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SOME ASPECTS OF QUANTITY IN CENTRAL VEPS

Abstract. This article presents an acoustic-phonetic study of Veps word prosody. The results are analysed from the point of view of their role in the manifestation of the Veps prosodic structure. This paper deals with the role of quantity in Central Veps. It focuses on the quantity of vowels. Traditionally, in North Veps the vowels *u* and *i* are long in the stressed syllable, while in Central and South Veps they are shortened (e.g. *su* 'big', *hi* 'mouse'). The main issue raised in the paper deals with the durations of vowels in Central Veps. The results show that in monosyllabic words the duration of the vowels is longer than in the first syllable of polysyllabic words.

Keywords: Central Veps, prosody, quantity of vowels, quantity of consonants.

1. Overview of Veps sounds

Depending on the location of the people and dialectal differences within the language, Veps is divided into three groups: North (in Karelia, near Onega, to the southeast of Petrozavodsk), Central (Leningrad region) and South Veps (eastern part of the Leningrad region).

The most exhaustive study on Veps sounds is probably by Tunkelo "Vepsän kielen äännehistoria" (1946). The Veps language is rich of sounds, which makes it interesting. According to Tunkelo's study there are four degrees of lengths of vowels in Veps. A very short rounded vowel *u* has sometimes been marked as a glide-sound before *o* in the primary stressed syllable of a word (North Veps *Kaskez pol/v* ~ *p^uol/v* 'knee', *nor* ~ *n^uor* 'rope'). This labiovelarisation in Veps is most probably a Russian influence and concerns only consonants before *o*. In Central and South Veps this kind of labiovelarisation is rather rare (Tunkelo 1946 : 26, 543–544). The most common vowel duration in stressed and unstressed syllables is short (North Veps *Kalaig nagi* 'ceiling'). Half-long vowels appear in primary stressed syllables (*Kukagd' òl/g* 'straw'). In North Veps and Šimğärv the half-long vowels have also been marked in unstressed closed syllables (*Šoutárv korväd* 'ears'). Comparatively few long vowels have preserved. Almost all long vowels in Veps have shortened, for example *so* (< *sō*) 'swamp', *sön* (< *sōn*) 'I eat' (Kettunen 1960 : 38). There is one exception, namely, in North Veps

i, *u* and *ü* appear as long in a primary stressed syllable, for example *sū* 'mouth', *hīr'* 'mouse'. Long *ī* and *ū* have occasionally been heard also in Central Veps (Karhil *rīh* 'threshing barn') (Tunkelo 1946 : 26).

In unstressed syllables, long vowels can appear in South Veps (*eglē* 'yesterday', *saimā* 'we got', *tütö* 'girl') (Tunkelo 1946 : 26–27). The vocalisation of *l* and the shortening of the following component of the diphthong are the main explanations for long vowels in Veps.

As already mentioned, in North Veps long *ū*, *ī* and *ü* in the primary stressed syllable are preserved (Tunkelo 1946 : 16). Early **ū* may have changed into a diphthong *ju* (Viitso 2008 : 210). In Central and South Veps long *ū* and *ī* in the primary stressed syllable are shortened, e.g. *nu* 'bone', *kuš* 'spruce', *hir'* 'mouse'. However, some exceptions can appear among villages (for example in Karhil: *nu*, *rīh*) (Tunkelo 1946 : 17, 549, 560). Long vowels *ī* and *ū* in North Veps are the result of monophthongisation of the diphthongs: *ou* > *ū* and *ei* > *ī* (Viitso 2008 : 211).

There are three voiceless and non-aspirated stops: *k*, *t*, *p* (e.g. *ak* 'old woman'), and three voiced stops *g*, *d*, *b* (e.g. *garban* 'cranberry'). All these stops can be palatalised (e.g. *händ'ikaz* 'wolf'). Among fricatives there are voiceless *s* and *š*, voiced *z* and *ž*, which can all be palatalised as well. All consonants before front vowels can be palatalised (e.g. *lehm* ~ *lehm* 'cow') (Kettunen 1960 : 34–35).

The consonants in Veps are mostly short, especially in South Veps (e.g. *r* at the end of the syllable is short). Voiceless consonants (*k*, *t*, *p*, *s* and *š*) in the beginning of the syllable between voiced sounds (e.g. *souta*¹ 'to oar') are half-short. In his study, Tunkelo has marked half-short consonants the same way as short consonants (Tunkelo 1946 : 25). Half-long consonants appear mostly at the end of the syllable in North Veps and in some Central Veps dialects (Šokš *ait* 'granary'). There are also long consonants in North Veps and in some Central Veps dialects. These are voiceless and appear at the end of mono-, di- and trisyllabic words (Šoutarv *úok* 'beak', Kaskez *uk* 'old man') (Tunkelo 1946 : 25). Long lateral consonants *ā* and *l'* appear word-finally as geminate *l* (Tunkelo 1946 : 440).

Geminate stops are shortened into single stops (e.g. *ikun* 'window'). In South Veps such a shortening is absolute (Kettunen 1960 : 29). Preserved voiceless geminates are used in North Veps and sometimes in Central Veps between a short primary stressed sonorant and an unstressed sonorant. For example, this is the case of disyllabic verbs (AIndPr3Sg) in North Veps and Central Veps (e.g. *rikkob* 'he kills, 3Sg' (1Sg *rikon*, 2Sg *rikod*), *ottab* 'he takes, 3Sg' (1Sg *otan* 'I take', 2Sg *otad* 'you take')). Tunkelo refers to A. Sovijärvi (1943), whose kymograph contours showed that the phoneme *kk* was roughly twice as long as *k* phoneme in the word *rikod* (Tunkelo 1946 : 145).

2. Material and method

The current study was carried out using the framework of the Finno-Ugric Prosody Project (Lehiste 2007). The methodology for the study of Veps quantity is quite similar to that used for the analyses of Erzya, Meadow Mari and Livonian (see for example Lehiste, Teras, Ernštreits, Lippus, Pajusalu, Tuisk, Viitso 2008). A set of test sentences was recorded in 2009

¹ Half-short voiceless consonants are marked with a breve above the letter.

from two native speakers (female speaker MA, born in 1932, and male speaker NA, born in 1961). Both speakers (mother and son) are from the Central Veps (Ladv village). Ladv belongs to a group of villages situated on the bank of the river Ojať.

The duration of sounds, syllables, and feet was measured in a corpus of test sentences. The material consists of carrier phrases where the test words occur in phrase-final and sentence-final positions. The test words were chosen on the basis of their sound structure and number of syllables (one to five), e.g.: *Pimed om ö, vauged om päiv* 'The night is dark, the day is light', and *Vauged om päiv, pimed om ö* 'The day is light, the night is dark'. For this study, only mono- and disyllabic words from the test sentences were selected. In addition, the female speaker participated in another test. She was asked to repeat sentences, where the test words were embedded sentence-initially and sentence-finally in a noun phrase (e.g. *Suif kuž kazvab mägel* 'Big spruce grows on the hill', *Necel mägel kazvab suif kuž* 'On this hill there grows a big spruce', *Orav libub surele kuzele* 'Squirrel climbs up the big spruce', *Necele surele kuzele libub orav* 'Up this big spruce climbs a squirrel'). The purpose of this test was to compare the durations of the same vowels in mono- and polysyllabic words.

3. Results and discussion

3.1. Monosyllabic words

Figure 1 presents the measurement results of such monosyllabic words which consist of a monophthong and a diphthong. The first type of words represents the structure consisting of a monophthong without a final consonant or the final consonant is short and voiced (see type 1 in Figure 1), for example *ö* 'night', *so* 'swamp', *tob* 'brings', *job* 'drinks' (altogether 40 words). As there was no clear difference in the vowel durations between the words ending with a vowel and words ending with a consonant, they were analysed as the same group. The second type of words represents words with a monophthong with a long consonant in the end (see type 2 in Figure 1), for example *tot* 'you bring, 2PI', *sat* 'you get, 2PI' (16 words). The third type of words consists of a diphthong with a short and voiced consonant in the end (see type 3 in Figure 1). This group of words included such words as for example *aid* 'garden, NSg', *päiv* 'day' (14 words).

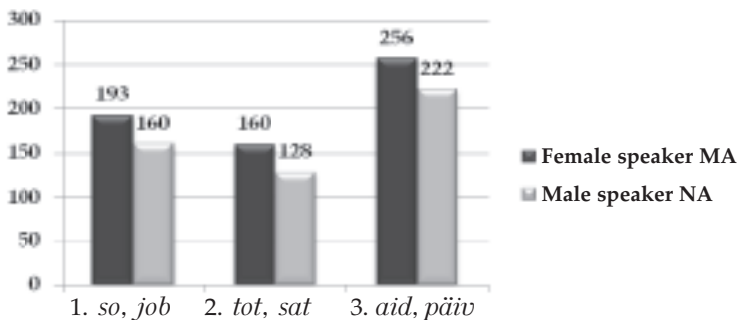


Figure 1. Average vowel durations (in ms) in three types of monosyllabic words consisting of a monophthong or a diphthong.

There is a small difference between the speakers. The average durations of the monophthongs of the female speaker are slightly bigger than these of the male speaker. In the first type V = 193 ms (speaker MA) and V = 160 ms (speaker NA), in the second type V = 160 ms (speaker MA) and V = 128 ms (speaker NA). There is also a logical tendency that vowels in monosyllabic words ending with a voiceless stop are shorter in duration.

In Table 1 the durations of V1 and V2 are presented separately.

Table 1

Average V1 and V2 durations (in ms) in diphthongs in monosyllabic words
(s.d. — standard deviation, N — number of measurements)

Speaker	Position	(C)V1V2C			
		N	V1	V2	V1 + V2
MA	Phrase-final	3	150	112	262
	s.d.		49	29	36
	Sentence-final	3	170	81	251
	s.d.		58	23	44
	Overall average	6	160	96	256
			49	29	36
NA	Phrase-final	5	118	102	220
	s.d.		16	39	31
	Sentence-final	3	144	82	226
	s.d.		27	23	46
	Overall average	8	128	94	222
			23	33	34
Overall average		14	141	95	236
			39	30	38

Overall average duration of the diphthongs (V1 + V2) in all the words of both speakers is 236 ms. Compared to the words in the first type of Figure 1, the duration of the diphthongs is on average 62 ms longer. When we look separately at the durations of both parts of the diphthongs, the first vowel of the diphthong is on average up to 89 ms longer than the second vowel in the female speaker's pronunciation and up to 62 ms longer in the male speaker's pronunciation.

In addition, there was one monosyllabic word in the list consisting of a diphthong and ending with a voiceless stop, namely *ait* 'granary, NSg'. The durations of the diphthongs in phrase-final position were 331 ms (V1 = 247 ms, V2 = 84 ms, speaker MA) and 247 (V1 = 134 ms, V2 = 113 ms, speaker NA), and in sentence-final position 315 ms (V1 = 230 ms, V2 = 85 ms, speaker MA) and 249 ms (V1 = 155 ms, V2 = 94 ms, speaker NA).

3.2. Disyllabic words

In Figure 2 the results of disyllabic CVCV(C) type of words are shown (altogether 45 words). Examples of such words are *teda* 'to know', *söda* 'eat', *veraz* 'stranger'. As there appeared no consistent difference between

the vowel durations in the primary stressed syllable (i.e. between primarily short and primarily long vowels), these words were not analysed separately. However, this aspect needs further study.

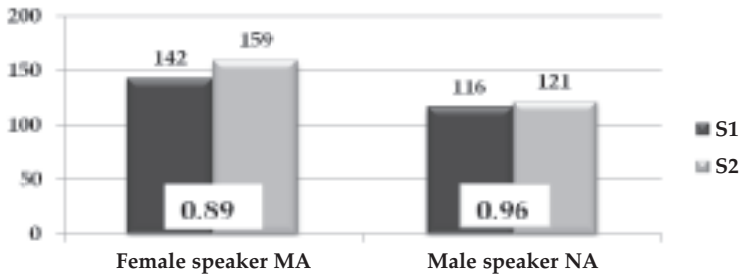


Figure 2. Average syllable durations (in ms) and syllable ratios in disyllabic words.

In this group of words there is a tendency that the second syllable (V2) is slightly longer in duration than the first syllable (V1). Again, the vowel durations of such words are somewhat longer in the female speaker’s speech (142 and 159 ms respectively). Still, the duration ratios of both syllables are similar for both speakers (0.89 and 0.96). Comparing the average durations of V1 of both speakers in Figure 2 and the first type in Figure 1, an ANOVA shows that the difference between the vowel durations is statistically highly significant (MA $F(1) = 20.902$, $p < 0.001$ and NA $F(1) = 21.404$, $p < 0.001$).

Figure 3 shows words containing a diphthong in the first syllable and a voiced stop between two syllables, e.g. *aidad* ‘garden, NPI’ (altogether 24 words).

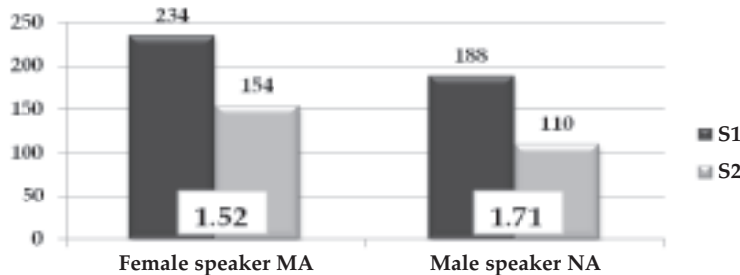


Figure 3. Average syllable durations (in ms) and syllable ratios in disyllabic words.

Figure 4 contains similar words as in previous one, but instead with a voiceless stop between the two syllables, e.g. *aitad* ‘granary, NPI’ (8 words).

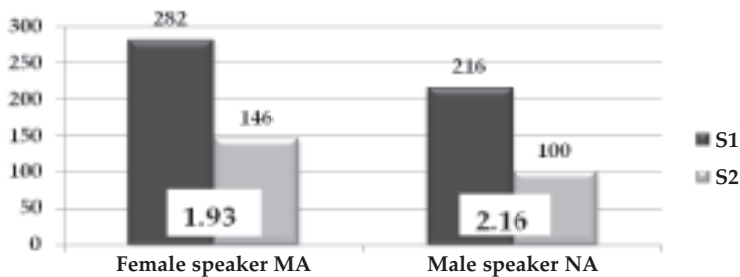


Figure 4. Average syllable durations (in ms) and syllable ratios in disyllabic words.

When we compare these two word types, the average duration ratios are bigger in words presented in Figure 4 (1.93 and 2.16). The reason for this is probably the fact that in words presented in Figure 3 there is a short consonant (63 and 58 ms) between syllables, while in words presented in Figure 4 there is a voiceless stop (133 and 100 ms) between the two syllables. Concerning the voiceless stops in words like *aitad* (presented in Figure 4) the question arises, whether these are short geminates or not.

Next, the results of disyllabic words containing a voiceless stop between the two syllables is presented, examples of which are *söta* 'to feed, ImpSg2', *leta* 'to fly, Inf' (altogether 45 words). Also in this case there appeared no consistent difference between the vowel durations in the primary stressed syllable (i.e. between primarily short and primarily long vowels). So these words were not analysed separately.

Table 2

Average V1 and C durations (in ms), syllable durations (in ms), foot durations (in ms) and duration ratios in disyllabic words (s.d. — standard deviation, N — number of measurements)

Speaker	Position	CVCV(C)					
		N	V1	C	S1	S2	S1/S2
MA	Phrase-final	3	141	133	201	132	1.54
	s.d.		25	4	26	18	
	Sentence-final	4	113	132	172	178	0.99
	s.d.		30	10	38	51	
	Overall average	7	125	133	185	158	1.17
			30	7	34	45	

Table 3

Average vowel durations (in ms), syllable durations (in ms), foot durations (in ms) and duration ratios in disyllabic words (s.d. — standard deviation, N — number of measurements)

Speaker	Position	CVCV(C)				
		N	V1	C	V2	V1/V2
NA	Phrase-final	2	117	67	139	0.84
	s.d.		12	15	31	
	Sentence-final	2	109	95	153	0.72
	s.d.		8	21	33	
	Overall average	4	113	81	146	0.77
			10	22	27	

It appears that in this word group there is a difference between the two speakers, which is quite striking. In the pronunciation of speaker MA, the duration of S1 is longer (185 ms) and the duration of S2 shorter (158 ms) than in speaker NA's speech (121 ms and 146 ms respectively), resulting in bigger duration ratios of the syllables in the female speaker's pronunciation (1.17). The duration of V2 is bigger as compared to that of V1.

Comparing the results presented in Table 2 and 3, it seems that speaker NA does not differentiate these two word types (*söda* vs *söta*). To be more accurate, he pronounces the words like *söta* with a short consonant between two syllables; he pronounces these two word groups in the same way. The average duration of the consonant between syllables in speaker NA's pronunciation is 58 ms in the case of *söda* and 81 ms in the case of *söta*.

Speaker MA on the other hand clearly distinguishes these word types. Although the duration of S2 is the same (159 ms and 158 ms, see also Figure 2), the duration of S1 varies (142 ms and 185 ms). It seems that this speaker pronounces a short geminate between the two syllables (in the case of *söta*) and the average duration of the geminate is 133 ms.

Figure 5 presents the disyllabic words consisting of consonant clusters, e.g. *kirvez* 'ax', *ladvas* 'in the tree-top' (altogether 21 words). The first syllable in this group of words is always voiced and consists of a short vowel and the first part of the consonant cluster.

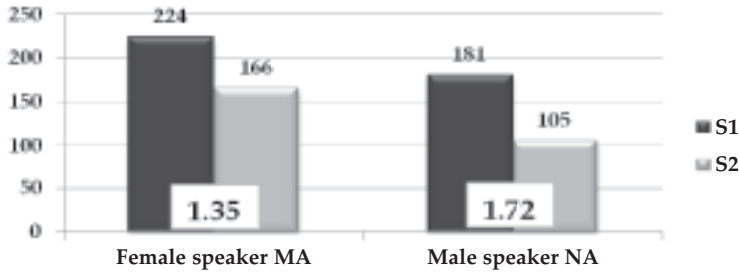


Figure 5. Average syllable durations (in ms) and syllable ratios in disyllabic words.

The average syllable durations here are 1.35 (speaker MA) and 1.72 (speaker NA). These word-types seem to be similar to the Estonian *kirves* 'ax', *ladvas* 'in the tree-top'.

Last, the measurement results of such words as *kukkub* 'falls' and *kattil* 'cauldron' are presented in Figure 6. Although there were only two such words among the test words (altogether 8 words), it is clear that these words constitute a separate group.

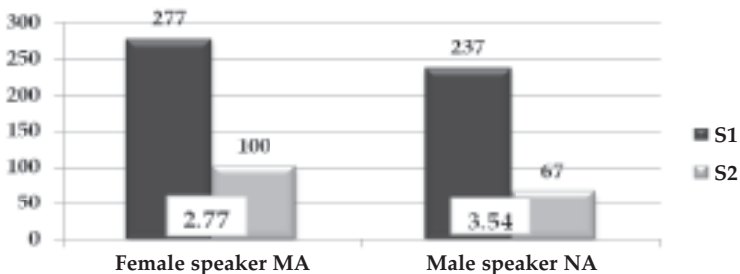


Figure 6. Average syllable durations (in ms) and syllable ratios in disyllabic words.

The average durations of the long geminates (226 and 210 ms) are considerably longer than the short geminates or consonants. The overall average of duration ratios of the syllables is also notably bigger than in previous word types (3.06).

3.3. Additional vowel data

The results presented above do not give a very clear evidence of the preservation or lack of long vowels in Central Veps. Therefore some additional data from other test sentences was analysed.

The female speaker MA was asked to repeat some sentences, where the test words were embedded sentence-initially and sentence-finally in a noun phrase (e.g. *Su' ku' kazvab mägel* 'Big spruce grows on the hill', *Necele surele kuzele libub orav* 'Up this big spruce climbs a squirrel'). The purpose of this test was to look at the differences in durations of the vowels *u* and *i* within the word with the same meaning pronounced as a monosyllabic word and then as a di- or trisyllabic word. All words are presented in Table 4.

Table 4
Vowel durations (in ms) in mono- and polysyllabic words of one speaker

Speaker MA		Word	Word	Word	Word
Position			monosyllabic		polysyllabic
Sentence-initial	<i>u</i>	<i>su'</i>	237	<i>surele</i>	117
		<i>su'</i>	142	<i>surel</i>	135
		<i>ku'</i>	226	<i>kuzele</i>	180
	<i>i</i>	<i>viž</i>	166	<i>videle</i>	129
Sentence-final	<i>u</i>	<i>su'</i>	203	<i>surel</i>	130
		<i>su'</i>	143		
		<i>ku'</i>	265	<i>kuzele</i>	120
	<i>i</i>	<i>viž</i>	188	<i>videle</i>	113

According to the measurement results, the duration of the vowels *u* and *i* in monosyllabic words *su'*, *ku'* and *viž* was usually bigger than in the first syllable of polysyllabic words. However, in two monosyllabic words the durations of the vowel were 142 and 143 ms. Among polysyllabic words there was one word, where the duration of the V1 was 180 ms. Comparison of V1 in di- and trisyllabic words did not give any striking information. These measurement results do not confirm the preservation of the long vowels, and clearly a more detailed questionnaire with more words is needed in order to draw any further conclusions. Here we can simply explain the difference by observing that in a shorter word (or foot) the duration of sounds is bigger.

4. Conclusion

In the current article the speech of two Veps speakers was studied acoustically. The results of both speakers showed the tendency for monosyllabic words to be pronounced with longer vowels, while in the case of polysyllabic words the vowels in the first syllable were shortened. Still, on the basis of these measurement results we can not hypothesise that long vowels are preserved in monosyllabic words. This is an intriguing question, which definitely deserves more attention and further study.

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Abbreviations

N — nominative, **Ind** — indicative mood, **Pr** — present tense, **1Sg** — 1st person singular, **2Sg** — 2nd person singular, **2Pl** — 2nd person plural, **3Sg** — 3rd person singular. Abbreviations make compounds.

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ТУУЛИ ТУЙСК (Tartu)

**НЕКОТОРЫЕ АСПЕКТЫ КОЛИЧЕСТВА
В СРЕДНЕВЕПСКИХ ДИАЛЕКТАХ**

В статье представлены акустико-фонетические данные о просодии слова в вепсском языке. Исследуется роль количества в средневепсских диалектах. Прежде всего обращается внимание на количество у гласных звуков. А именно: в северовепсских диалектах, например, долгие *i* и *u* сохранились, тогда как в средневепсских они укоротились (напр., *suí* 'большой', *hií* 'мышь'). Автор концентрирует свое внимание на длительности гласных в средневепсских диалектах. Основной вопрос: сохранились ли в этих диалектах долгие гласные. Результаты показывают, что в односложных словах длительность гласного больше, чем длительность гласного первого слога в многосложных словах. Полученные данные все же не позволяют утверждать, что долгие гласные в средневепсском сохранились. Однако вопрос сам по себе интересен и заслуживает дальнейшего изучения.