

### Vowel deletion and stress in Tundra Nenets.


Tundra Nenets is a Samoyedic language of Uralic language family spoken in Arctic Russia and Northern Siberia. This research is based on the data collected during the field study of Western (Malozemelski) dialect of Tundra Nenets in 2003-2005.

In the report I will analyze some new data about the stress system of Tundra Nenets and try to integrate this with the analysis of some stress-sensitive processes such as vowel deletion.

The existing grammars of Tundra Nenets [Salminen (1997), Tereschenko (1965), Castrén (1854)] propose contradictory descriptions of the stress system.

Our data based on the statistic analysis suggest that there are two kinds of acoustic cues to stress. First, Tundra Nenets has word-initial lengthening. This cue seems to correspond quite well to what Salminen says about primary stress in Nenets (see below).

Second, there is another kind of accent that is manifested by rising pitch (Kavitskaya 2006). Pitch contour can be either lexically prelinked to one of the first two syllables (1a) or it can be assigned phrasally to the first two moras of the prosodic word (1b).

- (1)  a. jo n a r ‘thousand’; n’ar ma ‘red cheeked’ b. η u d a ‘hand’; n’ewxi ‘old’

The process of vowel deletion in Tundra Nenets has been commonly described as *vowel reduction*. In the most recent rule-based analysis of Salminen (1997) this process is accounted for by postulating a suspicious triplet of phonemes:<sup>1</sup> /a/, “reduced vowel” /ø/ and “schwa phoneme” /<sup>o</sup>/. “Schwa” is hardly ever pronounced at least in the studied dialect. /ø/ and /a/ differ in vowel length but the difference is relevant only in the first syllable: /ø/ is the only vowel that does not undergo word-initial lengthening. “Vowel reduction” is then described as a change {ø} → /<sup>o</sup>/.

- (2) a. {xørø} /xør<sup>o</sup>/ [xär] ‘knife’: poss. 2sg {xørø-rø} /xørør<sup>o</sup>/ [xärrar] ‘your knife’;  
b. {xarøtø} /xarø<sup>o</sup>/ [xarad] ‘house’: poss.3sg {xarøtø-ta} /xar<sup>o</sup>døda/ [xardada] ‘his house’

Examples in (2) demonstrate the way basic rules of “reduction” work. You first change /ø/ into /<sup>o</sup>/ word-finally and then “reduction” takes place in even syllables but not before syllables with /<sup>o</sup>/. This pattern is complicated by the presence of additional rules that favor “reduction” in {VCVø} sequences as well as in some suffixes. Because of these additional restrictions /ø/ and /<sup>o</sup>/ can not be treated as allophones of one phoneme.

(2b) also illustrates the interaction between consonant voicing and vowel reduction. Here {t} changes into /d/ postvocally. Assumption that the reduced vowel is not deleted in /xar<sup>o</sup>døda/ helps Salminen to account for opaque interactions at the surface level.

Salminen also assumes that “vowel reduction” is driven by the stress that falls on an initial syllable, syllables that precede a syllable with /<sup>o</sup>/ and non-final odd syllables. We see that this analysis is not logical because stress governs reduction while reduction defines stress. Furthermore, our data provide no evidence of secondary stress in Tundra Nenets.

Another important disadvantage of Salminen’s analysis is that he does not provide sufficient information on “schwa” phonetic realizations. We simply do not know when “reduction” results in vowel loss and when it does not.

I argue that the process known as *reduction* should in fact be analyzed as *deletion*. In other words “schwa” is never pronounced and all cases where it seems to be pronounced exhibit the application of some independent phonological constraints that ban deletion. The most important of these constraints is the sonority sequencing principle for codas (3). The deletion does not apply in (3b) because if it did we would get codas with rising sonority such as *sr*.

<sup>1</sup> In Salminen’s notation /y/ means palatalization after consonants and [j] after vowels, [j] after consonants is signified by /ÿ/, /q/ means glottal stop. Underlying forms in his notation are given in figure brackets {}, surface forms – in slashes //.

- (3) a. /ngerc<sup>o</sup>da<sup>o</sup>/ [ŋerc.da] ‘he scatters’; /sømp<sup>o</sup>lyangg/ [sämb.l’ang] ‘five’  
 b. /søs<sup>o</sup>rka<sup>o</sup>/ \*[säsr.ka] <sup>ok</sup>[sä.sar.ka] ‘he is stronger’;  
 /ngos<sup>o</sup>ltasy<sup>o</sup>/ \*[ŋosl.tas’] <sup>ok</sup>[ŋo.sal.tas’] ‘to turn the head upwards’

Additional evidence for this analysis comes from the phrasal pitch assignment patterns. Phrasal rising pitch is assigned to the first syllable if this syllable is closed (1b). However if we assume that the reduced vowel is not deleted it would be hard to explain why we get rising pitch through the first syllable in /nyew<sup>o</sup>xi<sup>o</sup>/ (1b) (the first syllable would not be closed then).

Finally the first consonant of a C[+voiced]<sup>o</sup>C[-voiced] sequence is sometimes devoiced. This assimilation process would be hard to analyze if we assumed that a vowel separates the assimilating consonants. The absence of consonant voicing in (4) is due to an additional process that is irrelevant here.

- (4) /pyed<sup>o</sup>kyecya/ [p’etk’ec’a] ‘saucer’; /pad<sup>o</sup>ta-/ [patta] ‘to adorn’

To capture the opaque interactions in (2b) I propose an analysis of vowel deletion within the framework of LPM-OT (Kiparsky 1998, 2000; see also Jacobs 2004 who shows that for the case of syncope in Latin only level-based OT provides a suitable approach). Within this analysis vowel deletion and consonant voicing simply apply at the separate levels. To capture opacity this analysis does not require modifying phonemic inventory. This analysis also does well with respect to pitch assignment. Phrasal pitch is clearly post-lexical so the syllables that become closed due to deletion can host the rising pitch. Similarly we can assume that optional consonant devoicing in clusters is post-lexical

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