

# Gender-neutral pronouns increase reading time during anaphor resolution: Evidence from Swedish

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## Conclusions

This study investigated how the Swedish gender-neutral pronoun 'hen' affects anaphor resolution. Results indicate that processing 'hen' causes a slowing in reading in the pronoun spillover region, which may indicate a revised gender inference. Reading 'hen' differs from reading pronouns incongruent with the noun gender (The hairdresser... He) in it not leading to longer first-pass fixations of the pronoun or longer refixations of earlier parts of the sentence.

## Background & Hypotheses

- A generic gender neutral pronoun 'hen' was introduced to the Swedish language in 2015.
- When nouns containing gender information are followed by a pronoun with incongruent gender, it leads to a higher processing cost of the word, with saccades back to the noun, and slowing reading of regions following the pronoun [e.g. 1, 2].
- This processing cost is believed to occur because the gender information included in the mental model needs to be revisited after encountering incongruent information [3].

1. The first-pass fixation time will be longer for 'hen' than for gendered pronouns
2. The dwell time on the pronoun spillover region will be longer after reading 'hen' than for gendered pronouns
3. There will be more refixations of the noun region after reading 'hen' than for gendered pronouns.

## Method

- 109 undergraduates participated
- Reading behavior was recorded with an eye-tracker (SMI iView X Hi-Speed).
- Participants read 48 sentence pairs with a noun at the start of the first sentence and a pronoun at the start of the second sentence (see illustration to the right).
- Half of the nouns were job titles associated with a gender (e.g. hairdresser), the other half were not associated with a gender (e.g. colleague). Half of the pronouns were consistent with the gender associated with the role noun (e.g. hairdresser... She), and the other half were the gender-neutral pronoun 'hen'.

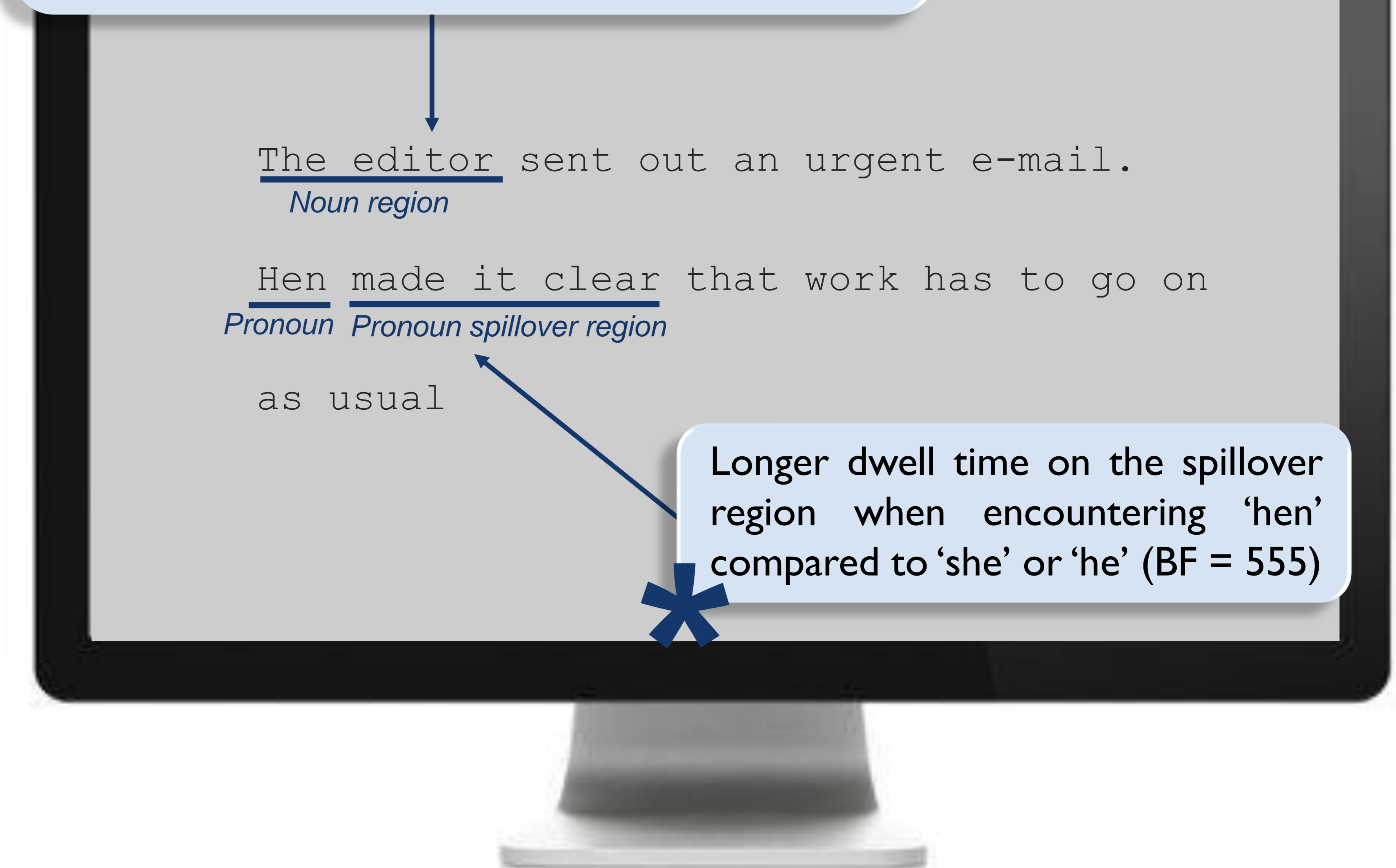
## Results

1. No evidence was found for longer first-pass fixations on 'hen' compared to gendered pronouns (BF = 0.43)
2. Evidence was found for a longer dwell time on the words following 'hen' compared to words following a gendered pronoun (BF = 555). See illustration to the right.
3. No evidence was found for longer refixations of the noun region after encountering 'hen' in comparison with gendered pronouns (BF = 1.09).

## References

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- [2] Reali, C., Esaulova, Y., & Von Stockhausen, L. (2015). Isolating stereotypical gender in a grammatical gender language: Evidence from eye movements. *Applied Psycholinguistics*, 36(4), 977–1006.
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- \* Shorter dwell time on pronoun spillover region after neutral role noun compared to nouns associated with a gender (e.g. hairdresser, carpenter), BF = 33.



Vetenskapsrådet

Preregistered study OSF



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