

A study of the timing and quality of diphthong components in spontaneous Estonian

Pärtel Lippus & Eva Liina Asu
University of Tartu

The prime motivation behind this research is the fact that Estonian diphthongs - despite there being 36 of them - have received undeservedly little attention. Of particular interest is the interaction of diphthong components and quantity, as the duration of diphthong components has been used as a basis of the Estonian quantity theory (Eek & Meister 2003). In the Estonian quantity system, diphthongs are equivalent to long vowels and can occur in both long (Q2) and overlong (Q3) quantity degrees. Previous studies have been inconclusive as to whether the lengthening in Q3 involves just one diphthong component, as claimed by Eek (2008), or both components, as shown in Lehiste (1970), and on the basis of Kihnu dialect data in Asu et al. (2012), and Türk et al. (2016).

Using spontaneous speech data from 119 speakers the present study focuses on the timing as well as the quality of diphthong components in 8 diphthongs, seeking answers to a number of research questions: What is the duration of diphthongs as compared to long monophthongs? How do the formant trajectories of diphthongs compare to those of long monophthongs? What is the timing of diphthong components in Q2 and Q3? What is the quality of diphthong components as compared to the corresponding monophthongs?

The results of the study show that there is no significant durational difference between long monophthongs and diphthongs, and that long monophthongs are not diphthongized. It is found that both diphthong components are lengthened in Q3, but the lengthening is more prominent in the second component. A significant effect of vowel intrinsic properties, however, implies that a more systematic further study is needed.

References

- Asu, E. L., Lippus, P., Niit, E., & Türk, H. (2012). The acoustic characteristics of monophthongs and diphthongs in the Kihnu variety of Estonian. *Linguistica Uralica*, 48(3), 161–170. <https://doi.org/10.3176/lu.2012.3.01>
- Eek, A. (2008). *Eesti keele foneetika*. Tallinn: Tallinna Tehnikaülikooli Kirjastus.
- Eek, A., & Meister, E. (2003). Domain of the Estonian quantity degrees: Evidence from words containing diphthongs. In M. J. Solé, D. Recasens, & J. Romero (Eds.), *Proceedings of the 15th International Congress of Phonetic Sciences, Barcelona, Spain, 3-9 August 2003* (Vol. 2, pp. 2039–2042). Barcelona.
- Lehiste, I. (1970). Diphthongs versus vowel sequences in Estonian. In B. Hála, M. Romportl, & P. Janota (Eds.), *Proceedings of the Sixth International Congress of Phonetic Sciences, September 7-13, 1967, Prague* (pp. 539–544). Prague: Academica.
- Türk, H., Asu, E. L., Lippus, P., & Niit, E. (2016). Diftongidest ja triftongidest eesti keeles Kihnu vokaalisüsteemi näitel. *Keel ja Kirjandus*, 59(1), 1–12.