Reading standard and nonstandard parallel forms in Estonian

Annika Kängsepp, Maarja-Liisa Pilvik, *Kaidi Lõo, Külli Habicht, Liina Lindström

Institute of Estonian and General Linguistics, University of Tartu

*contact: kaidi.loo@ut.ee

Background

Estonian has a rich inflectional system in which word forms can be created via agglutination, fusion, or a combination of both. As a result, parallel inflected forms, i.e., multiple forms marking the same grammatical case, are very common (e.g., Viht and Habicht 2019). Corpus studies have indicated that alongside standard parallel forms (e.g., *vaidlusi* vs. *vaidluseid* 'argument' PL.PART), also nonstandard variants i.e., forms that diverge from the prescribed norm (e.g., *imet* vs. *ime* 'miracle' SG.PART, where *imet* is the nonstandard form) are widespread (see e.g., Siiman 2019; Kängsepp 2024; Aigro *et al.* 2026). Despite their frequency, little is known about how such morphological variation is processed in real time. Moreover, the role of individual differences in morphological processing remains underexplored. To address this, we conducted an eye-tracking sentence reading study examining the effects of frequency, normative status and individual differences on Estonian morphological processing.

Method

Eighty-four native speakers of Estonian (47 female, 34 male, 2 non-binary, 1 preferred not to say; 18-59 years old, mean 35 years) participated in the experiment. The participants first completed a demographic questionnaire and a Big Five personality inventory which was followed by the reading task. Participants were instructed to silently read sentences one by one at their own pace, while their eye movements were recorded with an Eyelink Duo eye tracker (SR Research). Two experimental lists were constructed such that each participant saw only one version of each sentence, with the versions differing only in the inflected form. Each participant read a total of 160 sentences (108 experimental, 52 filler sentences). The entire procedure lasted about 60 minutes.

Analysis and Results

The data was analyzed using generalized additive regression. Preliminary analyses indicated that form frequency, but not normative status (standard vs. non-standard), affects reading during the first-pass reading. Participants were, however, sensitive to the nonstandard status of word forms during later stages of reading: nonstandard forms were read longer in total. Regarding individual differences, older female participants with a more open-minded personality read faster than younger male participants with less open-minded personality. Similar pattern was observed in reading both standard and non-standard forms, and only at later stages of reading.

Discussion and Conclusions

The current study suggests a difference between early and later readings. Early reading is influenced by frequency, while sensitivity to prescriptive norms emerges during later and possibly more reflective reading stages. Overall, the findings support usage-based accounts of morphology, while also suggesting the existence of normative knowledge in real-time reading. Our findings highlight the importance of combining corpus evidence with real-time experimental methods to gain additional insights on morphological variation.

References

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