

## Appendix C:

### The Development of the Finno-Saamic Vowels

The FS (= Finno-Saamic) stems and inflectional forms illustrating the changes in PS (= Proto-Saamic) are \**kūli-* 'to hear', \**muna*, \**munajta* 'egg, NomSg, PartPl', \**sūli* 'lap', \**kilpi* 'shielding object', \**pīri* 'surroundings', \**nōli* 'arrow', \**kosŋi-* 'to touch', \**meni-*, \**menijim* 'to go, stem, Sg1Pret', \**kēli*, \**kēlisin* 'language, NomSg, IllSg', \**velji* 'brother', \**kota*, \**kotami* 'dwelling, NomSg+Sg1Px', \**kesä*, \**kesäsin* 'summer, NomSg, IllSg', \**toro-*, \**torojim* 'to quarrel, stem, Sg1Pret', \**kejno* 'way', \**appi* 'father-in-law', \**kāti* 'hand; arm', \**kala*, \**kalajta* 'fish, NomSg, PartPl', \**äjmä* 'needle', \**vanča-* 'to walk', \**päjävä* 'day; sun':

FS:	* <i>kūli-</i>	* <i>muna</i> * <i>munajta</i>	* <i>sūli</i>	* <i>kilpi</i>	* <i>pīri</i>
	* <i>nōli</i>	* <i>kosŋi-</i>		* <i>meni-</i> * <i>menijim</i> * <i>velji</i>	* <i>kēli-</i> * <i>kēlisin</i>
		* <i>kota</i> * <i>kotami</i> * <i>toro-</i> * <i>torojim</i>		* <i>kesä</i> * <i>kesäsin</i> * <i>kejno</i> * <i>kejnosing</i>	
		* <i>appi</i> * <i>kala</i> * <i>kalajta</i> * <i>vanča-</i>		* <i>kāti</i> * <i>äjmä</i> * <i>päjävä</i>	

#### Finno-Saamic > Pre-Saamic

(1)	* <i>V - o</i>	>	* <i>V - o</i>	* <i>toro-</i> * <i>kejno</i>	>	* <i>toro-</i> * <i>kejno</i>
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The exact phonetic value of the second syllable round vowel (arisen originally through \*-*aw* > \*-*o*) is not known. This change is posited to explain the metaphonic effect of FS second syllable \**o* which is similar to the low vowels \**a* and \**ä*.

(2)	* <i>V - ä</i>	>	* <i>V - a</i>	* <i>äjmä</i> * <i>kesä</i>	>	* <i>äjma</i> * <i>kesa</i>
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The disappearance of vowel harmony through this change may have happened later (during PS 1). If one wants to keep the Pre-Saamic changes to a minimum, then this change should be transferred to early Proto-Saamic.

(3)	* <i>ü</i>	>	* <i>i</i>	* <i>sūli</i>	>	* <i>sili</i>
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The delabialization of FS \**ü* (into \**i*) is probably one of the Pre-Saamic changes but its relative chronology is not critical. It is likely, however, that (3) happened before the following changes (4) and (5) which coalesced FS \**i*, \**e* and \**ü* into \**e̘* before second syllable \**i*.

(4)	* <i>i</i>	>	* <i>e̘</i>	* <i>kilpi</i> * <i>sili</i>	>	* <i>kelp̘e̘</i> * <i>sel̘e̘</i>
	* <i>u</i>	>	* <i>o̘</i>	* <i>muna</i>	>	* <i>mon̘a</i>
(5)	* <i>e - e̘</i>	>	* <i>e̘ - e̘</i>	* <i>men̘e̘-</i>	>	* <i>men̘e̘-</i>

sporadically also:

$*e - \underset{\cdot}{e}$	$\mathcal{E}$		$(*velj\underset{\cdot}{e} \mathcal{E})$		
$*o - \underset{\cdot}{e}$	>	$*\underset{\cdot}{o} - \underset{\cdot}{e}$	$*kolm\underset{\cdot}{e}$	>	$*kolm\underset{\cdot}{e}$

The sporadic cases in (5) comprise a few stems, e.g. FS  $*velji$  > sN *viellja* 'brother' (cf Finnish *velje*- id.), FS  $*šelki-$  > sN *čielggas* 'clear' (cf Finnish *selkeä* id.), FS  $*kevdi$  > sI *kievđâ* 'rope' (cf Finnish *köysi* id.), FS  $*levli$  > sN *lievla* 'vapor' (cf Finnish *löyly* id.), FS  $*kolmi$  > sN *golbma* 'three' (cf Finnish *kolme* id.), FS  $*joki$  > sN *johka* 'river' (cf Finnish *joki* id.). Note that the changes  $*e - \underset{\cdot}{e}$  >  $*\underset{\cdot}{e} - \underset{\cdot}{e}$  (regular; FS  $*meni-$  > sN *manna-* 'to go') and  $*o - \underset{\cdot}{e}$  >  $*\underset{\cdot}{o} - \underset{\cdot}{e}$  (sporadic; FS  $*joki$  > sN *johka* 'river') represent symmetrical development as do the retentions  $*e - \underset{\cdot}{e} \mathcal{E}$  (sporadic; FS  $*velji$  > sN *viellja* 'brother') and  $*o - \underset{\cdot}{e} \mathcal{E}$  (regular; FS  $*kosji-$  > sN *guoska-* 'to touch').

(6)	$*o - a$	>	$*o - a$	$*kota$	>	$*ko\grave{a}$
	$*o - o$	>	$*o - o$	$*toro-$	>	$*to\grave{o}-$
	$*e - a$	>	$*\varepsilon - a$	$*kesa$	>	$*ke\grave{s}a$
				$*pejva$	>	$*pej\grave{v}a$
	$*e - o$	>	$*\varepsilon - o$	$*kejno$	>	$*kej\grave{n}o$

The metaphonic changes (5 – 6) seem to explain why the Proto-Germanic loanwords with the vowel combination  $*e - a$  (such as sN *gieggi* 'wooden shoe under the runner of a sledge' < PS  $*kie\grave{n}g\grave{e}$  < Proto-Germanic  $*skenka-$ , cf Swedish *skinka* 'ham') show PS  $*ie$  instead of PS  $*ea$ . The lowered vowels  $*\varepsilon$  and  $*o$  developed into PS diphthongs  $*ea$  and  $*oa$ , respectively. These diphthongs were substituted with Finnish *e* and *o* even in recent loans (e.g. the place name elements *Soka-* from Saami *soahki* 'birch' and *Pessa-* from Saami *beas'si* 'birch bark'); especially for Finnish *a/ä/o/u*-stems the substitution pattern has been the same in the opposite direction as well (e.g. Finnish *kerjätä* 'to beg', *sohti* 'war', *hoppu* 'hurry' > Saami sN *gearjiddit*, *sohti*, *hoahppu* id.). There is a group of exceptions to this change (as well as to gradation) in North Saami: *belá* (EE /*pelaar*/) 'cousin' < FS  $*pelä$  'half' (cf sN *-bealli* id. in *oambealli* 'female cousin', *vilbealli* 'male cousin'), *egá* 'older paternal uncle' < FS  $*ekä$  id. (cf sN *eahki* id.), *čezá* 'younger paternal uncle' < FS  $*šečä$  id. (cf sN *čeahci* id.), *njolá* 'kitchen spatula' < FS  $*ńola-$  '(to) lick' (cf sN *njoallu-* 'to lick'). The background of these words is unclear; to the same type belongs also *imá* 'uncle's wife' < FS  $*imä$  (cf sN *ipmi* id.).

Pre-Saamic:	$*k\grave{u}l\underset{\cdot}{e}-$			$*p\grave{i}r\underset{\cdot}{e}$
		$*m\grave{o}na$	$*s\underset{\cdot}{e}l\underset{\cdot}{e}$	
		$*m\grave{o}najta$	$*k\underset{\cdot}{e}l\underset{\cdot}{p}\underset{\cdot}{e}$	
			$*m\underset{\cdot}{e}n\underset{\cdot}{e}-$	
			$*m\underset{\cdot}{e}n\underset{\cdot}{e}j\underset{\cdot}{e}m$	
	$*n\grave{o}l\underset{\cdot}{e}$	$*kos\eta\underset{\cdot}{e}-$	$*velj\underset{\cdot}{e}$	$*k\underset{\cdot}{e}l\underset{\cdot}{e}$
				$*k\underset{\cdot}{e}l\underset{\cdot}{e}s\underset{\cdot}{e}n$
		$*kota$	$*kesa$	
		$*kotame$	$*kesas\underset{\cdot}{e}n$	
		$*toro-$	$*kejno$	
		$*toroj\underset{\cdot}{e}m$	$*kejn\underset{\cdot}{o}s\underset{\cdot}{e}n$	
		$*appe$	$*k\underset{\cdot}{a}t\underset{\cdot}{e}$	
		$*kala$	$*\underset{\cdot}{a}jma$	
		$*kalajta$	$*p\underset{\cdot}{a}jva$	
		$*vanca-$		

## Pre-Saamic > Proto-Saamic 2

- (1)  $*a - e$  >  $*\bar{o} - e$   $*app\grave{e}$  >  $*\bar{o}pp\grave{e}$   
 $*\bar{a} - e$  >  $*\bar{e} - e$   $*k\grave{a}t\grave{e}$  >  $*k\bar{e}\grave{t}\grave{e}$

(1) seems to be a metaphonic change in line with the Pre-Saamic changes (5 – 6). Whether the outcome of the change was a long or a short vowel is not clear, and both alternatives would have given the same PS 5 result.

- (2)  $*a - a$  >  $*\bar{o} - a$   $*kala$  >  $*k\bar{o}la$   
 sporadically also:  
 $*a - a$   $\text{Æ}$   $*vanca - \text{Æ}$

The change  $*a - a > *\bar{o} - a$  (> sN *uo-i*) happened after the (Germanic-induced) Finnic change  $*\check{s} > *s$ . It has affected Proto-Indo-European (FS  $*aja-$  >> sN *vuodji-* 'to drive', cf Finnish *aja-* id.), Proto-Aryan (FS  $*\acute{s}ata$  >> sN *čuohti* 'hundred', cf Finnish *sata* id.), Proto-Baltic (FS  $*\check{s}alna$  >> sN *suoldni* 'dew; night-frost', cf Finnish *halla* 'night-frost'), Proto-Germanic (FS  $*\check{s}av\delta a$  >> sN *suovdi* 'gill', cf Finnish *hauta* 'grave') and some early Proto-Finnic loanwords (Early Saamic  $*pa\check{s}a$  >> sN *buošši* 'angry', cf Finnish *paha* 'vicious'). The change can be traced in Finnish place names of Saami origin: *Lompero* (cf sN *luoppal* 'river lake' < PS  $*luom\check{v}el$  < FS  $*lampi-$  > Fi. *lampi* 'bond'), *Kokko* (cf sN *guotkku* 'isthmus' < FS  $*katkoj$  > Fi. *katko* 'break'). This means that an early Saami idiom with the same innovations as in the rest of the Saami area was spoken in Central and Southern Finland.

- (3)  $*\bar{a} - a$  >  $*a - a$   $*\grave{a}jma$  >  $*aj\grave{m}a$   
 sporadically also:  
 $*\bar{a} - a$  >  $*\varepsilon - a$   $*p\grave{a}jva$  >  $*pej\grave{v}a$

PS 2:  $*k\bar{u}l\grave{e}-$   $*p\bar{i}r\grave{e}$

	$*m\grave{o}n\grave{a}$	$*s\grave{e}l\grave{e}$
	$*m\grave{o}n\grave{a}jta$	$*k\grave{e}l\grave{p}\grave{e}$
		$*m\grave{e}n\grave{e}-$
		$*m\grave{e}n\grave{e}j\grave{e}m$
$*n\bar{o}l\grave{e}$	$*k\bar{o}š\eta\grave{-}$	$*v\grave{e}l\grave{j}\grave{e}$
$*\bar{o}pp\grave{e}$		$*k\bar{e}l\grave{e}sen$
$*k\bar{o}la$		$*k\bar{e}t\grave{e}$
$*k\bar{o}l\grave{a}jta$		
	$*k\bar{o}i\grave{a}$	$*k\bar{e}š\grave{a}$
	$*k\bar{o}i\grave{a}m\grave{e}$	$*k\bar{e}š\grave{a}sen$
	$*t\bar{o}r\bar{o}-$	$*k\bar{e}j\grave{n}\bar{o}$
	$*t\bar{o}r\bar{o}j\grave{e}m$	$*k\bar{e}j\grave{n}\bar{o}sen$
		$*pej\grave{v}a$
	$*v\grave{a}nca-$	
	$*aj\grave{m}a$	

## Proto-Saamic 2 > Proto-Saamic 3

- (1)  $*VV$  >  $*V$   $*k\bar{u}l\grave{e}$  >  $*k\bar{u}l\grave{e}$   
 [+high]  $*p\bar{i}r\grave{e}$  >  $*p\bar{i}r\grave{e}$

This change can be traced in Finnish place names of Saami origin: both the unshortened high vowel in PS 2 and the shortened high vowel in PS 3 are reflected in such names as *Kuukasjärvi* ~ *Ku(k)kasjärvi* < PS 2  $*k\bar{u}k\bar{a}s\grave{j}\bar{a}vr\bar{a}$  ~ PS 3  $*k\bar{u}k\bar{k}\bar{a}s\grave{j}\bar{a}vr\bar{a}$  'long lake' (cf sN *guhķes*

*jávri* id.). The reflexes of the unshortened vowel *\*ū* (*Kuukasjärvi*) are found on the southern fringes of the medieval Saami area between in Ranua, Kuusamo and Kiestinki (and one instance in Suojärvi north of the Lake Ladoga).

- |     |                                     |   |            |  |                   |   |                   |
|-----|-------------------------------------|---|------------|--|-------------------|---|-------------------|
| (2) | <i>*V</i><br>[-high]                | > | <i>*VV</i> |  | <i>*koš̄ŋe-</i>   | > | <i>*kōš̄ŋe-</i>   |
|     |                                     |   |            |  | <i>*vel̄je</i>    | > | <i>*vēl̄je</i>    |
|     |                                     |   |            |  | <i>*kōlā</i>     | > | <i>*kōlā</i>      |
|     |                                     |   |            |  | <i>*tōro-</i>    | > | <i>*tōrō-</i>     |
|     |                                     |   |            |  | <i>*keš̄ā</i>     | > | <i>*kēš̄ā</i>     |
|     |                                     |   |            |  | <i>*pējvā</i>    | > | <i>*pējvā</i>     |
|     |                                     |   |            |  | <i>*kējno</i>    | > | <i>*kējnō</i>     |
|     |                                     |   |            |  | <i>*vānca-</i>   | > | <i>*vān̄zā-</i>   |
|     |                                     |   |            |  | <i>*ājma</i>     | > | <i>*āj̄mā</i>     |
| (3) | <i>*ō</i>                           | > | <i>*u</i>  |  | <i>*tōrōjem</i>   | > | <i>*tōrujem</i>   |
|     | (before third syllable <i>*-e</i> ) |   |            |  | <i>*kēj̄nōsen</i> | > | <i>*kēj̄nusēn</i> |

Inari, Skolt and Akkala Saami (i.e. the continental group of the East Saami languages) have restored the *\*ō* in those cases where *\*u* is a non-contracted vowel (eg. sSk *kuārram* '[having] sewn; sewing', cf sN *gōrron* '[having] sewn' vs. *goarrun* 'sewing' < PS *\*koar̄umē* vs. *\*koa-rōmē*).

- |     |   |   |           |  |                 |   |                 |
|-----|---|---|-----------|--|-----------------|---|-----------------|
| (4) | <i>*ā</i>                                   | > | <i>*i</i> |  | <i>*mōnājtā</i> | > | <i>*mōnijtā</i> |
|     | (in the second syllable before <i>*-j</i> ) |   |           |  |                 |   |                 |

This change is independent of the quality of the vowel in the next syllable and seems to have happened before PS 3 (2) which changes lateral (and marginal) *\*ā* to *\*ē* except before next syllable *\*e* (> PS 4 *\*e*).

PS 3:	<i>*kul̄e-</i>	<i>*pir̄e</i>
	<i>*mōnā</i>	<i>*sel̄e</i>
	<i>*mōnijdā</i>	<i>*kel̄be</i>
		<i>*mē̄ne-</i>
		<i>*mē̄nejem</i>
	<i>*nōl̄e</i>	<i>*kēl̄e-</i>
	<i>*kōš̄ŋe-</i>	<i>*kēl̄esen</i>
	<i>*ōppe</i>	<i>*kēte</i>
	<i>*kōlā</i>	<i>*vel̄je</i>
	<i>*kōlijdā</i>	
	<i>*kōlā</i>	<i>*kēš̄ā</i>
	<i>*kōtāme</i>	<i>*kēš̄āsen</i>
	<i>*tōrō-</i>	<i>*kēj̄nō</i>
	<i>*tōrujem</i>	<i>*kēj̄nusēn</i>
		<i>*pēj̄vā</i>
	<i>*vān̄zā-</i>	
	<i>*āj̄mā</i>	

**Proto-Saamic 3 > Proto-Saamic 4:**

(1)	$*e$	>	$*e$	$*se\grave{l}e$	>	$*se\grave{l}e$
				$*kel\grave{b}e$	>	$*kel\grave{b}e$
				$*me\grave{n}e-$	>	$*me\grave{n}e-$
				$*kul\grave{e}-$	>	$*kul\grave{e}-$
				$*pi\grave{r}e$	>	$*pi\grave{r}e$
				$*no\grave{l}e$	>	$*no\grave{l}e$
				$*ko\grave{s}\eta e-$	>	$*ko\grave{s}\eta e-$
				$*o\grave{p}pe$	>	$*o\grave{p}pe$
				$*ke\grave{t}e$	>	$*ke\grave{t}e$
				$*ke\grave{l}e$	>	$*ke\grave{l}e$

This change starts the process by which FS high front *\*i* becomes the sN low back vowel *a* at the end. Fairly recent loanwords such as sN *haddi* 'price' (from Finnish *hinta* id.) submit to the correspondance pattern (Finnish *i* ~ [North] Saami *a*) established by this process.

(2)	$*V - \bar{a}$	>	$*V - \bar{e}$	$*mo\grave{n}\bar{a}$	>	$*mo\grave{n}\bar{e}$
	(except before third syllable $*e$ )			$*ko\grave{l}\bar{a}$	>	$*ko\grave{l}\bar{e}$
				( $*ko\grave{t}\bar{a}me$ CE)		
				$*ke\grave{s}\bar{a}$	>	$*ke\grave{s}\bar{e}$
				( $*ke\grave{s}\bar{a}sen$ CE)		
				$*pe\grave{j}v\bar{a}$	>	$*pe\grave{j}v\bar{e}$
				$*va\grave{n}\grave{z}\bar{a}-$	>	$*va\grave{n}\grave{z}\bar{e}-$
				$*a\grave{j}m\bar{a}$	>	$*a\grave{j}m\bar{e}$

This change creates the basis for the common *i* ~ *á* alternation in North Saami, eg. *guollin* 'fish Ess' ~ *guollán* 'fish NomSg+ Sg1Px'.

PS 4:	$*kul\grave{e}-$		$*pi\grave{r}e$
	$*mo\grave{n}\bar{e}$	$*se\grave{l}e$	
	$*mo\grave{n}ij\bar{d}\bar{e}$	$*kel\grave{b}e$	
		$*me\grave{n}e-$	
		$*me\grave{n}\bar{i}m$	
	$*no\grave{l}e$		$*ke\grave{l}e$
	$*ko\grave{s}\eta e-$		$*ke\grave{l}e\grave{s}en$
	$*o\grave{p}pe$		$*ke\grave{t}e$
	$*ko\grave{l}\bar{e}$		$*ve\grave{l}je$
	$*ko\grave{l}ij\bar{d}\bar{e}$		
	$*ko\grave{l}\bar{e}$		$*ke\grave{s}\bar{e}$
	$*ko\grave{t}\bar{a}me$		$*ke\grave{s}\bar{a}n$
	$*to\grave{r}\bar{o}-$		$*ke\grave{j}n\bar{o}$
	$*to\grave{r}\bar{u}m$		$*ke\grave{j}n\bar{u}sen$
			$*pe\grave{j}v\bar{e}$
	$*va\grave{n}\grave{z}\bar{e}-$		
	$*a\grave{j}m\bar{e}$		

**Proto-Saamic 4 > Proto-Saamic 5:**

(1)	$*e$	>	$*e$	$*me\grave{e}$	>	$*me\grave{e}$ -
				$*se\grave{e}$	>	$*se\grave{e}$
				$*kel\grave{e}$	>	$*kel\grave{e}$
				$*kule-$	>	$*kule-$
				$*pi\grave{e}$	>	$*pi\grave{e}$

The lateral short non-high vowel is practically a mid vowel in South, Ume, Skolt, Kildin and Ter Saami, and most of the Inari Saami instances come close to a mid vowel.

(2)	$*\bar{o}$	>	$*uo$	$*n\bar{o}\grave{e}$	>	$*nu\bar{o}\grave{e}$
				$*k\bar{o}\grave{s}\eta\grave{e}$	>	$*ku\bar{o}\grave{s}\eta\grave{e}$ -
				$*\bar{o}p\grave{p}\grave{e}$	>	$*vu\bar{o}h\grave{p}\grave{e}$
				$*k\bar{o}\bar{e}$	>	$*ku\bar{o}\bar{e}$
	$*\bar{o}$	>	$*oa$	$*k\bar{o}\bar{e}$	>	$*ko\bar{a}\bar{e}$
				$*t\bar{o}r\bar{o}$	>	$*to\bar{a}r\bar{o}$
	$*\bar{e}$	>	$*ie$	$*k\bar{e}\grave{e}$	>	$*kie\grave{e}$
				$*k\bar{e}\grave{e}$	>	$*kie\grave{e}$
				$*v\bar{e}l\grave{j}\grave{e}$	>	$*vie\grave{l}\grave{j}\grave{e}$
	$*\bar{e}$	>	$*ea$	$*k\bar{e}\grave{s}\bar{e}$	>	$*ke\bar{a}\grave{s}\bar{e}$
				$*p\bar{e}\grave{j}\bar{v}\bar{e}$	>	$*pe\bar{a}\grave{j}\bar{v}\bar{e}$
				$*k\bar{e}\grave{j}\bar{n}\bar{o}$	>	$*ke\bar{a}\grave{j}\bar{n}\bar{o}$

Diphthongization of non-low long vowels is common to all Saami idioms and has to be reconstructed for the protolanguage. This change created four pairs of short and long in the vowel center and establishes a three-degree vowel height system instead of the five-degree one in PS 3-4. The relatively late diphthongizations in northern Finnic languages (eg. Finnish *kieli* ~ Estonian *keel* 'language', Finnish *nuoli* ~ Estonian *nool* 'arrow') seem to be reflexes of the older Proto-Saami diphthongization. In Savo and Karelia where the Saami inhabitation persisted longer than in central and western Finland, also the long low vowels were diphthongized as an indication of Saami linguistic substratum in these areas (e.g. Savo *peä* ~ standard Finnish *pää* 'head', Savo *moa* ~ standard Finnish *maa* 'earth, land').

(3)	$*V - \bar{e}$	>	$*V - \bar{e}$	$*k\bar{o}\bar{e}$	>	$*ko\bar{a}\bar{e}$
				$*p\bar{e}\grave{j}\bar{v}\bar{e}$	>	$*pe\bar{a}\grave{j}\bar{v}\bar{e}$
				$*v\bar{a}\grave{n}\grave{z}\bar{e}$	>	$*v\bar{a}\grave{n}\grave{z}\bar{e}$
				$*\bar{a}\grave{j}\bar{m}\bar{e}$	>	$*\bar{a}\grave{j}\bar{m}\bar{e}$

This change is based solely on the fact that the reflexes of lateral  $*\bar{o}$  are in many cases lower than the reflexes of lateral  $*\bar{e} > *e$  (and in some idioms coincide with the reflexes of  $*\bar{a}$ ). In most idioms the reflexes of PS 4  $*\bar{e}$  and  $*\bar{o}$  are of the same height and the PS 5 lateral long front vowel could also have been  $*\bar{e}$ .

PS 5:	<i>*kule-</i>	<i>*nuole</i> <i>*kuosøŋe-</i> <i>*vuohpe</i> <i>*kuole</i> <i>*kuolijde</i>		<i>*kiele</i> <i>*kielēsēn ~ *kielīn</i> <i>*kiete</i>	<i>*pire</i>
	<i>*moñe</i> <i>*monijde</i>	<i>*koale</i> <i>*koatame</i> <i>*toarō-</i> <i>*toarūm</i>	<i>*kelbe</i> <i>*selē</i> <i>*meñe-</i> <i>*meñim</i>	<i>*keasē</i> <i>*keasān</i> <i>*keajno</i> <i>*keajnusēn ~ *keajnūn</i>	
		<i>*ajme</i> <i>*vanžē-</i>			

**Proto-Saamic > Proto-North-Saami:**

(1)	<i>*uo</i>	>	<i>*ū</i> / $\_C V$ [+high]	<i>*kuolijde</i>	>	<i>*kūlijd</i>
	<i>*oa</i>	>	<i>*ō</i> / $\_C V$ [+high]	<i>*toarūm</i>	>	<i>*tōrrum</i>
	<i>*ie</i>	>	<i>*ī</i> / $\_C V$ [+high]	<i>*kielīn</i>	>	<i>*kīlli</i>
	<i>*ea</i>	>	<i>*ē</i> / $\_C V$ [+high]	<i>*keajnūn</i>	>	<i>*kējnu</i>

These double (= long) vowels were shortened in various ways after Proto-North-Saami. All the dialects show shortening before *\*hC* (eg. *\*čuhpim* > EE /čuh'pen/ 'I cut') and all but the westernmost dialect have shortened the non-low monophthongs before other third-quantity consonant centers (eg. *\*vūlgim* > EE /vul'ken/ 'I left'). The Guovdageaidnu dialect has shortened the non-low monophthongs also before second-quantity consonant clusters beginning with /v/ or /j/ (eg. *\*ōjnnij* > Gg /ojnnii/ 'he saw', *\*rūvddijd* > Gg /ruvttiit/ 'irons').

(2)	<i>*û</i>	>	<i>*u</i>	<i>*keajnūn</i>	>	<i>*kējnu</i> > <i>geidnui</i>
	<i>*î</i>	>	<i>*i</i>	<i>*kielīn</i>	>	<i>*kīlli</i> > <i>gīlli</i>
	<i>*ê</i>	>	<i>*ē</i>	<i>*vanžē</i>	>	<i>*vāžžē</i> > <i>vázzi</i> 'walker'
	<i>*ô</i>	>	<i>*ō</i>	<i>*toarō</i>	>	<i>*toarō</i> > <i>doar'ru</i> 'fighter'
	<i>*â</i>	>	<i>*ā</i>	<i>*keasān</i>	>	<i>*keassā</i> > <i>geassái</i>

The contracted vowels coincided with the corresponding non-contracted vowels in most cases. In some categories, the contracted vowels *\*ô* and *\*ê* coincided with the nearest short non-contracted vowel (from Ume to North Saami), eg. PS 5 *\*poatēn* > PNS *\*pōhtin* (modern *bōhte*) 'we (Du) come' (cf sI *puát'teen* id. which reflects *\*ē*), PS 5 *\*poatēk* > PNS *\*pōhtik* (modern *bōhtet*) 'they (Pl) come' (cf sI *puát'ih* id. which reflects *\*ē*), PS 5 *\*toarōn* > NS *\*tōrrun* (modern *dōrro*) 'we (Du) fight' (cf sI *tuár'roon* id. which reflects *\*ō*), PS 5 *\*toarōk* > PNS *\*tōrruk* (modern *dōrrot*) 'they (Pl) fight' (cf sI *tuáruh* id. which reflects *\*ō*). The effects of contracted vowels on the preceding consonant center vary: in Skolt Saami, single consonants have been geminated before most contracted vowels whereas in North Saami gemination occurs mostly in cases where the disappeared consonant was part of the stem: sSk *kuát'ta* (geminated) vs. sN *goahtái* (non-geminated) 'hut IllSg' (the disappeared consonant belonged to the illative suffix: FS *\*kota-sin*) but sSk *suōl'lu* vs. sN *sul'lot* (both geminated) 'island NomPl' (the disappeared consonant belonged to the stem: FS *\*saloj-i-t* where *-i-* is an epenthetic vowel between the stem and the suffix).

(3)	<i>*e</i>	>	<i>*a</i>	<i>*kiele</i>	>	<i>*kiella</i>
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North Saami shares the lowering of lateral *\*e* to *\*a* with Inari, Lule and Pite Saami. In the vowel center there was a *\*e* ~ *\*a* variation (with *\*e* before the lateral high short vowels *\*i* and *\*u*) which was productive in the eastern Finnmark dialects in the beginning of the 20th century (e.g. /*nââmma*/ 'name' ~ /*neemmij*/ id. IllSg). Relic forms of this alternation are found in the rest of the dialects (e.g. *desto*, standard *dasto* 'then'). The present North Saami reflex of PS *\*e* is (standard) *a*, e.g. PS *\*nemē* > sN *namma* 'name').

(4)	<i>*ʒʒ - ē</i>	>	<i>*ʒʒ - i</i>	<i>*vānzēk</i>	>	<i>*vāʒʒi</i> 'walk!'
	<i>*ʒʒ - ō</i>	>	<i>*ʒʒ - u</i>	<i>*toarôk</i>	>	<i>*tōaru</i> 'fight!'
	<i>*ʒʒ - ā</i>	>	<i>*ʒʒ - a</i>	<i>*keasā</i>	>	<i>*kěassq</i> 'he pulls'

As a productive morphophonological process, the allegro shortening in (4) is confined to North Saami, but there are traces of a similar shortening in South and Lule Saami (eg. sS *göökte* ~ *guektie* 'two' < PS 5 *\*kuokti* ~ *\*kuoktē*, cf sN *guokte* ~ *guokti* id.). Also Inari Saami has shows a shortening in words consisting of two or more breath groups, e.g. *vääri* 'hill' + *čokke* 'top' > *väričokke* 'hill top, peak'.

### Present North Saami:

<i>gullat</i> 'to hear'	<i>njuolla</i> 'arrow'	<i>giella</i> 'language'	<i>birra</i> 'around'
	<i>guoskat</i> 'to touch'	<i>gillii</i> 'language IllSg'	
	<i>vuohppa</i> 'father-in-law'	<i>giehta</i> 'hand; arm'	
	<i>guolli</i> 'fish'	<i>viellja</i> 'brother'	
	<i>gūliid</i> 'fish AccPl'		
<i>monni</i> 'egg'	<i>goahti</i> 'hut'	<i>geassi</i> 'summer'	
<i>moniid</i> 'egg AccPl'	<i>goahtán</i> 'my hut'	<i>geassái</i> 'for the summer'	
	<i>doarrut</i> 'to fight'	<i>beaivi</i> 'day; sun'	
	<i>dōrron</i> 'I fought'	<i>geaidnu</i> 'way'	
		<i>geidnui</i> 'to the way'	
	<i>galba</i> 'shielding object'	<i>áibmi</i> 'triangular skin needle'	
	<i>salla</i> 'bosom'	<i>vázzit</i> 'to walk'	
	<i>mannat</i> 'to go'		
	<i>mannen</i> 'I went'		