Positional weakness versus lack of prominence: Forest Nenets vowel alternations

Alexandra Shikunova (HSE University, Moscow)

Background Three kinds of phonological processes are distinguished in Strict CV (Lowenstamm 1996, Scheer 2004): (a) exchanges of melodic primes (assimilation/dissimilation), (b) melodic primes affected by positional influence (fortition/lenition), and (c) suprasegmental processes (e.g. stress/tone). Sometimes, the effects of different kinds of processes overlap and are difficult to disentangle. I present a case study from Forest Nenets (<Samoyedic<Uralic), where quality and quantity of vowels change according to position as well as prosodic prominence. An attempt to isolate positional effects leaves one with an unnatural pattern prohibited by the established generalization that medial empty nuclei cannot be positionally stronger than the final ones (Balogné Bérces & Ulfsbjorninn 2023).

Data Forest Nenets (FN) is a minority Uralic language of Russia mainly spoken in Yamalo-Nenets okrug (Northwestern Siberia). The data comes from the author's fieldwork, as well as from descriptions by Sammallahti (1974) and Salminen (2007). FN vowel inventory is different in stressed (Table 1) and unstressed positions (Table 2). Stress falls on odd non-final syllables.

(1)

ĭ i	ŭ u	
ĕ e		ŏ o
æ̆ æ	ă a	

(2)

∘	i	u
	æ	a

The length distinction is only present in stressed syllables; in the unstressed ones, it is neutralized. The possible structures of stressed syllables are CV, CVV, CVC and CVVC. The mid vowels /e, o/ are reduced to the high /i, u/ when unstressed (3–4).

(3) *ˈp′en°tˌλ′emæ* [p′en°tλ′emæ̆] 'hit.EVID' (4) *ˈwed′aʔˌkoj°* [wed′ă^{h}koj°] 'dog.P.1SG'
ˈp′en°tλ′iʔ [p′en°tλ′ĭʔ] 'hit.CN' *ˈwed′aʔku* [wed′ă^{h}kŭ] 'dog'

Short mid vowels /ŏ, ĕ/ are only found in monosyllabic forms, where speakers pronounce them in variation with /ŭ, ĭ/ respectively. In a polysyllabic context, /ŏ, ĕ/ appear as long /o, e/ (5).

(5) *tŏ* [tŭ ∼ tŏ] – *to-n°* [ton] 'lake' – 'lake-DAT.SG'
n′ĕ [n′ĭ ∼ n′ĕ] – *n′e-ta* [n′etă] 'woman' – 'woman-P.3SG'

In monosyllabics, vowels are short across the board, regardless of their underlying quantity (6).

(6) *wiŋ* [wĭŋ] – *wiŋ-kat°* [wiŋkat] 'tundra' – 'tundra-ABL.SG'

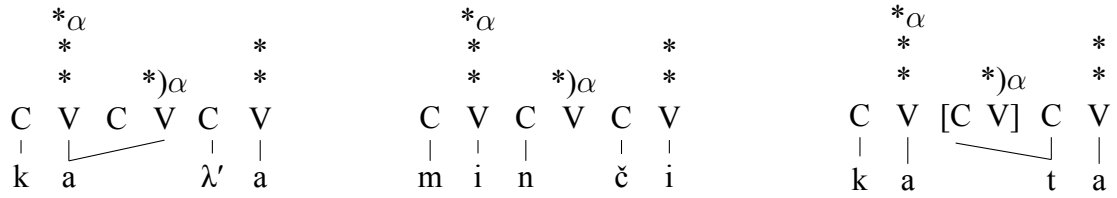
Problem Unstressed syllables in FN lose both the length and the high-mid quality contrast, whereas the vowels in monosyllabics are neutralized by length but not by quality. I aim to derive this pattern by decomposing it into the effect of positional licensing on one hand and prosodic (de)lengthening on the other.

Analysis I propose that stress in FN adds quantity to the stressed syllable, allowing a stressed vowel to be long. One other piece of evidence for this is the compensatory gemination that targets stressed CV syllables (*ˈwăta* [wătta] 'hook'). Vowels of "neutral" length in unstressed syllables are phonologically short. Metrical bolstering is guided by Incorporation (Faust & Ulfsbjorninn 2018), which lets the stressed vowel consume the prominence projections of the empty nuclei that follow it. Since CVC/CVVC syllables already have post-coda empty nuclei to incorporate, they do not receive any kind of lengthening. Long vowels are licensed by Incorporation: an empty slot can only be spread into if it is incorporated.

In example (7), the long vowel of a stressed CVV is preserved thanks to Incorporation. In example (8), the post-coda empty nucleus in a stressed CVC syllable is incorporated. Example (9) illustrates compensatory gemination after a stressed CV.

I assume that the loss of quality contrast proceeds via deletion of contrastive privative features – elements of Element Theory (Kaye, Lowenstamm & Vergnaud 1985); see example (10)

(7) CVV: *'kaλ'a* ‘fish’ (8) CVC: *'mĭn'či* ‘stomach’ (9) CV: *'kăta* [kăttă] ‘nail’

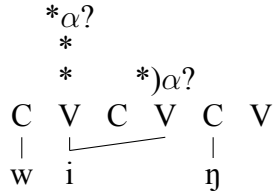


and Enguehard (2018) for a similar proposal for Russian). Since quality preservation is tied to stress but not to length, I assume that in order to host two elements, a vowel must project to Level 3 (L3), as every stressed vowel in FN does. In polysyllabic words, projection to L3 goes with length preservation, but monosyllabics are able to reach L3 and keep the mid vowels even while being short, since stress is obligatory.

(10)

/e/	|AI|	|I|
/i/	|II|	
/o/	|AU|	|U|
/u/	|UU|	

(11) CVVC#: *wiŋ* [wĭŋ] ‘tundra’



Now consider length in monosyllabics. The effect of stress – additional quantity – fails to materialize, meaning that final empty nuclei (FENs) in FN are metrically weak: their projection cannot be incorporated in order to keep the length. However, this is not enough to fully capture monosyllabic shortening, since CVVC syllables are shortened as well (6). CVVC, as shown in example (11), contains three syllabic units, so even if the post-coda FEN is not incorporated, there is another projection coming from the vowel. Final CVVCs are not expected to shorten.

Metrical weakness of FENs does not account for monosyllabic shortening, so FENs must be positonally weak and unable to license long vowels. This way, final syllables would never have long vowels, which is empirically accurate. However, it goes against the implicational generalization that FENs can license if medial empty nuclei (MENs) can, i.e. if CVVC syllables occur word-internally, then they are allowed word-finally as well (Balogné Bérces & Ulfsbjorninn 2023). If the lack of final long vowels in FN is attributed to the positional weakness of FENs, then this implication is broken, because CVVCs do occur word-internally (12).

(12) *kand'ana* [kand′ănă] ‘hunter’, *lapka* [lapkă] ‘store’

The pattern of vowel length and quality neutralization can only be captured if empty FENs are both metrically and positionally weak, while MENs are strong in both of those regards. Positional weakness of FENs alone does not do the job, since the patterns of quality and quantity neutralization are distinct: mid quality is protected by metrical prominence but not length.

Implications Forest Nenets is a rare example of a language where the length contrast is restricted to the stressed syllables while also being exposed to positional effects. Similar patterns, where length is neutralized in unstressed syllables, are found in other understudied Uralic languages like Forest Enets and Votic (Bakró-Nagy, Laakso & Skribnik 2022), which are potential targets for comparison to FN. It remains to be seen, how often the CVVC.CV ⇒ CVVC# implication is broken in languages where length contrast only exists under stress.

References ❖ Bakró-Nagy, Marianne, Johanna Laakso & Elena Skribnik (eds.). 2022. *The Oxford Guide to the Uralic Languages*. Oxford: Oxford University Press. ❖ Balogné Bérces, Katalin & Shanti Ulfsbjorninn. 2023. Prevocalic Tenseness in English, Binarity and the Typology of Long Vowel Distributions. In Florian Breit, Yuko Yoshida & Connor Youngberg (eds.), *Elements, Government and Licensing: Developments in phonology*, 77–88. London: UCL Press. ❖ Enguehard, Guillaume. 2018. Strict CV without government. *Acta Linguistica Academica* 65(1). 29–45. ❖ Faust, Noam & Shanti Ulfsbjorninn. 2018. Arabic stress in strict CV, with no moras, no syllables,

no feet and no extrametricality. *The Linguistic Review* 35(4). 561–600. ❖ Kaye, Jonathan, Jean Lowenstamm & Jean-Roger Vergnaud. 1985. The internal structure of phonological elements: a theory of charm and government. *Phonology* 2(1). 305–328. ❖ Lowenstamm, Jean. 1996. CV as the only syllable type. In Jacques Durand & Bernard Laks (eds.), *Current trends in phonology, models and methods*, vol. 2, 419–443. Salford: European Studies Research Institute. ❖ Salminen, Tapani. 2007. Notes on Forest Nenets phonology. In Jussi Ylikoski & Ante Aikio (eds.), *Sámit, sánit, sátnehámit. riepmočála pekka sammallahtii miessemánu 21. beaivve 2007*, vol. 253, 349–372. Helsinki: Suomalais-Ugrilainen Seura. ❖ Sammallahti, Pekka. 1974. *Material from Forest Nenets*. Helsinki: Castrenianum. ❖ Scheer, Tobias. 2004. *A lateral theory of phonology: What is CVCV, and why should it be?* Vol. 1. Berlin: Walter de Gruyter.