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On identifying basic vowel distinctions in Tundra Nenets

The article is devoted to a phonemic analysis of those Tundra Nenets vowels deriving from Proto-Samoyed monophthongs. Special attention is paid to the identification of the schwa, previously either regarded as non-distinctive or confused with the reduced vowel. The reduced vowel phoneme is shown to surface as two functionally distinct entities, for which separate graphic notations are proposed. Both the schwa and the latter variant of the reduced vowel owe their existence to the so-called vowel reduction, which appears as an essentially automatic phonological process.

It is nowadays widely accepted that the short mid-low vowel in Tundra Nenets is to be interpreted as the single reduced vowel phoneme of the language instead of regarding it as the short counterpart of (a long) *a* (Janhunen 1975; cf. also Sammallahti 1975). Thus, the nuclear vowel system of Tundra Nenets includes six members, viz the reduced vowel \emptyset and the five plain vowels *a e i o u*, to which the phonetically long or diphthong-type vowels are to be added. According to the unrivalled reconstruction by Janhunen (1977), Proto-Samoyed was also characterized by a single reduced vowel as opposed to full vowels, so that Tundra Nenets has merely retained the earlier system. (Key to the phonemic transcription: palatal glide = *y* or (postconsonantly) *ÿ*; any other palatal consonant = *Cy*; velar nasal = *ng*; velar fricative = *x*, glottal stop = *q* or (if nasalizable through sandhi) *h*; schwa = ° ; reduced vowel = (when stressed) \emptyset or (when unstressed) \hat{a} ; stretched vowels = æ , í , and ú .)

Another important contribution to the description of Tundra Nenets phonology has been the introduction of an underlying phonological representation, connected with the surface representation via explicit rules. This approach was highlighted in the treatment of Tundra Nenets (morpho)phonology by Janhunen (1986). As far as phonology alone is concerned, however, only two clearly demarcated processes, viz the processes of vowel reduction and consonant sandhi, are active in the transformation of the underlying representation to the surface structure and vice versa. All other issues relevant to the positing of deep-level representations belong to the realm of morphology, and are probably better described through other kinds of grammatical means.

The process of vowel reduction was first supposed to lead to a complete loss of the underlying \emptyset and a respective reduction of a to \emptyset in unstressed positions (Janhunen 1986, 109–125). Now, however, it is clear that the underlying \emptyset is not lost but rather further reduced to an entity that may be called the schwa phoneme ° . The first scholar who explicitly hinted at its existence was Janhunen himself, pointing out that, in the light of Lehtisalo's material, "a short release element – – might dialectally have a distinctive function", and suggesting further that it was "marked for vocalicness but unmarked for segmentalness" if regarded as distinctive (Janhunen 1986, 125–126). Helimski (1987, 306) implicitly fixed the presence of the schwa but only in one particular position, viz before the final glottal stop. The same author also demonstrated that the underlying representation of the vowels is synchronically reflected in Nenets verse (Helimski 1989). Salminen (1990a, 224–225), while basically accepting the previous views, also stated the potential consequences of an extensively distributed schwa phoneme. On the basis of recent field-work, the phonemic status of the schwa was recognized in all interconsonantal positions by Salminen (1990b, 345–346; N.B. the editors of this CIFU-7 volume erased the symbol for the schwa from figures 2 and 3, apparently regarding it as a flyspeck!). The final conclusion is, then, that the schwa is present not only interconsonantly but also in the final position, with the consequences that the glottal stop addition (see Janhunen 1986, 62–69, 83) is to be regarded as a mere phonetic phenomenon, and that word-final consonant clusters are not allowed phonotactically.

As evident from the above discussion, the schwa is in all cases derived from the reduced vowel through the process of vowel reduction, and is therefore synchronically secondary. Due to its derivation, the schwa may occur only in unstressed positions. The following minimal and subminimal pairs illustrate the status of the schwa as opposed to zero. Cf.

- (*mør^oq* 'town' :) 3sg *mør^otâ* vs. (*mør* 'wild male reindeer' :) 3sg *mørtâ*;
 (*nyah* 'mouth' :) pros.sg *nyam^onâ* vs. (*nya-* 'at' :) pros. *nyamnâ*;
 (*nyerøk^o* 'strip of cloth in front of reindeer-skin boots' :) 3sg *nyer^okôdâ* vs. (*nyerkâ* 'willow' :) 3sg *nyerkâdâ*;
 (*ngiløm-* 'to get covered' :) aor.3sg *ngil^omâ* vs. (*nul-* 'to stop' :) inf.imperf *nulmâ*;
 (*ngobâ* 'mitten' :) acc.pl *ngob^o* vs. *ngob* 'one';
søltø- 'to hamper movement by its weight' vs. *søltø-* 'to be returning';
 (*syun^o* 'steam' :) 3sg *syun^odâ* vs. (*syuh* 'navel' :) 3sg *syuntâ* (<СЮНДА>);
xør^o 'knife' vs. *tør* 'body-hair' (cf. also nom.pl *xør^oq* vs. *tør^oq*);
 (*xan^o* 'blood sacrifice' :) 3sg *xan^odâ* vs. (*xah-* 'to call, ask for' :) partic.imperf *xantâ* (<ХАНДА>) vs. (*xanøq-* 'to be leaving' :) partic.imperf *xan^otâ*.

In Lehtisalo's transcription, the expression of the schwa varies greatly. It may have no overt marking at all, so that a sequence of two consonants is not kept distinct from the corresponding sequence of two consonants with a medial schwa. Such cases are actually quite uncommon, especially as the number of true consonant clusters is rather limited, and because the schwa tends to be at least covertly expressed in the remaining critical instances of phonemic opposition. The most notable position for possible confusion is word-finally, where final *b*, *l*, *m*, *r*, with a phonetic glottal stop, are usually transcribed identically with the sequences *b^oq*, *l^oq*, *m^oq*, *r^oq* (or *b^oh*, *l^oh*, *m^oh*, *r^oh*). In these and other cases, however, grammatical evidence often sheds light on the correct phonemization.

More seriously, the schwa is sometimes, usually when adjacent to a consonant cluster, transcribed exactly like the reduced vowel. As this is a question of a true confusion of the two phonemes, with no possibility of relying on covert marking, the records not infrequently appear inconclusive. More often, however, either related words and word-forms or the notation of Tereshchenko may be used to fix the vowel in question. Another position of general confusion is that after *x*, where the quality of both the schwa and the reduced vowel follows the preceding vowel in accordance with the phonetic process of vowel harmony, see below.

Covert expressions of the schwa are numerous. The process of vowel reduction is often indicative, cf., for instance, the imperfective participle *ngøm^olut^onâ* of *ngøm^olutø-* 'to be voracious', recorded as <ңамлутна> by Tereshchenko (1965, 381), where the schwa (orthographic zero) between *t* and *n* indicates that the number of preceding morae is three rather than two, so that a consonant cluster *ml* (whereby **ngømlutø^{nâ}* would be expected) is not in question. This conclusion is confirmed by an overt marking of the schwa by Lehtisalo (1956, 7).

In the final position, the schwa is regularly expressed by the absence of a final glottal stop. This is due to the phonetic process of glottal stop addition, which means that a glottal stop is always pronounced after a final consonant. In other words, if either orthography or phonetic transcription shows a Tundra Nenets word-form ending in a consonant other than the glottal stop, the correct phonemization includes a schwa after the consonant.

In internal position, all instances of sequences transcribed as three or more consonants as well as most instances of two consonants include the schwa phoneme by necessity, as only certain consonant clusters, maximally with two consonants, are allowed phonotactically. In the case of true consonant clusters, the contrast with sequences with a medial schwa is often expressed by various phonetic details. Sporadically, even a (phonetic) glottal stop may be present between the components of consonant clusters, e.g. (Tereshchenko 1965, 429) <падар^oми> vs. (432) <падарми>, both read *pad^ormyi* 'paper' poss.sg1sg (an artificial literary form for Eastern *pad^ormyih*).

The expected overt expression of the schwa is, of course, an over-short vowel. It is indeed encountered in many instances, especially after

fricatives. Furthermore, the schwa is subject to so-called phonetic vowel harmony after *x*, as explained below in the discussion about the reduced vowel.

In the orthography, the basic representation of the schwa is zero. In certain environments, especially when adjacent to a consonant cluster, or in the case of minimal pairs, <a> and <я> are used, potentially furnished with a diacritic for shortness. The variation in this respect is immense, however, as seen in Tereshchenko (1965), e.g.

- 245 <мáябцо> ‘радостный’ = 813 <майбцо> = *møʏʷbco*,
 392 <хамд’манзь> ger.fin ‘метать икру’ = 679 <хамда’манзь> =
xømtʰqmøncyʷ,
 401 <ңувондалáва> ‘луг’ : 401 <ңувондалавна> pros.sg =
nguʷontøʎʷwâ : nguʷontøʎʷwawʷnâ,
 408 <ңылáмда-> ‘завалить’ : 408 <ңылмдавэда> part. obj.sg3sg =
ngilʷmta- : ngilʷmtawædâ,
 446 <пáрда-> ‘отряхнуться’ = 447 <пáрда-> id. = *pøʀʷda-*,
 522 <сакáротá-> ‘быть сладким’ = 522 <сакротá-> ‘быть с сахаром’
 = *sakʷrotø-*,
 523 <сáлáра-> ‘вернуть’ : 523 <сáлрада> obj.sg3sg = *søʎʷra- :
 søʎʷraʷdâ*,
 523 <сáлáтá-> ‘мешать своей тяжестью движению’ : 523 <сáлта>
 subj.3sg = *søʎʷtø- : søʎʷtøʷ*,
 550 <юнетáлва> = 814 <юнетáлáва> = *yunyetøʎʷwâ* ‘riding-place’,
 582 <сáйңгá-> ‘тонуть’ = 588 <сáйңгá-> id. = *seyʷngkø-*,
 648 <тенада> poss.sg3sg ‘пáмьятъ’ = 648 <тенда> = *tyenʷdâ*,
 694 <тáйрá-> ‘развалиться’ : 694 <тáйра> subj.3sg = *teyʷrø- :
 teyʷrøʷ*,
 734 <хамзáялá-> ‘быть таким, который нравится’ = 734
 <хамзьялá-> ‘быть привлекательным, нравится’ = *xamcʷyalø-*.

Not infrequently, the schwa is rendered by <ø> or <ë>, depending on the labial or palatal character of the preceding consonant, e.g. <сивóл’> *syiwʷl* ‘dandruff’, <пензэ́р’> *pyencyʷr* ‘shaman’s drum’. Furthermore, some suffixes, notably in the habitive and incomplete, with an underlying reduced vowel, and thus surfacing with either schwa or reduced

vowel, have been incorrectly standardized to consist of an invariable ⟨e⟩ (⟨ё⟩), cf. below.

Since palatal consonants are possible only prevocally in Tundra Nenets, the 'soft sign' is a clear indicator of the schwa in cases where a non-palatal consonant follows, e.g. ⟨няльку⟩ *nyaly^oku* 'twirling stick'. When followed by a palatal consonant, however, it may be question of either a mere phonetic spreading of the palatalness to the preceding consonant, as in ⟨хальмер⟩ *xalmyer^o* 'the deceased', or the true presence of the schwa, as in ⟨мальця⟩ *maly^ocyâ* 'malica (a fur coat)'.

Due to the above-mentioned inconsistencies, it is not always easy to distinguish between the schwa and the reduced vowel on the basis of the published material. In the actual process of determining the vowel distinctions, one has to draw from various sources. When working with informants, it is also remarkably easy to get mixed up, because the request for clear elicitation often leads the informant to resort to underlying vowel distinctions, a fact that is noticeable in the word-forms Lehtisalo recorded from his main informant Mr. Maksim Yadobchev (O).

In contrast to the schwa phoneme, the orthographic (over)short vowel found between the consonants in the phonemic sequence *qC^o* appears to be merely phonetic, as in ⟨ня"ъв⟩ *nyaqw^o* 'mouth (of river)' or ⟨мя"ъл⟩ *myaq^l* 'tent' 2sg. Many examples in Tereshchenko (1965) are in conflict with the orthographic rule, apparently quite randomly, varying also with regard to the marking of the following schwa, e.g. (334) ⟨ня"ванда⟩ *nyaqw^ontâ* 'mouth (of a river)' gen.sg3sg, (578) ⟨сы"цлă-⟩ *siqng^opφ-* 'to push in'.

As already implied above, the reduced vowel phoneme consists of two functionally distinct entities, viz the vowel that is reduced by its inherent characteristics, present only in stressed positions, and the vowel that has reduced from the underlying *a*, present only in unstressed positions. Subsuming these two entities under the same phoneme is certainly plausible, though perhaps not uncontroversial, within the standard phonological framework, and that is the view adopted here. For maximal clarity, especially with regard to the standard orthography, however, it is useful to keep them graphically separate (rem-

inherent of the distinct symbols, viz *q* and *h*, for the glottal stop in accordance with its sandhi behaviour). Therefore, the stressed and derivationally primary reduced vowel is consistently marked here with \emptyset , and the unstressed and secondary one with \hat{a} .

It is evident that the phonological reality of the vowel reduction as a whole may be questioned, in so far as it yields no true rearrangement in the phonemic oppositions but merely transfers the opposition of *a* vs. \emptyset to that of \emptyset (= \hat{a}) vs. \circ in fully predictable, i.e. unstressed positions. In other words, *a* does not exist in unstressed positions while \circ cannot be present in stressed positions, and the identification of the reduced vowel as one and the same phoneme in both positions is merely a matter of opinion. The view adopted here is justified by the peculiar character of the schwa as a non-segmental phoneme which clearly sets it apart from the other, segmental phonemes of the language. Stress assignment also becomes automatic at the surface level when the schwa is regarded as fully phonemic, and the special status of the schwa is confirmed by its capacity to cause the stress to fall on a preceding syllable. The further idea that the unstressed reduced vowel derived from *a* (i.e., \hat{a}), is identical with the stressed one is based on mere economy of description.

While Lehtisalo's transcription may be justly characterized as completely phonetic, he clearly made an effort to unify his notation according to an implicitly phonemic principle. The alphabetic order for vowels used in his dictionary (Lehtisalo 1956) is particularly revealing in this respect, starting from the very reduced vowel followed by *a*, α , *e*, *i*, *o* and *u*, thus virtually presenting the modern view on the matter. Tereshchenko, in adherence to the orthography, always treated the reduced vowel in principle as a "short *a*", though in practice, she must have realized the special position of this phoneme in contrast with the other alleged short vowels, all extremely rare and, from the modern point of view, based on allophonic rather than phonemic substantiation. Indeed, due to its quantitative uniqueness, the reduced vowel shows remarkable qualitative variation, which has not surprisingly led to certain deficiencies in earlier treatments.

In stressed positions, when expressing the identical underlying phoneme, the reduced vowel is phonetically quite low. In Lehtisalo's

notation, it is transcribed as a short low vowel with higher quality, and in the orthography, it is rendered with the letters <a> and <я>, plus an optional diacritic for shortness. Lehtisalo is only rarely mistaken about the phonemization of the first-syllable reduced vowel. By contrast, the great Nenets–Russian dictionary (Tereshchenko 1965) is highly inconsistent in its use of the diacritic for shortness, many words with a first-syllable reduced vowel lacking it. On the other hand, only a single instance of the contrary error, presumably a misprint, is present in <НЯНД> for *nyant*^o ‘edge (of knife)’.

As mentioned above, some suffixes, notably in the habitive and (in certain positions) incomplete, with an underlying reduced vowel have been incorrectly standardized to consist of an invariable <e> (<ё>). Thus, for instance, the orthographical habitives <ТОСЕТЫ> ‘is used to come’ and <ХОНЁСЕТЫ> ‘is used to sleep’ are to be phonemized as *tosy^oti* and *xonyosy^oti*, respectively, and the incompletives <ЮЁБТЕ-> ‘to warm up a little’ and <ЯДЭРЬЕБЬЕ-> ‘to walk a little’ as *yuy^obtye-* and *yadæry^obtye-*.

There is a tendency to lengthen the reduced vowel in monosyllabic word-forms with a final glottal stop. As it is not certain that the lengthening leads to factual neutralization with *a*, one is tempted to regard it as a mere phonetic phenomenon. The forms in question include the three nominative singular forms *pøq* ‘cooking-stick’, *tøh* ‘summer’, and *xøq* ‘pus’, as well as the genitive *tøh* of the pronominal stem *tø-* (the author was kindly reminded of the latter case by Eugene Helimski).

In the case of the accusative plural for instrumental derivatives of the type *yadøcy^oh* ‘staff’, Tereshchenko has normalized a spelling like <ЯДЦИЕ> **yad^ocyiye* instead of the correct, and regular, *yad^ocyøye*. Curiously, the correct spelling also appears in Tereshchenko (1965) when it is not in the particular word article, e.g. (*nyírcy^oh* ‘eyebrow’ :) acc.pl3sg <НИРЦЬЕДА> *nyírcy^oyedâ* (515) but <НИРШИЕДА> (315).

In unstressed positions, when derived from the underlying *a*, the reduced vowel is phonetically more versatile. After labial and palatal consonants, its quality approaches that of *o* and *e*, respectively, as in *søwâ* ‘good’ or *xalyâ* ‘fish’. Lehtisalo (1956) indeed transcribes them as mid vowels, and following him, Hajdú (1968) was misled and phonemized **e* in the latter case, e.g. **xalye*.

The quantitative opposition to the respective plain vowels do, however, remain and can also be detected in Lehtisalo's notation. The orthography is mostly consistent in using ⟨a⟩ and ⟨я⟩, though occasionally showing ⟨e⟩ instead of the correct ⟨я⟩ in word-internal positions, for instance in ⟨ВЭНЕКО⟩ for *wenyâko* 'dog'. It is to be noted that a diacritic for shortness is never used here by Tereshchenko, the unstressed ⟨ǎ⟩ and ⟨ǵ⟩ referring to the schwa rather than to the reduced vowel. The use of the diacritic relies thus on the underlying phonemic distinctions.

In a few cases, notably after a sonorant and before an obstruent followed by a schwa, the reduced vowel may be represented, more or less facultatively, by zero in both phonetic and orthographic notations. See, e.g. the recordings of the words *nyarøt^oq* 'cross-beam (of a sledge)', *syuløk^o* 'sock', and *xarød^o* 'house' (Lehtisalo 1956, 306, 453, 166 resp. Tereshchenko 1965, 358, 588 (two forms), 748 and 746). The validity of the phonemizations seems to be beyond doubt, though a special lengthening of the preceding vowel is reported by informants to be the factual (covert) representation of the phonemic structure. The word-forms (*mør^oq* 'town' :) dat.sg *mørøt^oh* and (*xanøq-* 'to be leaving' :) conneg. *xanøt^oq* are especially frequently written with zero marking for the reduced vowel, but both cases may be pseudo-standard recordings of the apparently true dialectal forms *mørt^oh* and *xant^oq*.

When the reduced vowel, whether primary or secondary, and also the schwa are preceded by the velar fricative *x*, they adopt the quality of the preceding vowel. Their quantity, however, remains intact so that no phonemic mergers occur, whence the phenomenon can be called only a phonetic vowel harmony. Unfortunately, this vowel harmony has been standardized in the orthography, yielding spellings like ⟨ТОХОНА⟩, ⟨ҢЭСЫХЫНА⟩, and ⟨НОХО⟩ to render (*to* 'lake' :) loc.sg *tox^onâ*, (*ngesi* 'camp' :) loc.sg *ngesixønâ*, and *noxâ* 'Arctic fox'. It is true that in the former cases, with an underlying reduced vowel, a diacritic for shortness may be present in Tereshchenko (1965), albeit rather inconsistently, nonetheless indicating the reality of the opposition. The plain *a* may also be written according to the vowel harmony, e.g. dat.sg ⟨НОХОН⟩ *noxan^oh*, and Lehtisalo has, incidentally, recorded such forms both with and without the harmony. Some dialects may indeed exhibit

cases of phonemization of the vowel harmony, but in general, it is reasonable to keep to the phonetic interpretation.

The plain vowels *i e a o u* do not require thorough treatment. It is true that the phonetic height of the unstressed *e* and *o* approaches that of *i* and *u*, but the phonemes appear to be kept apart even in the easternmost dialects, where the phenomenon is most striking. It is to be noted, however, that erroneous interpretations of the vowels in question are present in the sources. For instance, Tereshchenko occasionally proposes *-*yi* instead of the apparently correct -*ye* for accusative plurals of consonant stems with a high vowel, e.g. (*syuh* 'navel' :) acc.pl. <сюи> **syuyi pro syuye*.

The forthcoming articles of Janhunen and Salminen are both devoted to the question of the phonemic analysis and interpretation of the so-called long vowels in Tundra Nenets. In anticipation, it may be stated that there are three additional vowel phonemes *æ*, *í*, and *ú*, labelled as 'stretched vowels' by Salminen. Vowel sequences consisting of any vowel and a reduced vowel or, when due to vowel reduction, schwa also appear. Both the stretched vowels and the vowel sequences are historically secondary, owing their existence to the diachronic processes of monophthongization and contraction, respectively.

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