

Prosodic prominence within noun phrases in Finno-Ugric languages

Names

Affiliations

This comparative study investigates the prosodic marking of focus in three languages of the Finno-Ugric language family, Finnish, Estonian and Hungarian. These share many prosodic characteristics (e.g., word-initial stress and quantity oppositions, see e.g., Karpinski et al., 2020), but differ at their phrase-level prosody (e.g., tone inventory, prosodic focus expression). While Finnish shows a raising of the H phrase tone in sentence-initial, -medial and -final focus occurrences (Arnhold, 2016), Estonian shows a pitch peak on the focused word sentence-initially or –finally, yet a local f₀-rise to the peak only sentence-initially (Ots, 2017). Hungarian typically shows a falling f₀-contour on the focused word (Genzel et al., 2015; Langer & Kügler, 2022; Mády & Kleber, 2010). In terms of prosodic typology, Finnish has been categorized as a phrase-language (Arnhold, 2013), Estonian as an intonation language (Asu, 2004), and Hungarian’s prosodic system is still debated. Thus, we aim to contribute to the typology of focus prosody by comparing the expression of prosodic focus in these Finno-Ugric languages.

For this, the prosody of focus was investigated in complex noun phrases (NP; e.g., ‘cheerful famous knights’) in a speech production experiment. The speech material was varied such that the focus was either on the first adjective (e.g., ‘cheerful’), on the second one (e.g., ‘famous’), on the noun (e.g., ‘knights’) or on the whole NP (e.g., ‘cheerful famous knights’) by controlling the contexts in which these complex NPs were uttered. 20 speakers from each language were recorded in Helsinki, Tartu and Budapest reading ten different items in four different contexts (20 x 10 x 4 = 800 sentences per language) resulting in 2400 sentences. For each word in the NPs, ten equidistant f₀ points, the lowest and highest f₀ (f₀-max and f₀-min respectively), and duration were extracted with the help of Praat (Boersma & Weening, 2023). The ten equidistant measurements points from the f₀ contours were fitted with Generalized Additive Mixed Models (GAMM; Wood 2017) in order to calculate the mean f₀ trajectories for each focus condition and to detect the windows of significant differences between them (Figures 1-3).

Preliminary analysis indicates striking similarities in the phrasal prosody of these three languages. Namely, for all languages the data shows an identical initial f₀-peak across the focus conditions, a subsequent downstep pattern, and a focal, but reduced f₀-peak on later content words. The languages differ in that Finnish shows (expected) post-focal compression, Estonian and Hungarian show (expected) post-focal deaccentuation.

The similarities of prosodic focus within the complex NPs are partly unexpected compared to previous findings (see e.g., Arnhold, 2016, Ots, 2017), and add a new pattern of highlighting focus within NPs. According to Krahmer and Swerts (2001), Germanic languages show focal f₀-raising on the focused word while Romance languages show accentuation of all words within an NP. The Finno-Ugric languages show additionally that the initial word bears the highest prominence independent of focus. This similar left-edge marking might be interpreted as an areal feature of the Eastern European languages, given their many similarities in prosodic features (see Karpinski et al., 2020). At the same time, the Finno-Ugric languages show additional, focal prominence later in the NP, which is reduced but still distinct. These findings suggest the need to revise and expand the focus typology and suggest a hybrid classification of Hungarian within the prosodic typology, encompassing both intonation language and phrase language properties.

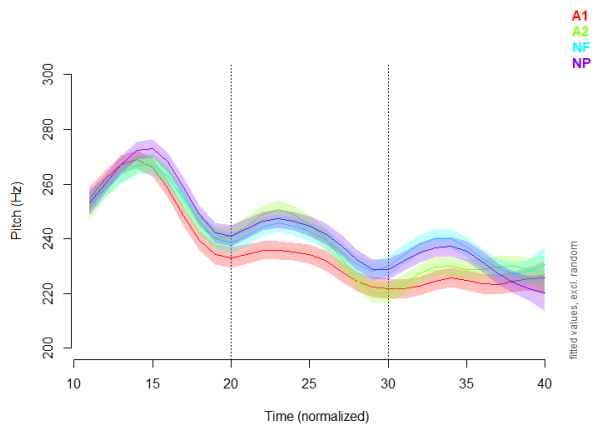


Figure 1. GAMM of four mean-f₀ trajectories (in Hertz) per focus in Estonian NP.

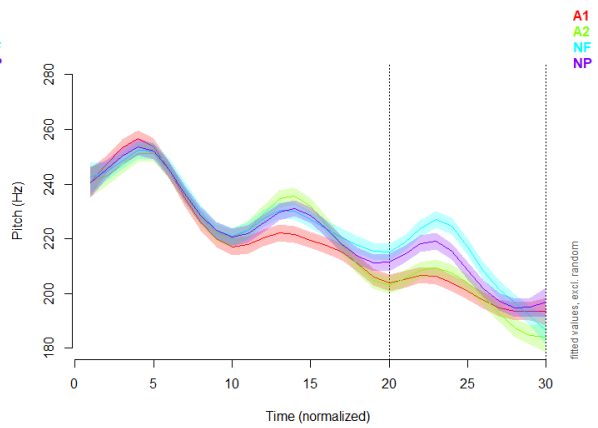


Figure 2. GAMM of four mean-f₀ trajectories (in Hertz) per focus in Finnish NP.

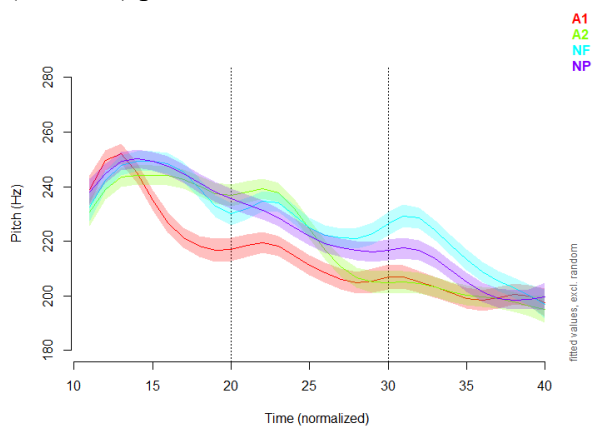


Figure 3. GAMM of four mean-f₀ trajectories (in Hertz) per focus in Hungarian NP.

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