Footing in North Saami

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Most analysts of foot structure begins with the distribution of stress marks in transcriptions, where stress marks indicate something audible. Deep analysis is necessary to find the correct foot structure in Arabic *katábit*, but the analysis starts with the fact that the penult is phonetically stressed. In North Saami, the case for foot structure cannot take stress distribution as a starting point, since position in the foot has no direct phonetic interpretation. There is something that one might think, at first glance, constitutes phonetic "stress", namely a pitch peak on the first and last syllables of the word, but all other aspects of the language indicate that these pitch peaks are orthogonal to foot position, and occur even on exceptional syllables which are unfooted.

Despite lack of alternating stresses to directly identify feet, feet can still be detected through analysis of phonological phenomena senditive to whether the syllable in question is odd-numbered, versus even-numbered. I show that North Saami iteratively constructs bisyllabic feet beginning at the right edge of the root. The analysis is carried out within the framework of Formal Phonology, where phonological computations cannot perform division or multiplication, and can only approximate such a division by a repeated grouping of syllables into a foot.

The core of the talk is an empirical investigation of the facts which motivate a partitioning of phonological properties into those of even-numbered syllables versus those of odd-numbered ones. For instance a linking vowel is inserted between a consonant and a possessive suffix, which is [ea] in even-numbered syllables ([dŭoddɑr-**ea**-met] 'our tundra nom. sg', [mujhtɑlussan-**ea**-met] 'our story essive') but [ɑ] in odd syllables ([iʔmaašinn-**ɑ**-met] 'our miracle comit.sg.', [mujhtɑluss-**ɑ**-met] 'our story nom.sg.'). Final consonant clusters created by combining a consonant-final root with the essive suffix /n/ are modified by vowel epenthesis, where [i] is inserted in an odd-numbered syllable ([čaallim-**i**n] 'writing', [aadehɑllam-**i**n] 'understanding') but [ɑ] in a even-numbered syllable ([mujhtɑluss-**ɑ**n] 'story', [bissomeahtu-mɑǰǰ-**ɑ**n] 'unstable one.dim'). The 2pl possessive suffix likewise alternates between [Vðet] and [Vttet], depending on preceding syllable count: it has a geminate if the geminate is shared between an odd and an even syllable ([lanjɑjn-ea**tt**et] '2pl's room com.sg', [iʔmaš-ea**tt**et] '2pl's aunt.dim nom.sg', [iʔmašijttaas-ea**tt**et] '2pl's aunt.dim ill. pl'), but a singleton consonant if the consonant comes between an even and an odd syllable ([lanjɑjdas-a**ð**et] '2pl's room ill. pl',[mujhtɑluss-a**ð**et] '2pl's story nom. sg', [mujhtɑlusɑjdas-a**ð**et] '2pl's story ill. pl'). Syllable parity also affects the morphophonological process of gradation which lengthens a consonant at the end of the stem in certain cases such as the essive (/mearɑ-n/ → [mea**rr**ɑn] 'sea ess.', /vinhtaanɑǰ-ɑn/ → [vinhtaanɑ**ǰǰ**ɑn] 'brambling ess.'), but lengthening is blocked in the onset of an odd syllable ([gɑʔnjaa**l**-in] 'tear ess.', [bɑðošgaattˢe**b**-in] 'bird sp. ess.').

These patterns results from assigning bisyllabic feet to words, and expressing these generalizations in terms of conditions on foot-initial vs. foot-final syllables, where foot-final syllables may not be bimoraic. Many phonological phenomena that create bimoraic syllables are blocked from applying to a foot-final syllable, indicating an overarching structural limit on such syllables that usually transcends specific length-inducing rules. The language also has "iambic lengthening", which systematically overrides the ban on foot-final long syllables: short vowels like /ɑ/ lengthen [aa] in a foot-final syllable after a light syllable, seen in the acc. sg. alternation [dŭoddɑr-**ɑ**] 'tundra', [hillaarowssuh-**ɑ**] 'healthy fox', versus [mujhtɑlus-**aa**] 'story'). Foot-final lengthening is yet another possible rule that refers to foot structure, but atypically disregards the generally trochaic proclivities of the language.