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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 in reading, with saccades back to the noun, and slowing reading of regions following the pronoun [e.g. 1, 2].
- Opponents of the implementation of *hen* have argued that it suffers from either a male or female bias [3].
- We investigated the processing cost of *hen*, and whether this cost was different in combination with female-typed nouns compared to male-typed nouns.

H1. There will be no difference in processing cost* between a female-typed role noun and a male-typed role noun following *hen*

H2. The processing cost* will be longer when *hen* follows a definitionally gendered noun (e.g. queen) compared to a stereotypically gendered noun (e.g. hairdresser)

H3. The processing cost* will be greater when encountering *hen* than when encountering gendered pronouns

* We define a greater processing cost as characterized by three reading behaviors: longer fixation of the pronoun region, longer dwell time in the spillover region, and more refixations of the noun region.

Method

- 120 undergraduate participants
- 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).
- The nouns were role nouns associated with being women or men (e.g. hairdresser). Half of the pronouns were consistent with the gender associated with the role noun (e.g. hairdresser... She), and the other half was the gender-neutral pronoun *hen*.
- We used Bayesian mixed-effect models to assess the effect of gender of pronoun on the different outcome variables, controlling for amongst others previous experience with *hen* and opinion of *hen*.

[1] Kennison, S. M., & Trofe, J. L. (2003). Comprehending pronouns: A role for word-specific gender stereotype information. *Journal of Psycholinguistic Research*, 32(3), 355–378.

[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.

[3] Vergoossen, H. P., Renström, E. A., Lindqvist, A., Gustafsson Sendén, M. (Under review). Contemporary arguments against a gender-neutral pronoun in Swedish.

Swedish Gender-Neutral Pronoun Has No Gender Bias in Reading

Results

H1.

No effect of gender of role noun on processing cost of *hen* on the regions of interest (BF = 0.4, 0.29, 0.78) ✓

H2.

No difference between definitionally gendered nouns compared to stereotypically gendered nouns in the regions of interest (BF = 1.02, 0.29, 0.48) ✗

The queen sent out an urgent e-mail.
Noun region

Hen made it clear that work has to go
Pronoun Pronoun spillover region

on as usual

H3.

Longer dwell time (CRI 21-62 ms) in pronoun spillover region when encountering *hen* compared to 'he' or 'she' (BF = 310.000, though not in the other regions: BF = 0.79, 0.74) ✓

N.B. Actual stimuli were in Swedish

Conclusions

- No difference in processing cost when encountering the Swedish gender-neutral pronoun *hen* after a female-typed noun vs a male-typed noun, indicating that *hen* does not suffer from a male or female bias in reading
- No difference in processing cost found when encountering *hen* after a noun containing definitional gender (e.g. queen) compared to stereotypical gender (e.g. carpenter)
- Reading *hen* leads to a greater processing in the pronoun spillover region