♀)
- 16 children age 4 (8 ♀)
- 16 children age 5 (7 ♀)



Accuracy in the picture selection task across age groups divided by gender

Gender effect

- Distinct treatment of pronouns according to gender (age 5)
- Off-line: higher accuracy for masculine**
- On-line: advantage for feminine**, 200 ms earlier
- Note: The effect is independent of the child's own sex.

Cascading processes

Processing of pronouns in several stages (Sturt, 2003)

Stage 1 (on-line, at encounter of a pronoun)

Computation of **potential referents**
Facilitated by **salient** pronoun (feminine)

Stage 2 (off-line, at end of the sentence)

Selection of best candidate as referent
Storage of sentence
Advantage for **unmarked** pronoun (masculine)
due to less associated processing and storage cost

→ **Both tasks tap into different stages**

Conclusion

- Gender systematically guides search for potential referents in pronoun comprehension
- Pronoun interpretation takes place in several stages, which present differently in on-line and off-line measurements
- These stages are acquired in an incremental manner and can be picked up by the appropriate measurement
- No severe delay in pronoun comprehension, first processing stages in place at the age of 4

References:

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