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Typology of prosodic systems in Low Luga Izhorian varieties

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1. GENERAL REMARKS

Low Luga Izhorian is one of two extant dialects of the Izhorian (Ingrian) language spoken in Russia near the Russian-Estonian border. Low Luga Izhorian is highly influenced by language contact, participating in the sprachbund of Izhorian, Votic, Ingrian Finnish and Estonian in the Low Luga area. In this sense, Low Luga Izhorian contrasts with the more conservative Soikkola dialect of Izhorian, which is not part of the sprachbund. The closely related languages of Low Luga Izhorian, Votic and Finnish have undergone strong mutual influence, and many isoglosses cross the area from different source languages. As a result, all the Finnic languages in this area manifest a high level of intra-dialectal variation. Both Izhorian and the Finnish of Low Luga are very poorly described, and with around 80–100 elderly speakers of each Izhorian dialect left, the need for language documentation of these varieties is particularly acute.

This paper reports on ongoing field research on Low Luga and Soikkola Izhorian undertaken as part of expeditions organized by F. Rozhanskij (Institute of Linguistics at Russian Academy of Sciences, Moscow).¹ One of the most challenging problems encountered while working on the various dialects of Izhorian concerns their segmental and prosodic phonology. While the phonological systems of the Soikkola varieties of Izhorian are fairly homogenous, the northern, central and southern varieties of Low Luga Izhorian manifest at least three types of non-initial vowel reduction. I propose that these varieties represent three different diachronic stages of vowel reduction in non-initial syllables in Izhorian, with the level of vowel reduction increasing from the north to the south of the Low Luga region.

2. FOOT AND ITS TYPES IN IZHORIAN

Length contrasts between vowels in the initial syllable of a FOOT can be interpreted at the segmental level, as shown in this minimal pair from a northern variety of Low Luga Izhorian: *savi* [sa·vì] ‘clay’ vs. *sāvi* [sā·vĩ] ‘tub’. However, all vowel length contrasts in non-initial syllables in Izhorian are strictly conditioned by:

- (i) the position of the vowel in the foot and word-form;
- (ii) the segmental structure of the foot and word-form.

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As such, the concept of the foot is crucial for Izhorian phonology. Moreover, the notion of foot is intrinsically connected to certain types of length contrast in the nucleus of the first syllable. The following sections discuss different aspects of the foot in more detail.

2.1. Foot with a short first syllable

The first main type of foot is a FOOT WITH A SHORT FIRST SYLLABLE, i.e. an open syllable containing a short vowel. The prosodic nucleus of such a foot (consisting of the first syllable vowel through to the second syllable vowel) has a VCV structure. In the second syllable of this nucleus the vowel normally undergoes prosodic lengthening and is longer than the first vowel: [ta·pà] ‘kill.IMP.SG’, [ra·pàkkä] ‘rags’.² This type of prosodic nucleus doesn’t have a clear prosodic head: the first vowel carries morphologically bound stress, but the second vowel is longer.³ Therefore the nucleus is referred to as BALANCED. There are no phonemic length contrasts between vowels in the second syllable of the VCV nucleus. Nuclei of this type are realized in a similar way throughout the Low Luga Izhorian varieties.

2.2. Foot with a long first syllable (northern varieties)

The second main type of foot is a FOOT WITH A LONG FIRST SYLLABLE, i.e. a syllable containing a long vowel, a diphthong and/or a close vowel. The nucleus here can have the structure VVCV, VCCV, or more rarely VVCCV. In this notation, VV represents a long vowel or diphthong, and CC indicates a long consonant or a consonant cluster. The first syllable in this nucleus is a distinct prosodic head, and the nucleus is referred to as UNBALANCED. In the majority of Low Luga varieties there are two main ways to realise such nuclei, through ‘reduction’ and ‘lengthening’.

In northern (i.e. the most archaic) varieties of Izhorian, there is an opposition between [lengthened/long/short] and [short/reduced] vowel allophones in the second syllable.⁴ This opposition is connected to an opposition in the first syllable. If the second vowel is lengthened, lengthening of a segment/segments on the boundary between the first and the second syllables is also observed:

[tʰstʰ(i) ~ tʰstʰ(ĩ)] ‘beautiful’
 [tʰstʰì ~ tʰuštʰì ~ tʰstʰĩ ~ tʰstʰĩ] ‘beautiful:PRT:SG’.

² The abbreviations used in this paper are: 3 = third person, ACT = active, EL = elative, FRQ = frequentative, ILL = illative, IMP = imperative, INF = infinitive, IPF = imperfect, IPRS = impersonal, NMLZ = nominalization, NOM = nominative, PL = plural, PRS = non-past, PRT = partitive, PTSP = participle, SG = singular, SUP = supin. Finno-Ugric phonetic transcription is used for the phonetic notation of the examples.

³ Phonetic correlates of stress in Izhorian are higher pitch and to some extent intensity.

⁴ More frequent types of allophones are underlined.

Lengthening of the first syllable does not seem to be as prominent in the Low Luga varieties as in the Soikkola dialect.

It is theoretically possible to analyse this opposition at the segmental level (i.e. distinguishing between short and long vowels), though non-initial lengthened vowels are generally phonetically much shorter than foot-initial long vowels and are sometimes realized as short clear non-reduced vowels. If these phonetically long allophones are analysed as long vowels, how should lengthened allophones in the second syllable of VCV nuclei be analysed? I propose they originate from short vowels and are lengthened under the tendency to maintain FOOT ISOCHRONY. This trend tends to make the overall length of the feet equal irrespectively of their segmental content. So, in the feet with VCV nuclei, the second vowel is *lengthened*, while in the unmarked realization of a foot with a long first syllable, the second vowel is *reduced*.

A foot with a long first syllable and lengthened second vowel is considered to be marked since it violates the tendency towards isochrony. Diachronically, the lengthened vowels in this case originate from long vowels that have reduced. As a consequence, researchers of Ingrian usually notate these vowels as long ones, but always notate second vowels in VCV nucleus as short, though in reality they can be longer than, or have the same phonetic length as, the those written as long. To avoid such controversy, I prefer to treat both types of lengthening as prosodic, and to describe the contrast between the two realisations of VVCV, VCCV and VVCCV nuclei at the SUPRASEGMENTAL LEVEL. The first type, with reduction, is marked by the LIGHT foot accent: /*ust*'i, and the second type, with lengthening, is marked by the HEAVY foot accent: /*ust*'i.

Trisyllabic feet manifest roughly the same contrasts in the length of the second vowel of the nucleus as noted above, but the vowel of the third syllable is always reduced: *k`iukata* [k'iu:kätä] 'stove:PRT:SG' vs. *t`iukata* [t'iukätä] 'play:INF'. In the third syllable of a trisyllabic foot with a VCV nucleus, one also observes reduction, as in [ra:päkkä], and the nucleus is marked by a LIGHT accent as a default: *t`apa*, *r`äpää*.

2.3. Monosyllabic foot (northern varieties)

There's one more important prosodic contrast to be mentioned. In the last syllable of a word-form that is more than two syllables long, a monosyllabic foot with a lengthened vowel and a secondary stress there can occur, for example: [t'iu:kätä] 'play:INF' vs. [tiu:kätä:] 'play:IPRS', [ma:kkävä] 'sleep:PTSP:ACT:PRS' vs. [ma:kkàmà:] 'sleep:SUP'. In this case, I postulate a monosyllabic foot in the final position carrying a HEAVY accent: *t`iukata*, *m`äkava* (a trisyllabic foot) vs. *t`iukat`a* (one disyllabic + one monosyllabic foot), *m`äkam`a*.

In the final position of the word, there can also be a foot with primary morphologically bound stress (these cases are very rare): [kü:lëllä· ~ kü:lëllä:] 'sidewise, sidelong', [i:kküna·l ~ i:kküna:l] 'outside'. Such words follow the prosodic model of compounds and some of them are in fact former compounds, cf. [plē-ššipä:] 'bald-headed' (< [plē-ššī] 'bald' + [pä:] 'head') with two primary stresses.

There are two types of monosyllabic words. The majority of them have a phonologically long vowel, e.g.: [pū·] ‘tree’, [mā·] ‘ground’, [mā·d] ‘ground:NOM:PL’ etc. Some monosyllabic words have a phonologically short vowel that can be lengthened under the influence of the primary stress: [hā·n ~ hā̄·n] (stressed) ~ [hän] (clitic) ‘he’, [se· ~ sē· ~ sē̄·] (stressed) ~ [se] (clitic) ‘that’. All these cases of monosyllabic primarily stressed feet are marked with a LIGHT accent whether they have long vowels, e.g. *pū̄*, *mā̄*, *mā̄d*, *pl’ēšipā̄*, or short vowels, e.g. *hā̄n* ~ *hän* (clitic), *sē̄* ~ *se* (clitic), *kū̄lel’ä*, *ikun’al*.

2.4. Word-forms longer than three syllables (northern varieties)

Words consisting more than three syllables are divided into several feet by (morphologically unbound) secondary rhythmic stress. Generally, a word consisting of a single root contains up to four syllables; longer roots are extremely rare, e.g. the root *jō̄sentelivad* [jō̄·ssēnte:livād] ‘run:FRQ:IPF:3PL’ can be used as a base in the word-form *jō̄sentelisivadki* ‘they would even run hither and thither’.

Words with four syllables manifest the same prosodic contrasts as those with three syllables: reduced vs. lengthened vowels in the second syllables of the first foot (rarely) and in the last syllable of a word-form, e.g. *kū̄lemine* [kū·l’ēmi:ne] ‘hear:NMLZ’ vs. *hō̄kamine* [hō·kàmi:ne] ‘rest: NMLZ’, *kū̄ntelem`a* [kū·ntēlemà:] ‘listen:SUP’ vs. *kū̄nteleva* [kū·ntēle:vā] ‘listen:PTSP:ACT:PRS’.

3. STABLE AND UNSTABLE POSITIONS

In all varieties of Low Luga Izhorian, there is sometimes a vowel drop in non-initial syllables in spontaneous speech. Of the two main types of vowel allophones in the non-initial syllables, short ones and lengthened ones, only short allophones can in principle drop out. The positions where this drop of the short allophones can occur are called UNSTABLE. The positions where short allophones cannot drop out are called STABLE.

The general rules of the vowel loss are:

- (i) loss only occurs in the second and the final syllables of a word-form;
- (ii) loss starts from the final syllable towards the beginning of the word;
- (ii) loss can not result in consonant clusters that are phonotactically forbidden.

The distribution of cases when the vowel loss is possible in the second and the final syllable of a word can be seen in Table 1. If short, allophones in these positions are not lost but undergo strong REDUCTION.

Vowel allophones with are not lost or reduced are:

- (i) lengthened allophones;
- (i) non-final odd allophones in a word having more than three syllables.

These vowels normally carry morphologically unbound automatic secondary stress: [sa.rà.fà.nà] ‘sarafan’, [a.vìt.ta:mì.se:sta] ‘help:NMLZ:EL:SG’, [krā.sk(ǎ)si:vàd] ‘paint:IPF:3PL’.

Table 1

Distribution of stable and unstable positions in the second and the final syllables

Loss of the * \check{V} (+* $\check{V}i$)		
final syllable		second syllable of the foot with ‘unbalanced’ nucleus
open syllable*	closed syl.*	wordform has > three syllables
I. loss: <i>l’iīna, ihmine,</i> <i>m’aito, t’ūtō,</i> <i>l’ehmä, p’ūtū,</i> <i>’osti, p’ūtui</i>	II. no loss: <i>l’amāz,</i> <i>l’ehmād,</i> <i>p’ēntarad</i>	V. a) loss (=I): <i>p’ikaraine, h’ōmikōla,</i> <i>l’āhtōmälä, m’ärkinüsešä, Kukusiša,</i> <i>k’ūntelem`a</i> b) forbidden cluster: no loss (=II): <i>j’ōnitel`od, j’ōsentelivad, oñetoman</i>
		a wordform has > three syllables
third syllable is short		third syllable is long (closed or/and with [\check{V}])
IV. no loss: <i>n’āpuri,</i> <i>p’ēntara, k’attila, P’eteri,</i> <i>k’arpolo, l’āhtōmā, s’üntüsi;</i> <i>m’istākī</i>		III. a) loss (=I): <i>P’eter`i, t’apōl`o, ihmised,</i> <i>p’ēntarad, p’oikaisen, p’ūtāk`ä, išutin, s’üntüsin</i> b) forbidden cluster: no loss (=II): <i>l’eikat`a,</i> <i>l’eikatk`a, v’oimakaz, k’ūnel`a, ošat`i, s’üötämā;</i> <i>s’üötän`ed</i>

The full forms are shown in Table 1; vowels undergoing reduction and drop are in bold; *except for the cases when it’s the second syllable in a VCV nucleus.

4. EVOLUTION OF THE SYSTEM IN CENTRAL VARIETIES

Vowel reduction in non-initial syllables extends from the north to the south of the Low Luga area. This section concerns the eastern and western varieties of Izhorian, united here as the central varieties, due to their similarity to each other concerning these processes.

In central varieties, the VCV nucleus remains unchanged. Other lengthened vowels are sometimes realized as lengthened, but more frequently (much more frequently than in the northern subdialect) they are realized as clear non-reduced vowels. Short vowels in stable and unstable positions are reduced in the second and final syllables in the same way as in northern varieties. When the vowels *a*, *ä*, and (sometimes) *e* occur in these positions, they are realised as *ə*. Similarly, *o*, *ö*, *u* in position IV (Table 1) tend to be realised as *ə*.

Vowel drop happens in the unstable position even more often in the central varieties, especially for *ə*. Many informants do not realize the existence of *ə* in the drop positions. If vowels in the drop positions are realized, they are generally pronounced as extra-short (about 30–50 ms), even in careful pronunciation. Sometimes they are realized as voiceless. To sum up, the opposition of vowel allophones in non-initial syllables in central varieties can be characterized as [lengthened/short] vs. [short/reduced+*ə*] (in stable positions) & [reduced/extra short+*ə*] (in unstable positions).

For the central varieties, it is even more difficult than for the northern varieties to describe such an opposition on the segmental level. So I propose a suprasegmental analysis, in which the system of the accents and their distribution in the central varieties is the same as for the northern varieties, only their phonetic realization is a bit different.

5. EVOLUTION OF THE SYSTEM IN SOUTHERN VARIETIES

Southern varieties manifest the strongest reduction in non-initial syllables among all Low Luga subdialects. A new developmental stage of the system can be seen here. The VCV nucleus remains unchanged in southern varieties. All other lengthened vowels have completely lost their length and have become short, clear non-reduced vowels that don't undergo drop. Short vowels in stable positions also keep their quality, apart for *a*, *ä* and (sometimes) *e*, which are realised as *ə* in the same way as in central varieties, and *o*, *ö*, *u* in position IV. For all other vowels, the reflexes of the (historically) long vowels and of the (historically) short vowels in stable positions are no longer distinguishable from each other. All vowels in unstable positions are regularly pronounced as extra short and VOICELESS, demonstrating a large degree of variation between the varieties.

An analysis making reference to foot stress is not useful in describing the southern varieties. I prefer to postulate here two subsystems of vowels: short vowels and reduced vowels (phonetically voiceless apart from *ə*). If to try to synthesize the whole vowel system for the southern varieties, we'll get three vowel subsystems: long vowels that can occur only in the initial syllables, short vowels occurring elsewhere and reduced vowels that occur only in the non-initial syllables. It could seem we're dealing here with the ternary length opposition. But in fact reduced vowels perceptively differ from the short ones in the first place by their quality and by their tendency to drop.

Here, there is an even stronger tendency to mix **o* and **u*, and **ö* and **ü*, than in central varieties, especially for the reduced vowels. The subsystem of the reduced vowels and the direction of their further development can be seen in Table 2.

Table 2
Reduced vowels and the direction of their further development

ü [y̥]	ī [i̥]		ū [u̥]	/	ī [i̥]	ĩ [ĩ̥] (<[ü/ö])
ö [ø̥]	ě [ɛ̥]	ə (<[ä/ǎ/ě])	õ [õ̥]		ə	ɔ̥ (<[ü/ö])

As an illustration, the phonetic transcription and the phonological interpretation of some pronunciations are given for all three systems in Table 3.

Table 3
Phonetic and phonological notation in northern, central and southern varieties

Northern	Central (here: western)	Southern	Translation
<i>l'ust'i</i> [ɫu:st'(i)]	<i>l'ust'i</i> [ɫu:st'(i)]	<i>l'ust'ɣ</i> [ɫu:st'(ɣ)]	'beautiful'
<i>l'ust'il</i> [ɫu:st'il]	<i>l'ust'il̄</i> [ɫu:st'il̄]	<i>l'ust'il̄</i> [ɫu:st'il̄]	'beautiful:ADS:SG'
<i>l'ust'i</i> [ɫu:st'i]	<i>l'ust'i</i> [ɫu:st'i, ɫu:st'i]	<i>l'ust'i</i> [ɫu:st'i]	'beautiful:ILL:SG'
<i>l'amāz</i> [ɫa:mmǎz]	<i>l'amāz</i> [ɫa:mmǎz]	<i>l'amāz</i> [ɫa:mmǎz]	'sheep'
<i>l'ampan</i> [ɫa:mpàn]	<i>l'ampan</i> [ɫa:mpàn, ɫa:mpan]	<i>l'ampan</i> [ɫa:mpan]	'sheep:GEN:SG'
<i>n āpuri</i> [nā:pūr'(i)]	<i>n āpur'i</i> [nā:pūr'(i)], <i>n āpər'i</i> [nā:pər'(i)]	<i>n āpər'ɣ</i> [nā:pər'(ɣ)]	'neighbor'
<i>n āpūrid</i> [nā:pūr'id]	<i>n āpur'id</i> [nā:p(ū)r'id], <i>n āpər'id</i> [nā:p(ə)r'id]	<i>n āpr'id</i> [nā:pr'id]	'neighbor:NOM:PL'
<i>s'ötetü</i> [s'ötēt't'ü]	<i>s'üötetü</i> [süö:tēt'(ü)], <i>s'üöteṽ</i> [süö:tēt't'(ü)]	<i>s'üöteṽ</i> [s'üö:tēt't'(ü)]	'feed:PTSP:IPRS:IPF'
<i>s'ötet'i</i> [s'ötēt't'i:]	<i>s'üöteṽ'i</i> [süö:tēt't'i:]	<i>s'üöteṽ'i</i> [s'üö:tēt't'i:]	'feed:IPRS:IPF'
<i>ópeṽaja</i> [o:pètta:ja]	<i>ópeṽaja</i> [o:pètta:ja]	<i>ópeṽaja</i> [o:pètta:ja]	'teacher'

Finally, in the Table 4, the evolution of the non-initial vowels is shown. I have included Soikkola dialect as well, though it was not discussed here. Soikkola

dialect, which is a conservative, low-contact variety, manifests roughly the same length contrasts of vowels in non-initial syllables as the northern Low Luga subdialect. The main difference is that there's no vowel drop in the Soikkola dialect of the kind that is found in Low Luga dialect. So, for the Soikkola dialect there's no need to distinguish between stable and unstable positions.

Table 4

Evolution of length opposition in non-initial syllables from Soikkola dialect towards the southern Low Luga varieties

Positions	Soik.		LL I		LL II		LL III
Second syllable in VCV nuclei	V [V̂]	→	V [V̂]	→	V [V̂]	→	V [V̂]
a) Second syllable in the 'unbalanced' foot; b) Monosyllabic foot in the end of a word-form	V [V̄/V̂]	→	V [V̄/V̂]	→	V [V̂/V]	→	V [V]
Short vowels	V [V/ǂ]	↗ (stable positions)	V [V/ǂ]	→	V [V/ǂ]	↗	
		↘ (unstable positions)	V [(V/ǂ)]	→	V [(ǂ/ǂ̆)]	→	ǂ̆ [(ǂ̆)]

Default – phonological interpretation of vowels; [] –main allophones (the most frequent ones are in bold); () – allophones in the unstable positions undergoing drop.