Effects of morpho-phonological consonant deletion on adjacent vowels in three Meru dialects, Kenya

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The paper describes the impact of consonant deletion on the surrounding vowels in three related dialects in Kenya. More specifically, it investigates the deletion of the voiced fricative /β/ in Imenti and Tiania, compared to Chuka, a more conservative dialect of the dialect continuum where there is no such consonant deletion.

Since Bantu languages avoid sequences of two (or more) full vowels or hiatus, these languages usually develop so-called repair strategies (Mtenje-Mkochi, 2018; Kanana, 2015). The main analysis of this paper discusses three such strategies after fricative deletion described for Imenti: (1.) vowel merger, (2.) V_1 lengthening after deletion stem-medially and (3.) V_1 shortening after stem-initial deletion. Tiania has not been described before and the investigation will provide insight into its position on the dialect continuum, depending on whether there is a consonant deletion or not.

Audio data from 75 multilingual speakers was recorded from the three dialects. The vowel duration of the two target vowels and the first two formants have been analysed in this paper.

The first result was that the deletion of /β/ occured in Imenti as expected, as well as in Tiania, positioning Tiania as a more innovative dialect, closer to Imenti when compared to Chuka. Regarding the duration of V_1, the results showed that it was longer in the merger condition, and no significant effect of dialect could be found for stem-initial or stem-medial deletion. The lengthening of V_1, as expected for deletion in stem-medial position, showed a lot of variability in the category. The same is true for stem-initial deletion, where there are some words with shorter V_1 after deletion, but the differences are quite small.

The formant analysis could illustrate that the variation in duration may result from changes in the vowel quality after deletion: the vowel raising in /kaβɛβɔ|kapiɔ/ shows the vowel height assimilation that is part of the changes expected for stem-medial deletion. Such a change could account for the vowels not being significantly longer after deletion, as /i/ is intrinsically shorter than /ɛ/, with lower vowels being intrinsically longer. The situation in stem-initial deletion, where V_1 is longer than in Chuka for some tokens, could also be explained by looking at the formants. Formant values for stem-initial deletion indicate that V_1 in /ko(β)anda/and /ŋko(β)anda/ is lowered after deletion, while in /ko(β)iða/ it is raised, corresponding to the longer duration of V_1 in the former and to the shorter in the latter words.

Formant analysis showed additional qualitative differences in the vowels after consonant deletion, with the quality possibly influencing the duration. This sound change that arises in the Meru dialects of Tiania and Imenti serves as a medium for determining the position of Tiania as more innovative than Chuka. As found by Cunha et al. (2023), this is likely due to more interaction between speakers of Imenti and Tiania and a greater occurrence of accommodation in these interactions.