

Traces of Proto-Samoyed vowel contrasts in Nenets

My goal in this article is to track down features of modern Nenets that shed light on the recent revisions in the reconstruction of the Proto-Samoyed vowel system. The starting-point is, as in Samoyed historical linguistics in general, Janhunen's epoch-making etymological dictionary *Samojedischer Wortschatz* (Janhunen 1977a). From a historiographical perspective, it is interesting to reflect on the intensity that characterized the study of Samoyed historical phonology and etymology in the 1970s. It was commenced by Sammallahti whose pathbreaking work (Sammallahti 1975) gave impetus to a period of rapid development advanced by Janhunen (1976, 1977a) and Helimski (1978a, 1978b; cf. also Helimski 2001: 184). Most remarkably, *Samojedischer Wortschatz* (henceforth SW) represented an early culmination for the field in creating a detailed, comprehensive and reliable assessment of the vowel history, which yielded a paradigm of 11 units with 10 full vowels *ā *ä *e *ẹ *ị *i *o *ö *u *ü and a single reduced vowel *ə̄ for Proto-Samoyed (SW 14). This has remained the definitive basis for all subsequent efforts, and the fact that Janhunen's results were to a great extent corroborated by Helimski's concurrent research can properly be regarded as a triumph of historical linguistics (cf. Helimski 1978b: 123).

In his first article on the topic, Helimski (1978a) notably does not yet mention Janhunen at all but only refers to Sammallahti's work. Soon thereafter, however, close and fruitful cooperation between Janhunen and Helimski started to enrich the field, in particular through a series of publications by Helimski combining language-specific topics with the results of comparative analysis that repeatedly led to new discoveries and perspectives for research. Three major findings have emerged from this multi-layered interaction, namely (i) the expansion of the system of non-initial vowels, initially restricted to *ā *ä *ə̄ by Janhunen, (ii) the introduction of a front reduced vowel in addition to Janhunen's single *ə̄, and (iii) the notion of the so-called 13th Proto-Samoyed vowel resulting in the split of the original SW *i. Helimski's arguments were largely based on Nganasan data, and it is my task here to determine whether corresponding reflexes may be traced in Nenets as well. In anticipation of the results, the Proto-Samoyed reconstructions throughout the article incorporate three low vowels *ā *a *ä (of which *a corresponds to SW *ä, and *ä to SW *e) and two reduced vowels *ə̄ *ə plus a variety of vowels beyond the first syllable, while the recon-

structions in SW are, as a rule, given in parentheses. The discussion on these three major discoveries is supplemented by a brief survey of the ways in which reconstructions may be updated through a more precise understanding of the quantity relations in Nenets.

In what follows, Tundra Nenets words are generally given in phonological transcription, developed in cooperation with Janhunen; the current version employs the letters *ø* and *ŋ* for the respective “*ø*” and “*ng*” used in a number of earlier publications. For Forest Nenets, the notation is the same as in Salminen (2007). For other languages, I quote the sources faithfully unless stated otherwise. Nganasan material in particular derives mainly from the school dictionary (Zhdanova & Kosterkina & Momde 2001) meticulously edited by Gusev, which means that the Cyrillic orthography is used for Nganasan. Some of the Tundra Nenets words derive from Helimski’s unpublished records through personal communication. Selkup words are quoted from Donner & Sirelius & Alatalo (2004).

The system of non-initial vowels

Janhunen limited the system of non-initial vowels to the extreme minimum of **ä* **ä* **ä* not only on the basis of comparative evidence but also drawing from internal reconstruction of Nenets. For instance, insofar as Tundra Nenets accusative plural forms of the type *xəno* of *xən^o* ‘sledge’ come from Proto-Samoyed forms ending in *-*əj*, in this case **kəncəj* > Nganasan *кəндəй*, all words with a non-initial *o* in Tundra Nenets were deemed to derive similarly from a respective sequence **əj*, e.g. (SW 35) **jəptə-j* > PN **jəpto* > TN *yəbto* ‘goose’, a conclusion supported by the status of the word as a derivative of the verb **jəptə-* > **jəptə-* > *yəbtə-* ‘moult’. Janhunen’s model of internal reconstruction is in many ways ingenious, but it has its risks. For instance, abstract stems of the type (SW 54) **kəptə-* (intr.) ‘erlöschen’ led Katz (1996) signally astray as he started regarding them as something primary and original, although in SW they only serve a purpose as part of larger reconstructions, thought to involve **j* by Janhunen but now argued by Aikio (2002: 11) and Gusev (2008: 125) as having **w* instead.

Helimski (1978b), on the other hand, demonstrated that nouns of this type generally have a labial vowel in Nganasan and in fact most Samoyed languages, cf. Ng *дебты* ‘goose’. If **jəptəj* becomes *дебты* in Nganasan while **kəncəj* emerges as *кəндəй*, the latter form would have to represent analogical reanalysis by attaching the accusative plural ending directly to the genitive stem. While such a hypothesis is not implausible as such, and the apparent lack of nouns with a stem-final sequence *əй* would rather support it, comparative data rather overwhelmingly points to the contrary hypothesis, namely that ‘goose’ was already **jəpto* in Proto-Samoyed. Furthermore, two of the most frequent *o*-stem nouns in Nenets derive from proto-forms with a second-syllable labial vowel plus a final glide (Helimski 1978b: 124), i.e. TN *ηəno* ‘boat’ ~ Ng *чəндуй* < PS **əntoj* (SW 15 **əntəj*) and TN *yəŋko* ‘trap’ ~ Ng *деңгуй* < PS **jəŋkoj* (SW 35 **jəŋkəj*).

The dialectal Tundra Nenets accusative plural *γәηkoyo* (Lehtisalo 1956: 83a) instead of the synchronically regular *γәηku* appears to contain a relic of the original glide, deriving from PS *jәηkojәj, although modern forms may themselves be analogical, for instance the same consultant used both *γәbtu* and *γәbtoyо* for ‘goose’ acc.pl (Lehtisalo 1956: 83b). Helimski’s assumption of second-syllable labial vowels also simplified Proto-Samoyed phonotactics (Helimski 1978b: 124), cf. TN *ηesoh* ‘joint’ < PN *ηesoη ~ Ng *ηадюй* : *ηасунә* < PS *ešoη (SW 15 *ešәjn²). Indeed, for ‘boat’ and ‘trap’ one would have had to reconstruct **әntәjj and **jәηkәjj to make them work in the SW framework.

There are still notable problems with the reconstruction of non-initial labial mid vowels. For instance, an apparently unetymological final consonant, typically *η*, is found in Castrén’s Nganasan records of words such as ‘goose’ (Castrén 1855). Janhunen in SW describes the consonant as a derivational suffix while Helimski (1978b) regards it as paragogic, whereas Gusev (2008) identifies it with PS stem-final *w, with particular reference to Mator data (Helimski 1997; cf. also Alatalo 1999). Gusev’s assessment undoubtedly clarifies matters, but questions remain that can only be answered by a more comprehensive study. For instance, Gusev does not discuss ‘goose’ itself, apparently because its morphophonology shows it to have a stem-final vowel (poss. 3sg *дөбмүзү*) and no cognate is found in Mator. At the same time, *дөйбә* ‘orphan’ is supposed to show the effect of an original final consonant (Gusev 2008: 117), but Zhdanova & Kosterkina & Momde (2001) record the possessive form *дөйбәзү*, indicative of a normal vowel stem. Similarly, the strong grade in Ng *бөмү* ‘bowel’ would warrant explanation in Gusev’s framework; of the two Mator records, *bedöh* would appear more reliable than *?bedüh* (Helimski 1997: 215), cf. TN *yedyo* as opposed to Mt *kaduh* ‘бүрә’ ~ TN *xad°* ‘пүрә’, discussed below. It is a quirk of fate that the only word of the ‘bowel’ type with a Uralic background plus a gradable consonant for Nganasan is only attested in Kamas and Nenets, i.e. TN *nado* ‘sister/brother-in-law younger than spouse’ ~ FN *natu* < PN *nato ~ Km *nado* < PS *nāto (SW 98 *nāt’ā- (? *nāt’әj) ‘Schwager’) < PU *nataw (Sammallahti 1988: 539 *nātiw; cf. Gusev 2008: 126).

Proto-Nenets *æ was found in all positions, but after palatal consonants it later merged with other vowels, i.e. PN *yæ > TN *yí* ~ FN *ye* (Salminen 2007: 367). Furthermore, *i* and *æ* do not occur in non-initial syllables in modern Tundra Nenets, with *i* and *e* respectively being used in their stead. In initial syllables, PN *æ unequivocally derives from vowel-glide sequences, e.g. TN *xæx°* ‘ýдол’ < PN *kæкә ~ Ng *көйкә* < PS *kәjkә (SW 51 *kәjkә; Helimski 1997: 262 *kәjkә) and TN *tæwa* ‘tail (of an animal)’ < PN *tæwa ~ Ng *mәйбү* < PS *t’әjwä (SW 150 *t’әjwä; Helimski 1997: 349 *tajwa [!]). In non-initial syllables, a similar development must be assumed on the basis of the accusative plural stem in particular, for instance TN *ηuda* ‘hand’ : acc.pl *ηudyi* < PN *ηuta : *ηutyæ < PS *utā : *utәj (not in SW but potentially *utә-j; cf. Salminen 2007: 367). From PS *әj > PN *yæ it may be further extrapolated that the Proto-Nenets non-initial *æ after non-palatal consonants derives from *әj, now vacated in the recon-

struction system thanks to the replacement of SW *āj with *äj, e.g. (eastern) TN *xale* ‘fish’ acc.pl < PN *kalæ < PS *kålāj. In other cases of PN non-initial *æ, comparative material is scarce and partly contradictory, which makes it difficult to venture even tentative reconstructions, but it can safely be said that the reflexes such as TN *tideh* ‘Siberian pine’ < PN *titæŋ ~ Sk *tītæŋ* id. imply neither the *əjê sequence posited by Janhunen (SW 160 *tūtəjêŋ) nor the second-syllable *e reconstructed by Helimski (1991 [2000: 15] *tūtēŋ). Indicative examples include TN *pəreh* ‘drill’ < PN *pərəŋ ~ TE *pore*’ ~ Sk *parəŋ* ‘Eishauē’ (SW 114 *pərəjêŋ), TN *tyamteq* ‘frog’ < PN *tyamtæq ~ Sk *čāmčä* id. (SW 114 *cämčəjê), TN *toxeq* ‘fabric, textile’ < PN *tokæq ~ Ng *myzbi*’ id. (where gradation rules out any reconstruction involving an open second syllable), and TN *nyade* ‘Renntierkalb, das einige Wochen später als normalerweise geboren ist’ < PN *nyatæ ~ TE *nadi* ‘телёнок’. It is true, however, that the Tundra Nenets stem type exemplified by *xæw°di°* : poss. nom.sg2sg *xæw°der°* ‘rib’ ~ FN *kāw°tä* ~ Ng *кәүзәә* < PS ? *kəjwətəjê (SW 57–58: TN < *kəjwətəjê) seems to conform to Janhunen’s original reconstruction, and the general picture is complicated by the fact that yet another stem type with second-syllable *e* exists in Tundra Nenets, e.g. *sirey°* : poss. nom.sg2sg *sirer°* ‘двухгодовая важенка’ ~ TE *sire* < PS ? *sɪrəjê vs *sirey°* : pros. *sirey°wəna* (not **sirew°na*) ‘зимний’ ~ TE *sireo* < PS ? *sɪrəjjê, both derived from TN *sira* ‘snow’ < PS *sɪrə. At the same time, Forest Nenets preserves PS *əjê-sequences at least when secondary stress is involved, e.g. TN *xæw°xi°* ‘находящийся на какой-л. стороне’ ~ FN *kāw°xəj°* ‘находящийся рядом, продольный’ (Barmich & Vello 1994, Lehtisalo 1956: 108a, 495b) < PS *kəjwəkəjê, cf. Ng *лабсэкәә* ‘последний (младший) ребёнок в семье, последыш’ < PS *lɛpsəkəjê with the same suffix combination; cf. also the narrative suffix, e.g. FN narr. 3sg *tɪraməj°* ‘es ist vertrocknet’ : 2sg *tɪramän°* ~ TN *tirawi°* : *tirawen°* id., vs the perfective participle suffix, e.g. FN *tɪramä* ~ TN *tirawi°* ‘высушенный’, as well as FN *wɪl°nəjäl-* ~ TN *wir°ner-* ‘(ohne zu finden / überall) suchen’ (Lehtisalo 1956: 73a).

Unlike non-initial mid vowels, the case for non-initial high vowels (*i, *j, *u, *ü) is relatively straightforward: they occurred in Proto-Samoyed, but merged with the reduced vowel *ə in Proto-Nenets, which is basically why they are not present in SW. Recognizing Proto-Samoyed *u-stems is possible on the basis of both the comparative method and internal reconstruction. Enets preserves the final vowel intact, while Nganasan shows a high vowel with characteristic sound changes, e.g. FN *ŋan°* ‘louse’ < PN *ŋannə ~ TE *adu* ~ Sk *unču* < PS *āncu (SW 18 *āncə), TN *ŋerm°* ‘north’ < PN *ŋermə ~ TE *umu* ~ Ng *ŋарми/ŋармү* ‘северо-восточный ветер’ < PS *ɛrmu (SW 22 *ɛrmə), TN *ŋay°* ‘thaw’ < PN *ŋajə ~ TE *aju* ‘слякоть’ < PS *āju, TN *yamp°* ‘long’ < PN *jampə ~ TE *d’abu* ~ Sk *čumpu* < PS *jāmpu (SW 37 *jāmpə), TN *yar°* ‘плач’ < PN *jarə ~ Ng *ðəpu/ðəpy* ~ Sk *cūru* < PS *jāru (SW 38 *jārə), TN *xər°* ‘knife’ < PN *kərə ~ TE *koru* < PS *kəru (SW 54 *kərə), and TN *xad°* ‘пугра’ < PN *katə ~ TE *kadu* ~ Ng *козү* ~ Sk *qoču* [!] < PS *kəču (SW 57 *kəcə). Similar reflexes are attested in Sayan Samoyed languages, but in a number of cases a final conso-

nant, identified as *w by Gusev (2008), seems to have been either preserved or added after the final labial vowel, which means that the above reconstructions are only intended as tentative representations for highlighting the contrast with the reconstructions in SW.

Curiously, a merger reminiscent of Nenets also took place in Northern Selkup, which thanks to its prominence was another key language for Janhunen's reconstructions. He was therefore quite understandably led to regard the reduced vowel as original and analyze many of the labial vowels in Nganasan and Enets as derivational suffixes. Labial high vowels were obviously not restricted to stem-final positions but occurred stem-internally as well as in suffixes, e.g. TN *nyax*^or 'three' < PN *nyaxər ~ TE *nexu* ~ Ng *нагур* < PS *nakur (SW 99 *nākôr ? ~ *nākôjr), TN *mət*^oq 'six' < PN *məqtəq ~ TE *motu* ~ Ng *мәтү* < PS *māktut (SW 85 *māktât ? ~ *māktâjt), TN *nyar*^oq 'across' < PN *nyarəq ~ FE *naru* ~ Sk *ārut* < PS *arut (SW 21 *ārât³), and the subordinative marker TN *-b*^oq < PN *-pəq ~ Ng *-xy*, also with an original labial high vowel (Helimski 1978b); cf. also the hortative marker TN *-xə* < PN *-kə ~ Ng *-xy* : *-zy* and its wider connections within Uralic. The *əj-sequences in SW were obviously meant to overcome the problem with labial vowels, but even in Janhunen's own framework they would have produced o's in Tundra Nenets etc. instead of the reflexes that we actually find.

As for internal reconstruction, derivational morphology in both Nenets languages reveals *u-nouns, notably through translative verbs ending in *um* rather than *om*, e.g. TN *ηayum*- 'наступить – об óттепели' ~ FN *ηijum*- id. < PN *ηajum-, TN *yatpum*- 'удлиниться' ~ FN *jimpum*- id. < PN *jampum-, TN *yarum*- 'заплакать' < PN *jarum-, TN *xadum*- 'начаться, подняться – о пургé' ~ FN *kitum*- 'start snowing' < PN *katum-, and TN *piwum*- 'выветриться' ~ FN *piwum*- id. < PN *piwum-; cf. TN *təbom*- 'покрыться песком' < PN *təpom- (from TN *təb*^o 'sand' < PN *təpə ~ TE *tobo* < PS *t'əpə). At least in Forest Nenets, the distinction is also present in inflection, cf. *ηan*^o 'louse' : acc.pl *ηinu* < PN *ηannu < PS *āncuj (cf. *kān*^o 'sledge' : acc.pl *kānu* < PN *kənnu < PS *kāncəj); analogical forms of the type acc.pl *ηanu* appear as well (cf. Lehtisalo 1956: 18b), but even today conservative speakers prefer the original forms with metaphony caused by the original second-syllable high vowel. Other similar accusative plural stems recorded by Lehtisalo (1956) include *waps*^o : *wipsu* 'Rede', *jaw*^o : *jiwu* 'Harn' (analogically also *jawu*), *japs*^o : *jipsu* 'Bratstäbchen', *law*^o : *liwu* 'Pferd' (~ *lawu*, a Khanty loanword for which the metaphonic form itself may be analogical), *mat*^o : *mitu* 'Bellen, Gebell (лай) (des Hundes, Wolfes, Fuchses)' ~ FE *mađu* 'лай' (cf. Sorokina & Bolina 2001: 66); cf. also *pāx*^o : *pixu* 'an der Luft getrockneter Fisch' ~ Ng *хуакы* : gen.pl *хуагы* " 'юкола (вяленая рыба)'. Similar records from Tundra Nenets are rare, for instance *xadu* "лэңгор" 'снэжные тучи' (Tereshchenko 1965: 255) would appear to contain the genitive plural *?xaduq* < PN *katuq rather than the synchronically regular *xad*^oq of *xad*^o 'пурга' (Salminen 1998a: 55; cf. also Salminen 1997: 89–90). Moving to apparent *ü-stems, a similar case is the Tundra Nenets accusative plural stem *?tyiryi*

rather than the analogical (and firmly attested) *tyírye* (Salminen 1998a: 132; *?tyír°* could also be a potential variant) of *tyír°* ‘cloud’, supported by records with stressed second syllables, e.g. *mexə*” *мурод* ‘те далёкие облака́’ with poss. nom.pl2sg *?tyíryid°* (Tereshchenko 1965: 349) where simple phonetic raising typical of many dialects does not come into question (Salminen 1998b: 521). The correct Proto-Samoyed reconstruction would appear to be **tiərü* (Helimski 1978b: 125 **tiârü*; cf. SW 162 **tiâ-(j)râ*; Salminen 1997: 90 with incorrect final **i*) > TE *ciori* ~ Ng *чууру* id.

The distribution of non-initial **u* vs **ü* (as well as **j* vs **i*) seems to have generally followed palatal harmony, and the frontness was therefore not distinctive as such, although it seems that vowel harmony was relaxed in suffixes from early on. The **ü*-nouns in particular that may be reconstructed in Proto-Samoyed are not numerous, but besides ‘cloud’ these include two old kinship terms, namely TN *syel°* ‘sister’s husband’ ~ FN *syel°* < PN **syelə* < PS **kälü* < PU **käliw* (Sammallahti 1988: 538 **käläw*) and TN *yij°* ‘son-in-law’ ~ FN *wyij°* < PN **wyijə* ~ Ng *буиу* < PS **weñü* (SW 176 **wiñə*) < PU **we/äñiw* (Sammallahti 1988: 541). There is less Nenets material for internal reconstruction of these words; on the basis of the above discussion, the Tundra Nenets denominal verbs *yiyom-* ‘стать зятем’ and *yiyog-* ‘быть зятем; называть зятем’ (Tereshchenko 1965: 139) would appear to be analogical, while no corresponding Forest Nenets records have been attested. Verbal nouns of the type TN *myin°* ‘движение, направление’ ~ FN *myin°* < PN **myinə* ~ Ng *мыну* (: poss. 3sg *мынузы*) ‘движение’ < PS **menü* (not in SW but potentially **minə*) < PU **meniw* would seem to belong here as well.

Unlike non-initial **u* and **ü*, whose recognition requires either comparison with other Samoyed languages or recourse to internal reconstruction, non-initial **i* has left an overt trace by palatalizing the preceding consonant, preserved in Forest Nenets but, except in the case of **sy*, depalatalized in Tundra Nenets. Many of these words have cognates in Enets and Nganasan but rather few in southern Samoyed and therefore only a small number of **i*-nouns appear in SW, e.g. TN *yen°* ‘bowstring’ ~ FN *jeny°* < PN **jennyə* ~ Ng *денти* ~ Sk *ćinti* < PS **jänti* (SW 43 **jentä*; also Janhunen 2007: 215), TN *mərcy°* ‘shoulder’ ~ FN *mälisy°* < PN **mərsyə* ~ TE *mod’i* ~ Ng *мэрсы* < PS **mərki* (SW 88 **mârkä*), TN *yempəq-* ‘dress’ ~ FN *jempyăq-* < PN **jempyəq-* ~ Ng *демби*”- ~ Sk *čempət-* / *čjmpət-* [!] < PS **jämpit-* (SW 42 **jempät-* ? ~ **jempəjt-*), TN *pyensy°r* ‘shaman’s drum’ < PN **pyensyər* ~ Ng *хеньдир* < PS **pəñkir* (SW 119 **peñkär*; cf. Janhunen 1986b: 108, Helimski 1991 [2000: 16], Janhunen 2005: 23, 24 **pe-n-kir*, Salminen 2005: 71–72, Anikin & Helimski 2007: 77); cf. also, for instance, TN *yerə-* ‘распороть’ ~ FN *wyelyă-* < PN **wyeryə-* ~ Ng *беру-* ‘разрѣзать, раскройть’ < PS **wäri-*, as well as FN *syarty°* ‘древѣсная корá’ : *syirtuun-* ‘ободра́ть, сня́ть кору́ (с дере́вьев)’ as opposed to TN *syabt°* : (analogical) *syabtəh-* id. All instances of PS **ś*, included with a question mark in SW (9) but already regarded as obsolete by Janhunen (1998: 462), can indeed be readily explained by a following **i*, for example TN *pyisy°h* ‘laughter’ ~ FN *pyisy°* < PN **pyisyəñ* ~ Ng *xudu* ~ Sk *pisi* < PS **pisiñ* for which SW (126) has the stem **pisz-* (? **piśə-*).

The overall picture is confused by the presence of a number of TN words which have not undergone depalatalization, such as *xəmtɥ*^o ‘обрыв, крутой спуск’ ~ TE *kodi* and *xəny^oh* ‘йней’ ~ FN *kāny^o* ~ TE *kodi*, discussed by Helimski (1984a [2000]). Since words without depalatalization appear to derive from earlier forms with second-syllable *i just like the ones with it, the divergence of the two types has presumably occurred only after Proto-Nenets. A possible, although unexpected conditioning factor might be the first-syllable vowel, since besides *xəmtɥ*^o and *xəny^oh* mentioned above, the group with palatality includes *pədy^o* ‘заход, закāt’, *ɲədyə-* ‘виднётся’, *təny^o* ‘я’, *sətnnyə-* ‘наб́ить’, *xəryə-* ‘приб́иться к земле’, *təlyə-* ‘сломать, поломать’, and *pəly^oq* ‘густой’, and contrary examples with ə in the first syllable and depalatalization of a dental consonant (labial consonants are invariably depalatalized before *ə in TN) do not seem to exist. It should be noted that there are a few examples with another first-syllable vowel, notably *yemnyə-* ‘patch’, *ɲody^oh* ~ *ɲody^oq* ‘hardly’, *miny^o* ‘belly (of a fish)’, *nyany^o* ‘bread’, *winyə-* ~ *wunyə-* ‘not (emphatic)’ and *xany^oq* ‘depart’ conneg., as well as cases of dialectal variation such as *lyar^o* ~ *lyary^o* ‘ruffe (*Gymnocephalus cernuus*)’, but many if not all of them can be explained as loans or otherwise secondary formations.

Furthermore, Proto-Samoyed non-initial *i seems to have been directly preserved in Tundra Nenets in positions where secondary stress has offered support. Firstly, in many if not all dialects the instrumental derivative of the type TN *yilyebcy^oh* ‘wild reindeer’ < PN *jilyepsyəŋ < PS *(j)eläpsin has the accusative plural with an otherwise inexplicable vowel change, i.e. *yilyebcyiye* (rather than ?*yilyebcyəye*; cf. Salminen 1993a) < PN *jilyepsyije. In unstressed syllables, the same stem type shows regular reduction, e.g. *yolcy^oh* ‘time, measure’ : acc.pl *yolcy^oye* < PN *jolsyaje < *jolsyije, although analogical formations are obviously possible in the case of semantically transparent instrumental nouns. Secondly, the modern Tundra Nenets *i* found in dual suffixes such as in *xalyaryih* ‘your (du) fish (sg)’ or *mə^odyih* ‘you (du) are’ appears to reflect a single PS *i as well, although here its preservation must be attributed to analogy based on preterite forms where the vowel would have been stressed, e.g. *mə^odyincy^o* ‘you (du) were’ < PN *məŋatyinsyə. In Forest Nenets, there are no such exceptions to the merger of the non-initial *i with PN *ə, but the accusative plural form corresponding to the above is *jilyipsyäji* (not **jilyipsyiji*) and the dual forms are *kalyaly^o* < PN *kalyaryəŋ and *məŋaty^o* < PN *məŋatyəŋ : pret. *məŋatyänsy^o*, respectively. Similar dual suffixes are known from the western dialects of Tundra Nenets, for instance (Sjo.) *ənobty^oh* ‘boat’ acc.sg3du (Lehtisalo 1956: 480b) < PN *ɲənomtyəŋ in contrast with *ɲənomtyih* in central and eastern TN.

The case for non-initial *i again rests on comparative evidence, for example TN *yab^o* ‘luck’ ~ FN *wyap^o* < PN *wyapə ~ Ng *baXu* (: poss. 3sg *baXužy*) ‘wild reindeer’ < PS *wapi (not in SW but would be *wäpə). Janhunen (1998: 465) had already revised the Proto-Samoyed form as *wäpi, but if the current reconstruction was indeed the presumably disharmonic **wapi, it should have resulted in FN *wyapy^o as in *jempyäq-* ‘dress’ discussed above.

The case for the front reduced vowel

Janhunen makes reference to “stems which, in spite of the lack of proper conditions, do show the effects normally typical of the palatal harmony” (Janhunen 1986a: 147). The stems in question have a reduced vowel (SW *ə̃) in the first syllable, and the effects of the palatal harmony are shown for instance in the accusative plural formation in Nenets, e.g. TN *tər* ‘body-hair’ : acc.pl *tərye* (Salminen 1997: 66, 72), which contrasts with words like TN *təh* ‘summer’ : acc.pl *təho*; the same phenomenon is found in Forest Nenets. In the SW framework, the respective reconstructions would be *tər : *tərə̃j vs *təh : *təhə̃j, which indeed shows the lack of proper conditions for the attested second syllable palatality and vowel in *tərye* and similar word-forms.

On the basis of Nganasan internal reconstruction and comparative Uralic data, Helimski (1993 [2000]) concluded that Proto-Samoyed had two contrasting reduced vowels which merged in all modern Samoyed languages but remain synchronically attestable through Nganasan vowel harmony. He also showed that the two Proto-Samoyed reduced vowels were unequivocally derived from two different Proto-Uralic vowels, the back one from *u and the front one from *i. For the front reduced vowel, Helimski suggested a curious symbol “ə̃”, which represents an uncharacteristic misjudgement on his part: in the Finno-Ugrian Transcription, to which he steadfastly adhered not only in phonetic writing but also in phonological transcription, the diaeresis does not combine with front-vowel letters, including “ə̃”. Furthermore, diacritics on reversed characters revolve accordingly and appear therefore on the opposite side of the letter, as demonstrated by the relationship between *ə̃ and *ẽ. Insofar as *ẽ* is used synonymously with *e* (cf. Janhunen 1998), then a conventional symbol “ẽ” can certainly be designed, but it would then represent the back vowel in question. Fortunately, there are no obstacles to using *ə̃ as the front pair of *ə̃, as it is not only traditional and logical but also convenient and useful. Helimski’s idea of confining the symbol “ə̃” to the function of an archigrapheme for reduced vowels with unspecified frontness should be regarded as a moot point as well, firstly because synchronic data alone makes it possible to determine the frontness of a reduced vowel in the overwhelming majority of cases, and secondly because the idea contradicts the well-established and functioning practice of employing superscript digits for presenting Proto-Samoyed archigraphemes (SW 14).

Besides Nganasan data, Helimski (1993: 132 [2000: 201]) refers to Tundra Nenets derivatives of the types *ηəbtyeq-* ‘пáхнуть’ from *ηəbt*° ‘зáпах’ vs *təhoq-* ‘летовáть’, parallel to the accusative plural forms *tərye* vs *təho* cited above; cf. also *təryer-* ‘обрастí шéрстью’ as opposed to *ηəwor-* ‘есть’ from *ηəm-* ‘съесть’. A reasonably clear picture emerges from these and numerous other examples in both Nenets languages: there are two kinds of words containing only reduced vowels in SW depending on whether the SW *ə̃j in non-initial syllables yields *o* or *ye* in Tundra Nenets (and likewise in Proto-Nenets), with no conditioning factor. The only suggested remedy for this shortcoming is, indeed, Helimski’s idea

of two reduced vowel phonemes for Proto-Samoyed, and Nenets evidence can in retrospect be regarded as equally conclusive. The current reconstruction for SW (149) *târ : *târâj would therefore be *tər : *tərəj; similarly SW (16) *âptâ must be replaced with *əptə while for instance SW (148) *t'âpâ remains unrevised on the basis of TN *təb*° ‘sand’ : acc.pl *təbo* and so forth. It may be added that the front vowels of *tər and its rhyme-word *mər > TN *mər* : acc.pl *mərye* ‘wild reindeer bull’ further weaken their already hypothetical areal connections (Janhunen 1977b: 123–124). On the other hand, as long as *jəkə rather than (SW 34) *jâkâ is the correct reconstruction for TN *γəx*° etc. ‘twin’, the “unaccountable difficulties” mentioned by Janhunen (1977b: 125–126) concerning the sound substitutions in this word of Turkic origin are perhaps easier to overcome (cf. also Terent’ev 1982); the word is incorrectly rendered as **γax*° by Salminen (1998a: 151), while Janhunen (1977b: 125–126) had already identified the first-syllable vowel. For words with both SW *â and full vowels, a regular system of vowel harmony must be assumed, so that, for example, SW (170) *wâtâ > TN *wəda* ‘hook’ requires no revision while SW (115) *pâtâ must now be rendered as *pətâ > TN *pədyä* ‘bile’.

The (western) Tundra Nenets word *mər*°*q* ‘город’, quoted by Janhunen (1986a: 147) as an example of the above circumstances, does not seem to belong to exactly this context, because its apparent eastern TN cognate *məry*°*q* ‘забор’ would suggest an original *i in the second syllable. Moreover, the further cognates of the Tundra Nenets word are irregular: FN *mänty*°*q* id. (Lehtisalo 1956: 242b) has a consonant cluster and TE *moru* ‘укреплéние’ (Helimski, personal communication) reflects back vowels. Areal complexities notwithstanding, a potential Pre-Nenets reconstruction based on TN *mər*°*q* ~ *məry*°*q* would be *mərít, and its regular accusative plural *mərítəj would yield the attested *mər*°*dye* ~ *məry*°*dye* as expected.

The contrasts among front vowels

Janhunen points out that the Proto-Samoyed “*ä in the initial syllable [– –] behaved like a back vowel, while *ä in non-initial syllables [– –] was a front vowel”, quoting SW (90) *mät > TN *myaq* ‘tent’ with loc.sg SW *mätkânâ > *myak*°*na* rather than **mätkânâ > **myak*°*nya* which would have been expected if vowel harmony had applied consistently, cf. SW (176) *wit : *witkânâ > TN *yiq* ‘water’ : loc.sg *yik*°*nya* (Janhunen 1998: 466). Nenets accusative plural forms such as TN *myado* vs *yidy*e illustrate the discrepancy further, and the presumed developments can justifiably be characterized as anomalous. Sound substitutions in early loanwords may also cast doubt on the phonetic value of SW *ä (cf. Terent’ev 1982).

A plausible explanation to the Nenets state of affairs was again offered by Helimski on the basis of Nganasan, when he suggested that there had also been an additional full vowel in Proto-Samoyed (Helimski 2005). Until then, the

duality of Nganasan reflexes of SW *i was generally assumed to have emerged in the separate history of Nganasan (cf. Mikola 2004: 76–77), although it must be noted that Sammallahti (1975: 104–105) had already discovered the relevant sound correspondences, and his full vs reduced front high vowels convey the same opposition as Helinski’s later split. Helinski, however, succeeded in connecting the contrast with its Uralic background more explicitly, for example Ng *ним* ‘name’ < PS *nim (SW 102; a variant *nüm would be secondary) < PU *nimi, Ng *хирə* ‘height’ < PS *pirə- (SW 125 *pirə) < PU *piði- and Ng *буи* ‘ten’ < PS *wüət (SW 177 *wüt) < PU *wiṛti are opposed to Ng *бы* ‘water’ < PS *wet (SW 176 *wit) < PU *weti, Ng *мын-* ‘go’ < PS *men- (SW 94 *min-) < PU *meni- and Ng *хыты* ‘nest’ < PS *petä (SW 126 *pitä) < PU *pesä. His conclusion was therefore that SW *i should be replaced with two Proto-Samoyed vowels, *i and *e, and that SW *e would then be represented by *ä and SW *ä by *a in the revised vowel system; Helinski suggests a variant symbol *ɛ in place of the current *ä, but the choice of *ä over *ɛ seems self-evident, given the system of phonological contrasts as well as the practical accessibility of symbols. For an instructive summary and application of the new system, see Aikio (2006); cf. also Aikio (2002: 49–50).

As Helinski already points out, referring to Janhunen (1998: 466) and Salminen (1997: 66–67), “even in Nenets” SW *ä “behaves as an original back vowel” (Helinski 2005: 37). The current reconstructions of forms like TN *myaq* : *myak^ona* : *myado* mentioned above are accordingly *mat : *matkânä : *matâj, and the reflexes turn out to be both regular and expected. Notably the second-syllable SW *ä remains intact in the revised system, and all instances of *ä now function as front vowels irrespective of phonotactic position.

It turns out that *a must also be added to the inventory of Proto-Samoyed non-initial vowels for words such as TN *ηodya* ‘berry’ ~ Ng *ηута* < PS *(w)ota (SW 177 *wot3 ~ [for Nganasan] ? *otâ), TN *xidya* ‘cup’ ~ Ng *кута* < PS *kĭta (Janhunen 1977b: 125 ? *kĭtâjâ ~ *kĭtâjâ), and TN *yesya* ‘iron’ ~ Ng *баса* < PS *wäsa (SW 175 *wesä; cf. Janhunen 1983: 120–121, Aikio 2006: 31). Such a conclusion explains the apparent disharmony of TN *ηodya* and *xidya* through the secondary merger of Proto-Samoyed non-initial *a and *ä in Proto-Nenets as *ya, for example PS *wäsa > PN *wyesya > TN *yesya* vs PS *ämä (SW 23 *emä) > PN *nyemya > TN *nyebya* ‘mother’ ~ Ng *немы* id. The retention of Proto-Samoyed non-initial *a and the parallel developments *ä > ы and *ä > y in Nganasan prove to be entirely regular as well. Other cases with a similar sound correspondence include TN *yewa* ~ Ng *дөйба* ‘orphan’, discussed above, and the Finnic loanword TN *luca* ~ Ng *люо’ca* ‘Russian’. The non-initial *a also shows an interesting alternation pattern with *i in instrumental nouns, e.g. TN *xabcyah* ‘disease, death’ < PN *kapsyaŋ < PS *kâĥpsan vs *pad^onăbcy^oh* ‘pencil’ < PN *patənnəpsyəŋ < PS *pâtəntəpsin (cf. Klumpp 2009); cf. also the low vs high vowels in Nganasan suffixes, e.g. *дөзəбси* ‘ходить’ vs *дюркəбся* ‘невод’, or *кутəди* ‘будить’ vs *барəдя* ‘ждать’, with numerous examples provided by Wagner-Nagy (2009: 114–119).

While it is true that the correct identification of Proto-Samoyed vowels require attestation in Nganasan in a number of cases, there are also fresh perspectives for internal reconstruction both in Nenets and elsewhere in Samoyed, thanks in particular to the recent work on Enets and Selkup, but further research in that direction is beyond the scope of this article. It may be added, however, that PS *ä seems to have been frequently preserved in modern Forest Enets, for instance FE *mäsi* ‘wind’ ~ TN *myercya* < PS *märkä (SW 93 *merkä), *nänag* ‘mosquito’ ~ *nyenyaŋk*^o < *nänaŋkə (SW 23 *nenäŋkə), *säj* ‘heart’ ~ *syey*^o < *säjä (SW 139 *sejä), or *tät* ‘four’ ~ *tyet*^o < *tät²tə (SW 159 *tet²tä; cf. Sorokina & Bolina 2001: 77, 81, 117, 137); cf. also Mt *hälä* ‘Hälfte, Seite, halb-’ (Helimski 1997: 242) < PS *pälä (SW 120 *pelä) etc.

The role of Nenets quantity relations

Janhunen originally recognized a system of only six vowels (in current transcription) *a a e i o u* for what he referred to as standard Tundra Nenets, plus an additional vowel *æ* confined to dialects (Janhunen 1986a: 31–32; cf. Janhunen 1984, 1993, Salminen 1993a), which also formed the basis for Proto-Samoyed vowel contrasts (Janhunen 1976; cf. Mikola 1988: 219). The earlier view was motivated by the fact that the quantity of the Tundra Nenets long high vowels *i ü* as opposed to *i u* was not always recorded accurately by Lehtisalo (1956). Nevertheless, for comparative purposes Lehtisalo’s Forest Nenets material relating to the parallel contrast between *i u* and *ĩ ü* is actually quite reliable in this respect, and even the great majority of Tundra Nenets records are sufficiently informative for establishing the contrast, as already pointed out by Helimski (1978a; cf. also Helimski 1984b [2000: 43–44], Salminen 1993b). It may be noted that Wickman (1958: 103–104) already identified a set of subminimal pairs from Lehtisalo’s data that is still perfectly valid today, i.e. in phonological transcription *pyidya* ‘Nest’ vs *pyidyē*^o ‘verscheuchen’, *pyilyo* ‘Bremse (Insekt)’ vs *pyilyucy*^o ‘sich fürchten’, *tyir* ‘Kante’ vs *tyir*^o ‘Wolke’, *sira* ‘Schnee’ vs *sira*^o ‘sich schämen’, and *pur*^o ‘Mückenfeuer’ vs *pür* ‘Rost’.

The most notable word among those whose reconstruction relies on the quantity contrast is the Samoyed numeral ‘ten’, i.e. TN *yúq* ~ FN *jüq* : gen. *jut*^o ~ TE *biu*’ ~ Ng *ōuu*” : gen. *ōuužə* ~ Sk *kōt* etc. < PS *wüət (SW 177 *wüt) < PU *wiyti (Sammallahti 1988: 541 *wit/ti) ‘five’ > Hungarian *öt* ~ Finnish *viisi* : *viiden* ~ North Saami *vihtta* : *viđa* etc. The Proto-Samoyed reconstruction was already corrected by Janhunen (1998: 476), and the Uralic etymology itself is, of course, accepted by Janhunen (1981), but it must be emphasized once again that the comparison is maximally regular and plausible, so that there are no grounds for excluding the word from Proto-Uralic lexicon, whatever preconceptions about numeral systems may exist.

Another Proto-Uralic word whose history may be updated on the basis of relevant Nenets data would be FN *ŋu-* ‘swim’ < PN *ŋü- < PS *uj- (SW 29

*u-) < PU *ujj- rather than **uyj- (cf. Sammallahti 1988: 536), which removes any irregularity from the comparison. Within Samoyed, a similar case is FN *pyu-* ‘spawn’ < PN *pyú- < PS *püj- (SW 132 *pü-). A single vowel can be unequivocally ruled out, and the respective Selkup cognates *ū-* and *pū-* (Donner & Sirelius & Alatalo 2004: 1, 61) point to the above reconstructions, cf. PS *wüät > Sk *kōt* ‘ten’ and PS *ju- > Sk *ču-* ‘melt’.

A clear case of an original complex vowel is also TN *nú-* ~ FN *nu-* < PN *nú- ‘stand’. I do not venture a reconstruction because of the initial *nj-* in Selkup, but there is no doubt that SW (104) *nu- and its derivatives *nul- and *nult¹â- are no longer valid. The inchoative TN *núl-* probably represents a truncation of an earlier stem-final vowel which still appears in Forest Nenets and Enets, and the transitive verb TN *núl^ota-* ~ FN *nul^ota-* (< *nul^opta-*) < PN *núl^opta- is trisyllabic just like the Enets cognate. There is consequently no need to assume irregularities or correlative derivatives in the development of these words in Enets.

Occasionally, a vowel sequence is posited in SW when the Nenets reflex indicates a single vowel, e.g. TN *ηuq* ‘trace, footprint’ ~ FN *ηūq* : gen. *ηūt^o* < PN *ηuq < PS *ut (SW 30 *uât). The current reconstruction is corroborated by reflexes in all other languages except Nganasan, and there the word *ηυодеа* ‘след ног’ is presumably related to *ηой* : pl *ηυо* ‘foot’ instead. In several cases, the alternative reconstruction with a vowel sequence can be immediately rejected, e.g. SW (47) *ju- (? *juâ-) ‘warm werden, weich werden, schmelzen (intr.)’ > PN *ju- > FN *jū-* ‘согрётся’ and *jupâ (? *juâpâ) ‘warm’ > PN *jupa > FN *jūpa* ‘тёплый’ (cf. Helimski 1997: 235); cf. also FN *jūta-* < PN *juta- ‘согреть’ ~ Ng *дютү-* ‘согрётся’. Similarly, in the case of the postposition TN *myu-* ~ FN *myū-* < PN *myu- < PS *mü-, the alternative *müâ (SW 96) is not required, and TN *pida-* < PN *pita- ‘resemble’ (there does not seem to be a single-word expression in Forest Nenets) does not derive from a form with *uj or *jj in the first syllable as suggested by SW (131). As for SW (131) *jujtâ-, the relationships among TN *yude* ‘Traum’ < PN *jutæ (cf. Lehtisalo 1927: 85), Sk *kūtæ* id., and Ng *дюдеем-* ‘присниться’ are irregular, but at least the Pre-Nenets form had no glide.

By contrast, all reflexes of SW (128) *pu- (? *puâj-) ‘blasen’ point to a complex vowel, cf. the derivatives TN *púq-* < PN *púq- ‘подуть’ and Ng *хуар-* ‘дуть’; the history of the sequences of the type *ya* in Nganasan is an intriguing problem, but it cannot be dwelt on here. Another example is SW (119) *pe- (? *pej-) ~ *pö- (ng) ~ *pü- (? *püj-) (ne) ‘suchen’, which shows complicated sound correspondences, but reconstructions with a single vowel should be regarded as invalid, cf. TN *pyú-* < PN *pyú- ‘search’ ~ Sk *pē-* id. ~ Ng *хуū-* ‘хотеть’; the frequentative derivative SW *per- (? *pejr-) ~ *pör- (? *pöjâjr-) (ng) ~ *pür (? *pürj-) (ne) has similar reflexes, cf. TN *pyúr-* ~ FN *pyul-* < PN *pyúr- ~ Ng *хуур-* ~ Sk *pēr-* id. In the same way, SW (161) *ti ~ *tü (? *tiw) (sk) ‘Faser, Jahresring (des Baumes)’ must be amended to account for TN *tyí* ‘Jahresring des Baumes’ ~ FN *tyí* : *tyi-* id. < PN *tyí ~ TE *cii* ‘слой древесины’ ~ Ng *чуи* id. (Helimski, personal communication) ~ Sk *tū* ‘Faser’. Janhunen continues to cite

the Proto-Samoyed reconstructions *ti and *pü- for the latter two etymologies, and even refers to TN *pyu- instead of pyú- (Janhunen 2007: 216, 221–222; cf. Salminen 1998a: 368), which has repercussions for the Proto-Uralic comparisons in question.

Also TN *myír-* ~ FN *myil-* < PN *myír- ‘build’ had a complex vowel in Proto-Samoyed (SW 95 *mir-), but its connection to TN *myí-* ~ FN *mye-* < PN *myæ- ‘make’ remains problematic, and the derivational relationship with TN *myirw*^o ~ FN *myilw*^o < PN *myirwə ~ TE *mimo* < PS *mirwə (SW *mirwə) ‘instrument’ is correlative at best. For TN *xibya* ~ FN *kyimya* < PN *kímya ‘who’ I would perhaps reconstruct PS *kijmä but in any case not a single vowel as in SW (69) *kijmä; the Enets forms with an initial sibilant would in that case reflect an early palatalization of *j before *j. The single-vowel variants in SW (102) *n’i (? *n’iā) (nsm, mt-kg) ~ *ji (? *jiw) (sk, km-kb) ‘Gürtel’ were already discarded by Janhunen (1981: 260), and the vowel in TN *nyí* < PN *nyí ‘belt’ may be added to the reasons.

Janhunen and Helimski agree on reconstructing a single vowel in the Proto-Samoyed word for ‘navel’ as *küŋ (SW 79) or *küń (Helimski 1997: 290). Many languages, however, point unequivocally to a vowel sequence, notably Ng *кииң* : gen. *кииңэ* ~ TE *śuu*’ ~ Sk *śōń* ~ *śōl*’ < PS *küń; the Kamas cognate has a low vowel which would apparently match well with this reconstruction, and there may have been a long vowel in Mator that cannot be traced from extant records. As for Nenets, my earlier phonemization of the Tundra Nenets cognate as *syuh must be regarded as an error, because both Lehtisalo’s records (Lehtisalo 1956: 452a) and consultants’ judgements indicate *syúh* instead; the same goes, of course, for the possessive verb *syúyeg-*, the caritive verb *syúncyə-*, and the comitative noun *syúncawey*^o, which have *u in Salminen (1998a). While TN *syúh* < PN *syúŋ < PS *küń would represent a perfectly regular development, the Forest Nenets word *syúŋ* nevertheless seems to have a short vowel throughout the paradigm, which can only be considered the result of analogical levelling.

The word for ‘sky, heaven, God, weather’ also seems more problematic than previously assumed. Janhunen and Helimski unanimously reconstruct *num (SW 104; Helimski 1997: 324), but this reconstruction does not explain the Selkup alternants *nom*, *nuwə-* (Donner & Sirelius & Alatalo 2004: 196) or, notably, Ng *нуум* ‘вершина’, which is traditionally but unduly excluded from the etymology. The Nenets cognates confuse the picture further, because Tundra Nenets has *num* < PN *num while at least Lehtisalo (1956: 290b) normally records FN *nŭm* : gen. *num*^o < PN *núm : *núməŋ (cf. Salminen 2005: 65–66). Moreover, at least in Forest Nenets there appears to be idiosyncratic variation in vowel quantity between dialects. I would have no problem in accepting Leisiö’s suggestion of connecting Nganasan *нуум* and its Samoyed cognates etymologically to Finnish *nummi* etc. (Leisiö 1995), as the semantic developments may be linked and a potential Proto-Uralic reconstruction would be *nuymj, even if its reflexes are not yet completely clear. According to Janhunen, the Samoyed *num ‘heaven, god’ “seems actually to derive from Khanty-Mansi” (Janhunen

2005: 25), which raises the tempting idea that the modern Samoyed words have two sources, being either inherited directly from Proto-Uralic or borrowed from a related language.

A slightly different matter is SW *kor- (73), because the Tundra Nenets word in question is actually *xoər-* ‘try’ rather than **xor-* as in Salminen (1998a: 364). Nenets vowel sequences invariably derive from intervocalic consonant loss (Salminen 1993b), and in this case the only conceivable source is the sporadic loss of *n, as shown by FN *konoł-* id. < PN **konnor-* < PS **kont'or-*, already covered by Janhunen as **kont'âjr-* (SW 72).

Another word whose vowel length is misanalyzed by Salminen (1998a) is TN *xír* (not **xir*) ‘седи́на’ related to FN *кyĩ* : *kyi-* id., first attested by Barmich & Vello (1994: 39). Having no further cognates, it is not covered by SW, but Janhunen (1977b: 125) reconstructs PS **kĩr* for it and suggests a connection to Turkic, but the current reconstruction would involve a complex vowel, probably not compatible with the loan etymology.

While the applicability of Nenets reflexes to identifying Proto-Samoyed vowel sequences is limited to high vowels, recent data from Nganasan in particular makes it possible to disambiguate between alternative reconstructions in SW. For instance, Janhunen has often anticipated a vowel sequence but nevertheless left the retrospectively correct reconstruction in parentheses, e.g. SW (28) *om- (? *oâm-) ‘sich vereinigen’ > Ng *нуом-* ‘соединить(ся)’ ~ TN *ют-* id., (38) *jât' (? *jâât') ‘Kohle (glühende)’ > Ng *доо* ‘головня, головешка; угли от костра’ ~ TN *уаг* ‘головня, уголь’, and (67) *ker (? *keâr) (?) ‘Sache’ > Ng *суар* ‘дело’ ~ TE *šie* ~ TN *syer* id. Strangely enough, Helimski (1997: 229, 328) has eliminated the vowel sequences from the reconstructions of *oâm- and *jâât', the ‘thing’ word being unattested in Mator. In the case of *jâptâ (SW 38), *kân- : *kântâ- (59), *kâptз (60), and *kêm (65), however, the removal of the alternative vowel sequence was correct (Helimski 1997: 225, 265, 282, 275–276), while he reconstructs *jêpsâ (SW 41) / *lêpsâ > Ng *лабса* ‘cradle’ with an initial *l' and an optional vowel sequence (Helimski 1997: 86). Further examples of uncalled-for vowel sequences, not attested in Mator, would include *ânsâ- (18), *kâjmâ (58), and *kâptâ- (60). By contrast, the single vowel in *kor ‘Gefäss’ (SW 74) > TN *xor* ‘бóчка’ must be replaced with a complex vowel because of Ng *куур* id. as well as (following Helimski) TE *kuu'* : *kôôro-* ‘ящик’; according to Donner & Sirelius & Alatalo (2004), the superficially similar words in Selkup (notably № 2262 and № 2271) do not share the same etymology; cf. also Janhunen (1977b: 123) and Anikin & Helimski (2007: 74–75).

The fact that the accusative plural of TN *syer* is invariably *syero* (Janhunen 1986a: 147, Salminen 1998a: 349) continues to cause puzzlement because the default form on the basis of the phonological structure of the word would rather be **syerye* (cf. Salminen 1997: 72–73). The inflection of Ng *суар* expectedly shows no trace of original back vowels (Zhdanova & Kosterkina & Momde 2001), and an original vowel sequence does not appear to trigger non-palatalty in Nenets either, cf. TE *mie'* ‘вид, качество’ ~ TN *myír* ‘фигура, форма’ : poss.

3sg *myírtya* (Tereshchenko 1965: 257), while for *syer* only *syerta* rather than **syertya* is in use.

In modern Nenets there would appear to be a regular derivational relationship between TN *xa-* ‘die’ : *xada-* ‘kill’ ~ FN *ka-* : *kata-* < PN **ka-* : **kata-*. There is probably no principled objection to a synchronic description of the kind, but the respective Nganasan cognates *кyо-* : *комy-* specify the exact Proto-Samoyed reconstructions as **kãā-* : **kâtã-* just as in SW (56–57) except for a parenthetical variant ? **kãâtã-*, already rejected by Janhunen (2007: 222), for the latter. To explain the diachronic basis of the derivational relationship, I would follow Aikio’s suggestion (personal communication) that **kâtã-* comes from Proto-Uralic **kay̥ta-* ‘kill’, correlative to **kay̥li-* ‘die’ and subject to syncope in Pre-Finnic but not in Pre-Samoyed, because PU ***kay̥ta-* would rather yield PS ***kãâtã-* instead. Consequently, Samoyed ‘kill’ is indeed to be regarded as cognate to northern Finnic *kaata-*, because the phonological match turns out to be exact and it is plausible enough to regard the current primary meaning ‘fell’ as actually deriving from what has alleged to be figurative usage (such as *kaataa riistaa* or *kaatua sodassa*; cf. Hakulinen 1969: 50–51, Janhunen 2007: 222).

Concluding remarks

Janhunen derived the reconstructions of the Proto-Samoyed first-syllable single vowels from their allegedly straightforward reflexes in Tundra Nenets, with few qualitative or quantitative changes besides the phonological translocation of palatality to preceding consonants, which, however, had only minimal phonetic effect (Janhunen 1976: 183). This resulted in the well-known 11-unit system of SW, widely employed thereafter and initially adopted by Helimski as well. However, after Helimski’s further work on Nganasan in particular (Helimski 1993 [2000]; Helimski 2005) compelling reasons have emerged for adopting a revised system of 13 units, consisting of 11 full and 2 reduced vowels (cf. Helimski 2005: 37):

<i>*i</i>	<i>*ü</i>	<i>*j</i>	<i>*u</i>
<i>*e</i>	<i>*ö</i>	<i>*e̥</i>	<i>*o</i>
<i>*ä</i>		<i>*a</i>	<i>*ã</i>
<i>*ə</i>		<i>*â</i>	

Furthermore, the distribution of Proto-Samoyed vowels in non-initial syllables as well as various details concerning the sound changes from the proto-language to the modern Samoyed languages were to a large extent clarified and refined through Helimski’s efforts. Much work remains to be done in this particular field, but the perspectives are highly promising in view of the recent influx of data on the most severely understudied Samoyed languages.

My aim in this article has been to show that Nenets historical phonology offers ample evidence for the expansion of the Proto-Samoyed vowel system, and

in my view the 13-unit system should become the established basis for further explorations. The current system has consequently undergone two mergers in Pre-Nenets, i.e. * \hat{a} and * \hat{a} (both * \hat{a} in SW) have only * \hat{a} as their Proto-Nenets reflex, and * i and * e (both SW * i) merge into * i . The change * $e > *i$ caused a chain shift in Pre-Nenets, whence Proto-Samoyed * \hat{a} (SW * e) > * e , * a (SW * \hat{a}) > * \hat{a} , and * $\hat{a} > *a$ (acknowledged as a phonetic change by Janhunen), or in the other direction * $i < *e < *a < *a$. The front vowels in the resulting system were then subject to the Proto-Nenets translocation of palatality, which gives the following correspondences between Proto-Samoyed and modern Tundra Nenets, identical with Proto-Nenets in this respect:

* $i > yi$	* $\hat{u} > yu$	* $\hat{i} > i$	* $u > u$
* $e > yi$	* $\hat{o} > yo$	* $\hat{e} > e$	* $o > o$
* $\hat{a} > ye$		* $a > ya$	* $\hat{a} > a$
* $\hat{a} > \hat{a}$		* $\hat{a} > \hat{a}$	

The above-mentioned revisions and correspondences are generally valid for initial syllables. In non-initial syllables the harmonic relationship between * \hat{a} and * \hat{a} holds as in SW, despite other changes in the reconstruction of non-initial vowels as discussed above. Incidentally, Helimski employed * e instead of Janhunen's * \hat{a} in non-initial syllables, but this practice has now become obsolete since the earlier * e was replaced with * \hat{a} in general. For example, we now have the uncontested reconstructions * $\hat{a}j\hat{m}\hat{a}$ 'needle' and * $\hat{p}\hat{a}l\hat{a}$ 'half, part' without need to recourse to SW * $ejm\hat{a}$ and * $pel\hat{a}$ or Helimski-style * $ejme$ and * $pele$ (Helimski 1997: 242, 253). Similarly, both authors' one-time substitution of SW * \hat{a} with * a has become moot, so that current reconstructions do not depart from SW in this respect. For instance, * $k\hat{a}l\hat{a}$ 'fish' (Helimski 1997: 273 * $kale$) and * $\hat{p}\hat{a}rk\hat{a}$ 'parka' (Helimski 1997: 240 * $\hat{p}arka$) continue to be valid notations.

Abbreviations

FE Forest Enets	PS Proto-Samoyed
FN Forest Nenets	PU Proto-Uralic
Km Kamas	Sk Selkup
Mt Mator	TE Tundra Enets
Ng Nganasan	TN Tundra Nenets
PN Proto-Nenets	

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