

Tuomas Koukkari Giellagas Institute, University of Oulu Congressus XIII Internationalis Fenno-Ugristarum Vienna, 24.08.2022

Earlier Works

- Äimä 1918: IS phonetics and phonology
- Itkonen 1939, 1971, etc.: Historical and recent development, metaphony
- Korhonen 1981 (etc.): Historical development
- Sammallahti 1984, 1998 etc.: Historical and recent development, metaphony
- Morottaja 2016: Harmony, vowel families and types (vookaalperruuh já -tiijpah; vokaaliperheet ja -tyypit)
- Ibid.; Morottaja & Olthuis (2022): vowel families and types, morphophonological classification of words based on first-syllable vowel



Note on Transcription

IPA	FUT	Itkonen (e.g. 1971, 1992)	Valtonen et al. (2022)	Morottaja & Olthuis (2022)		Koukkari
ə, x, ə, 3, e	ę, ę, ę, p, ă	a^1 , a^2	Э	9, â (ə)	e ¹ , â ²	Э
е	е	e	е	е	е	е
а	а	a	а	a	a	а
a, æ	à, ä	à, ä	æ	á, ä	á, ä	a > æ

• In this presentation:

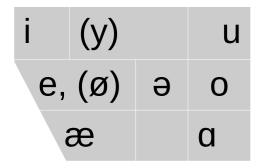
- 1) First syllable
- 2) Non-initial syllables

- Example words in (standard) orthography.
- Phonemic transcriptions in the same IPA-based system as used by Valtonen, Aikio & Ylikoski in the Oxford Guide to the Uralic Languages.
- Historical reconstructions in the established FUT.



Vowel Phonemes

Monophthongs



Diphthongs

ie	ye	uo
iæ	uæ	

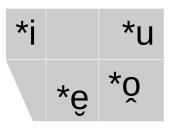
- Rounded front vowels only occur as independent phonemes in loanwords.
- Status of a is complicated.
- Vowel length:
 - Usually considered phonemic; 2-3 degrees for monophthongs, 2 for diphthongs.
 - Standard orthography indicates long monophthongs with double letter (<aa> = /aː/); length otherwise not shown.
 - Length in 1st syllable varies independently of quality, and can thus be ignored in this presentation (mainly short vowels used, but same rules for long ones).



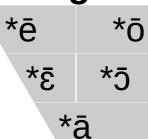
Historical Development: PS Situation

Proto-Saamic vowels

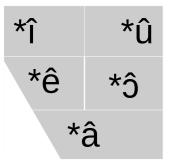
Short







Contracted



- Mainly bisyllabic word roots
- All non-contracted vowels may occur as 1st-syllable vowel (V₁).
- Contracted vowels only occur as V₂.
- The only non-contracted vowels occurring freely as V₂ are *e, *ē, *ō.
 - $*_{Q}$, *u, * $\bar{\varepsilon}$, * \bar{o} not found in this position.
 - *i, $*\bar{a}$ as V_2 (almost) exclusively in suffixed forms.



Historical Development: Main Rules

- V₂ quality largely retained.
 - Non-contr.
 *ō, *ē > u, i
 usually after
 long V₁.
- IS V₁ depends

V_1 V_2	*e	* <i>i</i>	*î	*û	*ā	*â	*5	*ĵ	*	ē	*ê
*e	0—ə	0-	-i	о–и	a-	-a	a-	– O		а–е	
*ŏ	-	U-	;		0-	æ	0-	– O		о–е	
*u	u - ə	u-	_,	u–u	u–	æ	u-	- 0		u–e	
*i	i – ə	i–	-i	i–u	i–æ		i–	-0		i–e	
*ā	a - 9	a-	- i	а–и	a-	-a	æ–u	æ–o	æ	—i	æ–e
*5	0—9	0-	-i	о–и		\sim			uæ	e—i	uæ–e
*ō	uo–ə	ио	— <i>і</i>	ио–и	uæ	−æ	uæ–u	uæ–o	ye–i	ye–e	
*Ē	9– 9	e-	-i	ә–и	ix	~	im u	im o	e–i	е–е	
*ē	ie–ə	ie-	<i>−i</i>	ie–u	ıæ-	-æ	iæ–u <i>iæ–o</i>		ie–i	ie–e	

on V₂; some combinations rare or impossible.

Historical Development: Exceptions in V₂

- *e > /α/ before final /h/: kielâ 'tongue, language', NOM.PL kielah.
- Changes before /j/:
 - *e > /æ/ (in originally trisyllabic forms): kielâ, SG.COM kieláin
 - $-*\bar{o} > /o/$ (as above): $\acute{a}kku$ 'grandmother' SG.COM $\acute{a}hhoin$
 - $-*\hat{i} > /e/$ (in uncontracted forms of contr. verbs): finniđ 'get', PST.1SG finnejim
- Split of *ē after historically long V₁:
 - $-*\bar{e} > /e/$ when preceded by a short consonant and V_1 of the group /e ie ye/: eelliđ 'live', IMP.2SG ele
 - $-*\bar{e} > /i/$ otherwise.
 - -Dialectal variation: $*\bar{e} > /e/$ may occur more broadly than specified above, and there may be a similar split of $*\bar{\jmath}$ into /o/ and /u/.



Current Situation: V₁–V₂

- Typical
- Limited
- Very limited (individual forms, recent loans)
- Marginal or nonexistent

	а	0	u	i	æ	е	Э
a	а—а	a—o	a—u	а—і	a–æ	а–е	a–9
0	0—0	0-0	o—u	o—i	0–æ	о-е	0—9
u	u—a	u–o	u–u	u—i	u–æ	u–e	u–ə
i	i—a	i–o	i–u	i—i	i–æ	i–e	i–ə
æ	-	æ-o	æ–u	æ–i	æ–æ	æ–e	-
е	е-а	e-o	e–u	e–i	e–æ	е-е	-
Э	ə —a	-	ə–u	-	ə–æ	ә–е	9–9
iæ	-	iæ–o	iæ–u	-	iæ–æ	-	-
uæ	-	uæ–o	uæ–u	uæ–i	uæ–æ	uæ–e	-
uo	uo–a	uo–o	uo–u	uo–i	uo-æ	?	uo–ə
ie	ie-a	?	ie–u	ie–i	ie–æ	ie–e	ie–ə
ye	-	-	-	ye—i	-	ye-e	-



Current Situation: V₁–V₂

- Typical
- Limited
- Very limited (individual forms, recent loans)
- Marginal or nonexistent

	а	0	u	i	æ	е	Ә
a	asta	asto	rahtuđ	rahtim	palláim	alme	hattâ
0	joolah	osko	oskum	ostim	kován	kove	jollâ
u	tuulah	puško	muttuđ	muttiđ	sukká	mušteđ	tullâ
i	čiiŋah	kirkko	pivdum	finniđ	pirrá	ihe	čiŋŋâ
æ	-	áhhoid	ákku	rähtiđ	lášká	käskee	-
е	teltta	leijoon	hersku	enni	kehá	pele	-
Э	eeđah	-	ennuv	-	hææjäid	tælle	ettâ
iæ	-	siäloid	siälu	-	hiärrá	-	-
uæ	-	vuároid	vuáru	kuáti	puátá	puáttee	-
uo	čuolmah	kuoro	puohtuđ	puohtim	čuolmáid	?	čuolmâ
ie	kieđah	?	tiettuđ	tiettiđ	kieđáid	tieđe	kietâ
ye	-	-	-	kyeli	-	kyele	-



/d/ vs. /æ/: Harmony

	a	0	u	i	æ	е	Э
a	a–a	a–o	a—u	a—i	a–æ	а–е	G—9
æ	1	æ-o	æ–u	æ–i	æ–æ	æ–е	-

- Cannot normally co-occur in a (noncompound) word.
 - With other vowels partially complementary.
- V₁/a/ causes V₂ /a/ instead of /æ/:
 ihe 'year', SG.ILL ihán; kove 'picture', SG.ILL kován;
 ahe 'age' SG.ILL ahan
- Some forms feature regressive metaphony instead of progressive harmony:

aassâđ /a:ssəð/ 'live, dwell', PRS.3SG áásá /æ:sæ/

	a	æ
a	a—a	a–æ
0	o—a	o–æ
u	u—a	u–æ
	i—a	i–æ
æ	-	æ–æ
е	e-a	e–æ
Э	ə–a	ə–æ
iæ	-	iæ–æ
uæ	-	uæ–æ
uo	uo–a	uo–æ
ie	ie-a	ie–æ
ye	-	= Univers



/d/ vs. /æ/: Disharmony

- Disharmonic sequences may occur when the first-syllable vowel is /q/:
 - Before /j/: aassâđ, PST.3DU aasáin /ɑːsæjn/
 - In polysyllabic forms: VABE asâhánnáá /asəhænnæː/
 - With long /æː/: taat /taːt/ 'this', SG.ABE taanttáá /taːnttæː/
- No disharmonic words with first-syllable /æ/ (?).
 - No suitable development from Proto-Saamic
 - Finnish also has vowel harmony, while /æ/ is rare in Scandinavian languages > no loanwords with the combination /æ–α/



The Status of /ə/

	a	0	u	i	æ	е	Э
a	a–a	a–o	a—u	a—i	a–æ	а–е	a–9
е	e-a	е-о	e–u	e–i	e–æ	е-е	-
Э	ə–a	-	ə–u	-	ə–æ	ә-е	9–9

- Almost compl. dist. with /e/ as V₁; some variation before /u/ and in monosyllables.
- Contrast with /a/: same contexts as above, plus pairs /a-a a-ə ə-ə/.
 - As V₂ after other V₁'s: /a/ before /h/, /ə/ otherwise.
- Considered phonemic in this presentation.
 - Minimal triad: vardâm vardem vardam 'figure.PX1SG' 'bleeding' 'bleed.PTCP.PST'

	a	е	Э	
a	a—a	а–е	G—9	
0	o—a	о–е	09	
u	u—a	u–e	u–ə	
i	i—a	i–e	i–ə	
æ	-	æ–е	-	
е	e–a	e–e	-	
ә	9 – a	ә-е	ə–ə	
iæ	-	-	-	
uæ	-	uæ–e	-	
uo	uo–a	?	uo–ə	
ie	ie-a	ie-e	ie–ə	
ye	-	уе-е	= University of Oulu	



/ə/ vs. /e/: Distribution

	a	0	u	i	æ	е	Э
е	е-а	e-o	e–u	e–i	e–æ	е-е	-
Э	ə–a	-	ə–u	-	ə–æ	ә–е	9–9

- Cannot normally co-occur in a (noncompound) word.
- As V₁: /e/ before /i/ and (less commonly) /e/, otherwise /ə/.
 - enni /enni/ 'mother', ele /ele/ 'live.IMP.2SG' ettâ /əttə/ 'thing', ennuv /ənnuv/ 'much'
 - No minimal pairs.
- As V₂: contrast after /a o u i/, otherwise mostly complementary.

	е	Э	
a	а–е	a–9	
0	о-е	0—ə	
u	u–e	u–ə	
i	i–e	i–ə	
æ	æ–e	-	
е	е-е	-	
ə	ə–e	9–9	
iæ	-	-	
uæ	uæ–e	-	
uo	?	uo–ə	
ie	ie-e	ie–ə	
ye	уе-е	= University	

24/08/2022 Tuomas Koukkari – Vowel Harmony and Related Phenomena in Inari Saam



/ə/ vs. /e/: Metaphony

- Regressive metaphony only; no systematic alternation in non-initial syllables (cf. /α/ vs. /æ/).
- Typical case: V₂ alternation /ə/ ~ /i/ ~ /æ/ causes, respectively, V₁/ə/ ~ /e/ ~ /iæ/:

ettâđ /əttəð/ 'say'
PST.1SG ettim /ettim/
PRS.3SG iätá /iætæ/

V₁/e/ also before /e/: PRS.3SG eteh /eteh/



/ə/ vs. /e/: Exceptions

- Lexical & idiolectal variation before /u/ and in monosyllables:
 meendu /məːndu/ ~/meːndu/'excessively, too'; lâš ~ leš 'be.POT.3SG'
 - Some dialects (and idiolects?) always use /e/.
- V₂ /ə/ > /æ/ before /j/ does not appear to cause V₁ /ə/ > /iæ/:
 ettâđ, PST.3DU eeđáin /əːðæjn/ (Itkonen 1986: ξδàin)
- Polysyllabic forms: aassâd, PRS.2PL asâvetteđ
 árvuštâllâđ 'evaluate', PST.1SG árvuštâllim ~ árvuštellim
- The disharmonic V₁–V₂ sequence /ə–e/ occasionally found in colloquial speech (Itkonen 1992): *tælle* /təlle/ 'then' (standard *talle*) *mæhte* /məhte/ 'how' (*maht, mahte*)
 - Recorded in 1952.
 - Apparently only in certain high-frequency words; prosodically unstressed?
 University only in certain high-frequency words; prosodically unstressed?



Rounded Vowels: Front vs. Back

- /ø y/ as independent phonemes only in recent loanwords.
 - [u] (~ [y]) historically an allophone of /u/ after certain consonants
 and in the diphthong ye [uo ~ ye] (could be analyzed as /ue/ or /uo/).
- /y/ imported in some loans as demanded by Finnish harmony, but remains marginal: kännyk 'cellphone' (< Fi coll. kännykkä)

pövkkyr 'coarse fur coat' (< Fi dial. pöykkyri)
pygálys ~ pygálus 'reindeer roundup' (< Fi dial. pykälys)

- /ø/ extremely rare.
 - Olthuis (2017) finds six words, the most common being *ministeriö*.
 - /ø/ is V₁ in the other five; /ø/ in a non-initial syllable in only one word.



- Typical
- Limited
- Very limited (individual forms, recent loans)
- Marginal or nonexistent

	а	O	u	i	æ	е	Э
a	a—a	a—o	a—u	a—i	a–æ	а–е	a—9
0	o—a	0-0	o—u	o—i	0–æ	о-е	0—9
u	u—a	u–o	u–u	u–i	u–æ	u–e	u–ə
i	i–a	i–o	i–u	i—i	i–æ	i–e	i–ə
æ	-	æ-o	æ–u	æ–i	æ–æ	æ–е	-
е	e-a	e-o	e–u	e–i	e–æ	е-е	-
Э	9– a	-	ə–u	-	ə – æ	ә–е	9–9
iæ	-	iæ–o	iæ–u	-	iæ–æ	-	-
uæ	-	uæ–o	uæ–u	uæ–i	uæ–æ	uæ–e	-
uo	uo–a	UO-0	uo–u	uo–i	uo-æ	?	uo–ə
ie	ie-a	?	ie–u	ie–i	ie–æ	ie-e	ie–ə
ye	-	-	-	ye—i	-	уе-е	-



- /a o u i/ as
 V₁ combine
 (relatively)
 freely with
 any V₂.
 - Limited where other V₁'s occur freely (V₂/u i/).
- /æ e ə/ and diphthongs solely from historically long vowels.

	a	0	u	i	æ	е	ә
a	a—a	a—o	a—u	a—i	a–æ	а–е	а -
0	o—a	0-0	o—u	0—i	0–æ	о-е	0 - 0
u	u—a	u–o	u–u	u–i	u–æ	u–e	u–ə
i	i–a	i–0	i–u	<u>T</u> :	i–æ	i–e	i–ə
æ	-	æ–o	æ–u	æ–i	æ–æ	æ–e	1
е	е-а	e-o	e–u	e–i	e–æ	е-е	-
Э	9— a	-	ə–u	-	ə – æ	ә–е	9–9
iæ	-	iæ–o	iæ–u	-	iæ–æ	-	-
uæ	-	uæ–o	uæ–u	uæ–i	uæ–æ	uæ–e	-
uo	uo–a	uo-o	uo–u	uo–i	uo–æ	?	uo–ə
ie	ie-a	?	ie–u	ie–i	ie–æ	ie–e	ie–ə
ye	-	-	-	ye-i	-	уе-е	-



- V₂ /e o/ rarely occur if V₁ is /æ e ə/ or a diphthong; usually changed to /i u/.
 - V₂ alternation /e/~/i/ or /o/~/u/ (dependent on V₁) in some forms.
 - Certain extra complications for V₁ /e ie ye/ before V₂ /e i/ (cf. split of historic *ē).
- V₁/a o u i/ before V₂ /u i/ indicates contraction or loan, and thus a different inflectional pattern.
 - Same restriction for /uo/ and (before /u/ only) /ə ie/.



V₁ Groups

Possible grouping:

- Two main groups, /a o u i/ vs. /æ e iæ uæ ie/.
 - The latter has two subgroups: /æ iæ uæ/ (æ group) vs. /e ie/ (e group).
- /ə uo ye/ rarely occur in the relevant environments; /ə uo/ roughly pattern with /a o u i/, while /ye/ patterns with /æ e iæ uæ ie/.

Terminology:

- Provisionally "back" vs. "front", but this requires /i/ to be "back".
- Dark vs. bright (cf. Fischer-Jørgensen 1967)?
 - Sometimes used to describe the low back vs. front vowel in IS & NS.
 - Roughly analogous to back vs. front; may also have the same problem, in that /i/ should be dark, but is often considered the "brightest" vowel (ibid.).



	Dark	Bright	le iel	Kye
PRS.3PL of â-stem verbs	-eh nuurrâđ : nor <u>eh</u>	-ih aassâđ : ääs <u>ih</u>	either (?) ettâđ : et <u>eh</u>	kyessi 'guest
1 st and 3 rd person imperative	-0- nuurrâđ : nor <u>o</u> s	-u- aassâđ : áás <u>u</u> s	keččâđ : kečč <u>ih</u>	
Metaphonic alternation in i-stem nouns	<mark>no</mark> p <u>i</u> lli : p <u>ii</u> lin : p <u>ii</u> lij	yes k <u>ye</u> ssi : k <u>uá</u> sán : k <u>uo</u> sij		
Latus alternation in u-stem nouns	no tavlu : tavl <u>u</u> in	yes ákku : áhh <u>o</u> in		
Verbs ending in -iđ, -uđ	contracted čurgiđ : čorgee	non-contracted puáttið : puátá	either hettið : hettee pettið : piättá	
V ₁ before grade II in á-stem nouns and â-stem verbs	short pirrá : p <u>i</u> rá nuurrâđ : n <u>o</u> rá	long lášká : l <u>áá</u> šká aassâđ : <u>áá</u> sá		

pilli 'drinking straw' keččâď 'look' nuurrâd 'collect'

puáttiď 'come' čurgiđ 'clean'

tavlu 'framed picture' pirrá spinning top' pettiđ 'deceive' *lášká* 'slacker, slob' hettid 'obstruct'



Current Developments: Instability?

- /a/ vs. /æ/: Both can be reduced to /ə/.
 - väldið 'take', PTCP.PST váldám ~ váldâm vardeð 'bleed', vardam ~ vardâm
 - Mainly as V₂ (although cf. previous note on /ə–e/)
 - Conversely, some speakers use /a/ instead of /ə/ (Itkonen 1971).
- V₁/ə/ merging with /e/?
 - Itkonen 1971:

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"nykyisin alkaa yleistyä [...] tietyissä sanatyypeissä [...] esim. <u>pes'tu·m</u> voi murteittain ääntyä myös <u>peštum</u>"
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Mettovaara (forthc.)



Current Developments: Instability?

- New vowel combinations increasingly appearing in loans.
 - Widespread bilingualism, Finnish often being dominant > IS increasingly affected by the phonological structure of Finnish, while loans from the latter face decreasing pressure to conform to IS?
- Increased literacy in IS, written form plays important role in how many new speakers learn the language.
 - Olthuis 2009:
 - "Lâi máttátmist väädis finnið párnáid luuhâð *škovlâ* togobeht, kost čallui puáris čäällimvyevi mield *škovla*."
 - Modern orthography distinguishes /ə/ from /a/ in non-initial syllables, but not from /e/ as V₁; effects?



Conclusions

- /a/ vs. /æ/: Both progressive and regressive metaphony.
 - Progressive harmony quite limited.
- /ə/ vs. /e/: No true progressive harmony; three-way regressive metaphony between /ə/ ~ /e/ ~ /iæ/.
- /u/ vs. /y/: Marginal, only as imported from Finnish.
- First-syllable vowels may be divided into two broader groups ("dark" and "bright") based on certain morphophonological features of the word that can be inferred from them.
 - Wide range of effects, only partially related to vowel quality.
- System based on a delicate balance of historical developments and maintenance of distinctions; might be lost of certain trends obscuring these distinctions continue.



Takkâ!

https://github.com/tkoukkar/anaraskiela/