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**SOME COMMENTS
ABOUT PAUL ARISTE'S DOCTORAL DISSERTATION
ON PHONETICS OF HIIUMAA ESTONIAN DIALECTS***

Abstract. The doctoral dissertation by Paul Ariste, defended in 1939, is almost forgotten outside Estonia and even not listed in "Bibliographia Studiorum Uralicorum 1917–1987". Still it contains extremely valuable data and discussion about the sound system of the now almost leveled old dialects of the Estonian island Hiiumaa. In several points the data and Ariste's observations have changed and still can change older views on the historical phonetics/phonology of Finnic dialects. The article focuses on (1) developments and lack of δ [ɛ], (2) \ddot{u} in words with the original back vocalism, (3) breaking of mid vowels, (4) reduction and centralization, (5) the rise of Estonian distinctive quantities, (6) the so-called ternary oppositions.

Paul Ariste's master's thesis on Estonian Swedish loanwords in the Estonian language that was defended in 1931 and published in 1933 (Ariste 1933) was well known for the fact that Paul Ariste had reserved the theme for himself as a first-year student with the first impression of Estonian Swedish and no knowledge of the surrounding Estonian dialects. Still the idea was marvellous especially when compared with studies of more mature linguists throughout the world who derive dialect words of one language from the literary standard of some neighboring language and invent sophisticated adaptation rules instead of looking for a true source in contacting dialects of the neighboring language. Concerning its results Paul Ariste's master's thesis outweighs not only most masters' theses of the time but many contemporary PhD dissertations in various countries. Estonian coastal Swedes suffered badly under the first Soviet occupation in 1940/1941. The vast majority of them escaped to the West in 1943/1944 before the invading Russians, and the Estonian Swedish community ceased to exist.

When studying the Swedish dialect spoken on the island Hiiumaa, Paul Ariste who had a very good ear for phonetics, turned his attention to the old Estonian dialects spoken on the island. So he spent there four summers collecting language material for his doctoral dissertation.

Paul Ariste defended his PhD dissertation on the sounds of Hiiumaa dialects in 1939, being a 34-year-old fully formed linguist. A present-day linguist

* The study was partly supported by the Estonian Science Foundation, Grant No. 6528.

can hardly find a reference to the dissertation because the impressive series "Bibliographia Studiorum Uralicorum 1917—1987", notably its third volume, unfortunately fails to list Paul Ariste's PhD dissertation in its sections on both Estonian dialects and Estonian phonetics and phonology. Only a very careful researcher of bibliography could find it by review references given in the bibliography. However, many linguists do not bother to read even new book reviews. I have already earlier written in Estonian about Paul Ariste's PhD dissertation (Viitso 1995). As a unique and high-quality research into the sound system of dialects of Estonian islands Paul Ariste's dissertation merits a wider and continuous attention also today.

1. State of research into Estonian dialectology

Paul Ariste began his dissertation as follows (the citations were translated from Estonian):

"The research into the Estonian language has definitely progressed over the past decades, but not all the fields of linguistic manifestation been adequately treated so far. The least has been achieved in the observation and study of pronunciation. However, Estonian is one of those European cultural languages that can offer considerably new and significant perspectives from the point of view of general phonetics. This is why the work below attempts to provide both the phonetic and phonological overview of an Estonian dialect. For this purpose the Hiiumaa dialect group was chosen, which has followed various peculiar paths of development and is therefore more interesting than any other average North Estonian dialect or dialect group." (p. 3)

Although the research into the Estonian language made good progress also during the subsequent decades, almost all remains valid. Lauri Kettunen,

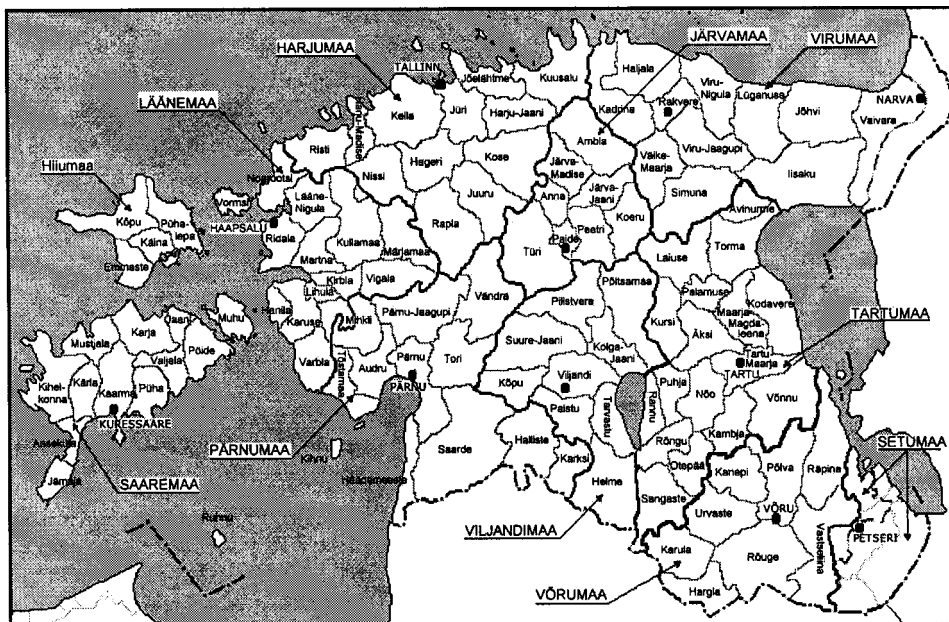


Figure 1. Estonian parishes.

who later became the first professor of Finnic languages at the University of Tartu, initiated instrumental research into the phonetics of Estonian dialects with the first volume of his study of the dialect of Kodavere (1913a). The second volume of the cycle caused some confusion in citation because the title of the dissertation in the form of a reprint (1913c) is different from its original title (1913b). Paul Ariste, who later became the first professor of Finno-Ugric languages at the University of Tartu, was the second researcher of the phonetics of Estonian dialects with his dissertation. The Kodavere dialect is extinct now and the Hiiumaa dialects are declining. Recent years research has added three dissertations that deal with the phonetics of Estonian dialects or at least contain also phonetic measurements (Pajusalu 1996; Parve 2003; Teras 2003). Thus, dialectal phonetics has firmly established itself in Estonia. At present the focus is on South Estonian.

2. Hiiumaa dialects and \tilde{o}

Paul Ariste's dissertation described all the monophthongs and diphthongs of the Hiiumaa dialects in various positions of a word and in various degrees of length. Any Estonian and Finnic linguist can come across surprising details and comparisons with neighboring dialects here. I will mention a few of them.

2.1. Developments of \tilde{o}

According to a widespread view in Estonia, the inhabitants of Hiiumaa and Saaremaa are not capable of pronouncing \tilde{o} , or if they have learned how to articulate it, they confuse \tilde{o} and \ddot{o} . Even today one can meet such people among the islanders. Paul Ariste, however, observed something else when investigating the Hiiumaa \ddot{o} . The original long \ddot{o} was somewhat raised to $\hat{o} \sim \bar{o}$ in all subdialects.

"In the dialects **Kas** and **Käi**, slightly also in **Phl** along with the above-described $\hat{o} \sim \bar{o}$ one can hear a different long \ddot{o} , namely in those words with the earlier \bar{e} . A few examples of the sound: **Kas** $p\bar{e}z\hat{a}z$, Pl $p\hat{e}z\hat{p}v$ 'bush', $r\bar{e}m\hat{u}z$ Gen $r\hat{e}mz\hat{p}$ 'glad' [---] i.e. the \ddot{o} that had developed from \bar{e} is not raised either as a long or an overlong vowel [---] Besides Hiiumaa the change $\bar{e} > \ddot{o}$ is also characteristic of Saaremaa. In the dialects of **Krj** and **Khk**, where the author had the opportunity to check the data by his own hearing, the \ddot{o} is acoustically completely identical with its Hiiumaa equivalent, e.g. **Khk** $r\bar{e}m\hat{u}z$, $v\bar{e}r\hat{a}z$." (p. 133)

In other words: in Kassari, Käina, Pühalepa, Karja and Kihelkonna speakers always distinguished between long \tilde{o} and \ddot{o} ; only the item, written according to Estonian spelling as \tilde{o} , was not pronounced as an illabial mid back vowel but as a low labial front vowel. In other places in Hiiumaa and the central part of Saaremaa the vowel \tilde{o} , both short and long, has merged into \ddot{o} . Paul Ariste was the first linguist who paid due attention to it although he did not discuss the possible reasons for such a pronunciation.

The rise of \ddot{o} can be best described in the framework of the development of an asymmetrical 3+4+2 system of long vowels (the figures designate the number of high, mid and low vowels, respectively) by means of the vowel shift $*\bar{e} > \ddot{o}$ into a more or less symmetrical 3+3+3 system. In the course of

the change $\bar{e} > \bar{o}$ the vowel \bar{e} , the most difficult one to acquire for Estonian children, was replaced by the vowel \bar{o} that was easier to articulate. Sometimes this merger has been considered a Swedish influence (Ariste 1931 : 77; Tauli 1956 : 199–200). As Estonian Swedish (except Naissaar in the Gulf of Finland) never developed an \bar{o} , the claimed Swedish influence is improbable (Viitso 2003 : 158). The reason for the dissolving of the sound into a more general \bar{o} in Hiiumaa and in central Saaremaa is more obscure. On the one hand, it is not impossible that during some period of time the pronunciation of \bar{e} was in non-prestigious in some places while adult \bar{e} -speaking Estonians — note that \bar{e} is still retained in the easternmost Saaremaa — aspiring towards the prestigious Hiiu- or Saaremaa pronunciation could not distinguish the unfamiliar to them \bar{e} from the more familiar \bar{o} . On the other hand, the functional load of \bar{e} and \bar{o} , particularly that of \bar{o} , is low, so the merger of \bar{e} and \bar{o} is not too disturbing. In this case the result of the merger of two sounds depends on the simplicity of pronunciation, i.e. the more economical solution is preferred. A similar rounding and fronting of $*\bar{e}$ occurred also in West Livonian where $*\bar{e}$ first underwent the general (Courland) Livonian raising of $*\bar{e}$ to \bar{e} (\bar{e} still occurs in East and Central Livonian), which later was rounded and fronted to \bar{i} in West Livonian.

2.2. Lack of \bar{o}

A series of observations related to \bar{o} seem at first sight be concerned only with Hiiumaa and the neighboring dialects:

”**Ema** and **Rei** depart from the rest of Hiiumaa in that the older generation has *oi* even in those cases where the common language has *õi* and the other Hiiumaa dialects *õi*. E.g., **Ema** Viiterna *joì* ‘was drinking’, *toì* ‘was bringing’; Kuusiku *toimi* ‘(we) were bringing’, *noìdpm̄p* ‘to use witchcraft’.” (p. 37)

”The original *ou*-diphthong that corresponds to *õu* in the common language is retained generally in **Ema** and **Rei**, fairly ordinarily in **Kas**, and elsewhere in Hiiumaa only in the usage of the older generation: **Phl** Sääre *loùn̄p a_oèc* ‘midday, during midday’, *oùn̄bu ~ oùm̄bu ~ oṁ̄bu* ‘apple tree’, *joùlu* ‘at Christmas-time’, *joùdu* ‘greeting, wishing strength’; *oùd-azi* ‘terrible thing, ghost’ and also *toùttust* ‘the pledge (partitive)’. **Kas** *mā soùttse* ‘I was rowing’, *oùn* ‘apple’, *o ù n à_oc ó* ‘(place name) Õunaku’, *poùd* ‘drought’, certainly also *où* ‘yard’, *poùwəz* ‘(inside) bosom’. **Ema** *oùn*, *oùwèz*, *êd toùkkò* ‘of good breed’. **Rei** *poùd*, *päikkè toùzèb*.” (p. 37)

”There are a few words that occur with *o* in a more old-fashioned language usage: *pohi* ‘north’, *joif* ‘horsehair’ (< *jouhi*). However, *o* is more common in the diphthongs *oi*: *joì* ‘was drinking’, *toì* ‘was bringing’, *noìdpm̄p* ‘to use witchcraft’ [---] and *ou*: *loùnà* ‘midday’, *soùdma* ‘to row’, *oùn* ‘apple’, *poùd* ‘drought’, then certainly also *ou* ‘a yard’, *toùzmp* ‘to rise’ etc. [---] One can come across the best preserved *o* on remote coasts and in forest villages. The fact itself makes one think that the *o* is a rudiment of a previous usage that is becoming extinct. [---] There are examples also from elsewhere in western Estonia where *o* is still preserved in the diphthongs under view or separately in a few words. First of all there are instances of the preserved *o* in the

southern part of Saaremaa, which shares some notably common archaic features with Hiiumaa [---]" (pp. 125—126)

It is surprising that in those words in Hiiumaa and its neighborhood there is *o* as it occurs in *õ*-less Coastal Estonian, Ingrian, Finnish, Karelian, and Veps but differently from all the other Finnic *õ*-dialects, especially other North Estonian dialects, Votic, North-East and East Estonian but also South Estonian and Livonian. Valdek Pall was the first linguist who discussed this paradox (1987 : 410—411). In Coastal Estonian, Ingrian, Finnish, Karelian and Veps, as well as in Proto-Finnic, *o* is original. Only the former *õ*-dialect of Central Vaivara has substituted the vowel *o* for *õ*. Hence one must nevertheless ask whether the *o* in Hiiumaa is original or restored through the shift $*\ell > o$.

Although the change $*\ell > o$ took place as a general merger in Central Vaivara, it is unlikely that in Hiiumaa the vowel *o* as an equivalent to *õ* of other North Estonian dialects only in certain phonetic environments could be explained by the change $*\ell > o$ because, as a rule, the ℓ should have changed into *ö* in Hiiumaa. The general change $*\ell > o$ in Central Vaivara owes its rise to two circumstances: (a) the *õ*-less Coastal Estonian of northern and eastern Vaivara was more prestigious than the former North-East Estonian of central Vaivara, (b) in Coastal Estonian (and in Finnish), *o* is the most frequent equivalent to the North-East Estonian (and Votic) *õ*. In addition, Hiiumaa is far off from Vaivara and there is no evidence for migration to Hiiumaa and its neighborhood from the Coastal Estonian or Finnish speaking area. So there are no reasons for supposing an outside influence for the restoration of *o* in Hiiumaa.

Instead we could suppose the restoration of *o* in order to avoid *ö* as a substitute for ℓ . In reality, however, maybe only in the case of $*\ell u$ there is a phonetic reason for considering the avoidance of the diphthong *öu* a possible cause of the occurrence of *ou*. So, in Hiiumaa we can find the diphthong *ou* in a few stems that have ℓ in all Finnic *õ*-dialects and, hence, should have the diphthong *öu* instead of *ou* in Hiiumaa:

"Where the original *ou* has been preserved, the original ℓu occurs as *ou*, e.g., **Phl** Sääre *lou̯c* Pl *lou̯wa_{c,D}* 'cheek, face, jaw'; Kuri *noũttõst* 'helplessness, irresolution (partitive)' [---] **Rei** Pihla *teĩz̄ē_D nou̯_D* 'other containers'." (p. 37)

In line with this statement by Paul Ariste one should recall that in the 1930s linguists still believed that in those words where the Estonian, Votic and Livonian *õ* has a corresponding sound *e* in Finnish, the vowel must be traced back to an original $*\ell$. As $*\ell$ in these words corresponds to *e* in Finnish, Ingrian, Karelian and Veps, then the framework of Erkki Itkonen's theory (1946) suggests that *õ* in such words comes from the change $*e > *\ell$. However, the following claim makes us cautious:

"Concerning the words where *o* replaces the Proto-Finnic ℓ , the dialects of Hiiumaa are generally similar to North Estonian: *kol̄n̄â* 'yellow', *kōr̄_D*, *kōd̄â_r* 'spoke', *hōv̄ūn̄e* ~ *ōv̄ūn̄e* 'horse' etc., *kōlv̄â_B* ~ *kōlv̄â_B* 'be of use, serve' [---]" (p. 35)

This list presented above corresponds to the list of paragraph 280 in all editions of Lauri Kettunen's book on historical phonetics of Estonian (cf. e.g.

Kettunen 1962 : 132). According to Lauri Kettunen, *o* in such words results from a North Estonian exceptional development of **ē*. As **ē* in these words corresponds to *e* in Finnish, Ingrian, Karelian and Veps, then ordering Erkki Itkonen's theory before Lauri Kettunen's theory yields the drift **e > *ē > o*. The last item listed by Paul Ariste represents a special Hiiumaa case of the type. One can add another Hiiumaa case to the list, cf. Kassari *ohva*, Reigi *ohu* 'heifer' (p. 33) whose cognates are *ōhv* elsewhere in North Estonian and *hieho ~ hiehv* in Finnish. All these words are borrowings from non-Finno-Ugric. Their equivalents in Baltic languages have usually *e* in their initial syllable. The stem *kodar* has possibly an equivalent with *o* even in Mordvinic, cf. Erzya *kodoro*, Moksha *kodârks* 'stem, bine'.

The vowel *o* in Mordvinic and Hiiumaa leads us to an untraditional explanation of the whole set. So, these stems could possibly be old separate loans in Mordvinic and Finnic dialects that in some places were received already before Finnic adopted sound patterns with *e* in stems with back vowels in non-initial syllables that contradicted the principles of vowel harmony. In such patterns **e* of the donor languages was first replaced by **a* (Viitso 1978 : 90–91; 2003 : 144–147) and **o*. Finnic later adopted sound patterns with *e* in stems with back vowels in non-initial syllables; in one part of Finnic dialects such patterns gave rise to the change **e > *ē* that partially (and temporarily) restored vowel harmony. If the assumption that **o* replaced **e* is true, then there are no criteria that would permit us to decide whether *ē* as the correspondence of both Hiiumaa or Standard Estonian *o* and Finnish *e* in Livonian, Votic, and some Estonian dialects comes from an earlier **o* or **e*.

Moreover, the cases of *o* in Hiiumaa presented by Paul Ariste actually suggest a deep historical difference between North Estonian and the dialect of pre-historical Saaremaa, which was the main starting point of the Estonian inhabitants of Hiiumaa. If *o* retained its original quality and did not come from the **ē*, one should also reckon with the possibility that the dialect of Estonian western islands was originally an independent Finnic dialect already in early times when North Estonian, East Estonian, North-East Estonian, and proper Votic need not have emerged as yet. Accordingly, the Finnic linguistic area can be divided on the basis of the original spread/lack of the vowel **ē* into six groups, namely Livonian, South Estonian, Insular Estonian, North Estonian, Chude (East Estonian, North-East Estonian, Votic proper), and Neva (Coastal Estonian, Kukkuzi Votic, Ingrian, Finnish, Karelian, Lude, Veps) instead of the division into five groups I have proposed earlier (Viitso 1978; 1985). This point of view is supported by the following observation by Paul Ariste:

"One can hear only the youngest persons pronouncing *mõistmp ~ mõistmv* 'to understand', *mõistüz* 'reason'. The older and middle generations still use *muistmp ~ muistmv*, *muistüz*. Note that besides well-known notions of common language the stem has other meanings: *ta ruttõ muistap_senēst* 'it has a quick effect on him/her'." (p. 125)

The pronunciation of the youngest persons can be explained as a mispronunciation of the diphthong *õi* of Standard Estonian. The diphthong *ui* is more interesting. Eemil Nestor Setälä (1917 : 366) used the same verb stem as one of the three criteria in his classification of Finnic dialects: the verb

stem *muista-* 'to remember' was considered characteristic of Finnish, Karelian, Veps (and Ingrian) and the verb stem **moista-* 'to understand' characteristic of Livonian, Estonian, and Votic. In Hiiumaa the diphthong of the first group and the meaning of the second are combined.

3. *ü* in words with original back vocalism

The dialects of Hiiumaa reveal a peculiar phenomenon that is connected with *õ*, or more exactly, with the lack of *õ*. Up to now Paul Ariste has provided the most thorough treatment of this phenomenon:

"Speaking about *ü* in the primarily stressed position it is necessary to specially mention a number of such words in which the *i* of the common language corresponds to *ü* in the dialects of Hiiumaa. Those typical of Hiiumaa dialects include *münü* 'my', *sünü* 'your (Sg)', *sülü* 'bridge, highway', *rüHM* 'strap', *rüND* 'breast', *raññi rünnüz* 'hame strap', *pülbõmp* ~ *püldümp* 'to hurl', *müttü* Gen *müttme* 'several', *püzüt* gen. *püškõ* 'a little, little', *tükküsüB* 'it throbs', *purüks-pühüks* 'to bits and pieces' [---] In the present-day usage the *ü* is disappearing. Instead, the common-language *i* replaces it. [---] As appears from the examples above, the *ü* occurs in words with back vocalism. [---] Interesting examples of the case include *münü*, *sünü* ~ Fi *minun*, *sinun*; *minõ* ~ *minä* 'I', *sinõ* ~ *sinä* 'you (Sg)' ~ Fi. *minä*, *sinä*. The fact leads us to believe that at one time the dialect had two different *i*-s. Considering the general phonetic nature of Finnic languages with vowel harmony as an essential feature, one can suppose that the original form of Hiiumaa words containing back vowels had a less advanced *i*-type sound, namely of a central type *j* one which corresponds to *ɟ*: **mjnün*, **sjnün*, **rjnta* etc. When the central vowel *ɟ* changed into the labial vowel *õ* in the dialects of Hiiumaa and Saaremaa, the change in the homorganic *j* > *ü* took place simultaneously." (pp. 128—129)

According to Paul Ariste, the front vowel *ü* represents the former central vowel *j* that occurred in a word with a back vocalism and is in conformity with vowel harmony. Vowel harmony is a phenomenon of ascribing a certain characteristic qualitative feature (frontness vs. backness, labiality vs. illabiality) of the initial syllable also to the vowels of the following syllables. The opposite phenomenon, that of ascribing a certain characteristic qualitative feature of the vowel of a non-initial syllable of a word or a stem to vowels of preceding syllables, is called metaphony or umlaut. In view of such Finnish alternations as *minä* 'I' : *minun* 'my' we must reconstruct alongside the genitive form **mjnün* the nominative form **minä*. The alternation **j* : **i* can best be explained as resulting from metaphony. What remains obscure is the original quality of the vowels. To avoid the metaphonic explanations of central vowels *j* and *ɟ*, it is essential to assume that both *j* and *ɟ* had either occupied their positions already before the development of vowel harmony or they come from some other back vowels. As Paul Ariste noted, Lauri Kettunen briefly considered both explanations in connection with examples from the Kihnu dialect (1929 : 130). Lauri Kettunen, however, the former seems to have preferred vowel harmony.

We can detect an interesting flaw in the timing of vowel harmony:

"At present no trace of vowel harmony has been found in the dialects of Hiiumaa, and one can suppose that its loss occurred quite long ago. At the time when $\epsilon > \ddot{o}$ and $j > \ddot{u}$ the vowel harmony had to be characteristic of the dialect. Hence the labialization of central vowels is one of the earliest phonetic changes in the dialects of the islands." (p. 129)

At any rate, at the time when ϵ and j became front vowels in words having back vowels in their second syllables, neither vowel harmony nor metaphony was effective.

The following contrast offered by Paul Ariste is of paramount importance:

"As has become clear from the above examples, j is not replaced by \ddot{u} in all words with back vowels. The words *sicà* 'pig', *rikkà* 'rich', *liñd* 'bird', *ištù* 'sit down!' [---] occur instead of the expected **sücà*., *rükkà*., *liñd*. [---] Among the dialects of islands the traces of j have best survived in **Khñ** where the original ϵ is represented by ϵ , the original j is represented by $\acute{\epsilon}$. In that dialect, by the way, $\acute{\epsilon}$ occurs in *l'èñd* 'bird', *šépdémé* 'of bond (gen.)', *jéštét* 'seat (part.)', [---] *r'édà* 'line', *p'èñd* 'surface', [---] When the Hiiumaa dialects still had a full vowel harmony, as is now in **Khñ**, the incidence of the words with j , resp. \ddot{u} must have been more consistent." (pp. 129–130)

The Kihnu examples clearly indicate breaking of the former $*j$ into $*i\acute{\epsilon}$. The high and very short i adhered to a preceding consonant or resulted in a word-initial j . The two correspondences \ddot{u} and i of the Kihnu $*j$ in Hiiumaa can be most simply explained in words with a former or retained back vowel in the following syllable by loss of labialization due to the influence of Standard Estonian equivalents. Still there exists the possibility that the distribution of \ddot{u} and i in the first syllable of words with back vowels in the second reflects the distribution of two former central vowels, namely that of labial $*y$ and illabial $*j$. In that case in Hiiumaa the $*y$ has merged into \ddot{u} and $*j$ into i . Even in that case both $*y$ and $*j$ can, on a more distant plane, go back to one and the same vowel. The possibility of $*y$. The labial vowel is suggested first of all by the vowel o that corresponds to the vowels $\ddot{u} \sim i$ in the 1st and 2nd person singular personal pronouns in Lappic and Mordvinic (North Lapp *mon, don*; Erzya and Moksha *mon, ton*).

4. Breaking of short mid vowels

Paul Ariste had an excellent ear for phonetics and, at the same time, a good ability to see a problem in every outwardly slight nuance of pronunciation:

"Various **Phl** language informants have been heard to articulate the velarization of the first-syllable o where that syllable is overlong: Sääre *k^uok* 'haycock' (but Gen *kokkà*.), *p^uops* 'cottager' [---] Acoustically $^u o$ reminds of the pronunciation of the Russian stressed o in the words *more* (= *m^uórá*), *горы* (= *g^uóry*). The same informants pronounce a slight i before the front vowel e : i_e , thus the palatalization. This kind of pronunciation of vowels with a high onset is a result of a quite intense articulation. When beginning to articulate a vowel, the tongue, for attaining a higher intensity, rises higher than usual. That $o > ^u o$ and $e > i_e$

have first come forth namely in overlong syllables serves as another proof of the claim that diphthongization proceeded from the strong grade of main-stressed syllables. Formerly the diphthongization of long mid vowels in the Viru, Järva, Harju and other Estonian dialects as well in Finnish originated from similar intense articulation. Outside the area of the Hiiumaa dialects the phenomenon $o > uo$ ($e > ie$, $ö > üö$) can be met even elsewhere in Estonian dialects, like in Leivu [---]" (p. 36)

If Paul Ariste had pointed it out, this peculiarity in the pronunciation of some informants in Pühalepa could well have remained unnoticed. Paul Ariste's explanation has not been proved/disproved to date. But if we observe where such a breaking of a short mid vowel has taken place then, indeed, we can find it in Leivu, in some parts of Central North Estonian, in Livonian, and in some parts of Žemaitė Lithuanian (in Kretinga and Tirkšaliai). Actually, in Lithuanian it occurs only in unstressed syllables. Everywhere else, except for Pühalepa, breaking has taken place also for the long vowel, and the breaking of long $ō$, $ō̄$ and $ē$ is an interesting areal phenomenon in Finnic, Lappic, Baltic, and also Slavic languages. All such languages either have or have obviously lost the contrast between palatalized and unpalatalized consonants. The Hiiumaa dialects do not know palatalized consonants. Still the breaking of short vowels or, in other words, velarization of o and palatalization of e in Pühalepa most probably shows traces of a very old velarization and palatalization of Finnic consonants in the onset of back vowels and front vowels, respectively. It is to some extent similar to what can be heard in Karelian, Veps, Southern Lapp, and Mordvinic. A number of researchers suppose a recent influence of Russian on Karelian, Veps, and Mordvin in these instances. These languages do exhibit some Russian influence. However, both Hiiumaa and South Lapp implicate that the common features shared by Karelian, Veps, and Mordvinic with Russian need not necessarily be only a Russian influence.

5. Reduction and centralization

Paul Ariste's dissertation paid relatively much attention to two associated phenomena that have not been dealt with in Estonian linguistics more recently, namely the reduction of vowels (i.e. an indefinite articulation of vowels) and the centralization of the language (i.e. the fact that certain syllables are more prominent and/or by their structure and admissible variety of occurrence of sounds considerably more complex than other syllables).

"Reduction makes the perception and reproduction of the whole Hiiumaa dialect somewhat difficult for the strangers." (p. 24)

"Reduced vowels are acoustically rather close to one another. The differences between their nuances have not been possible to record." (p. 27)

"Reduction is not unknown to the western Estonian mainland either although it is very weak here. Outside the area of the Estonian language, the reduction of non-initial syllables is well known in Livonian [---] One would not wish to regard only as an interesting coincidence the fact that in this case Livonian and Insular Estonian share similar phonetic relations. There are yet other phenomena, like $au > ou$ where Livonian and Insular Estonian go hand in hand. [---] Probably through

Livonian, reduction is inherent in those Latvian dialects that are located in the neighborhood of Livonian [---]" (pp. 28—29)

Thus Paul Ariste explained in a simple manner the phenomena that were unclear in a variety of ways. At the same time Paul Ariste was the first to indicate certain typological similarities between the dialects of the Estonian islands as well as Livonian and certain dialects of Latvian, thus pointing to close *Sprachbund* ties, so to say, between respective areas. However, the reduction of Hiiu-maa dialects enabled Paul Ariste to make an essential theoretical specification:

"[---] concerning reduction in the Hiiu-maa dialects the question arises whether Estonian is a strongly centralizing language or not [---] A strongly centralizing language form is one in which, due to some stress conditions, the phenomena of quantity, quality, and tonality of speech sounds are concentrated on one part of the word. Thus, for example, in Estonian a long vowel cannot occur farther away in the word. In Estonian the first syllable is melodically more rising than any other part of the word. The rise is particularly expressive when the first syllable is overlong [---]" (p. 29)

"At any rate, the dialects of Hiiu-maa (and Saaremaa) show a stronger centralizing tendency than eastward Estonian dialects. In Hiiu-maa there are dialect speakers who in conditions discussed here reveal no qualitative distinctions between certain speech sounds in farther syllables of a word, i.e. off the central syllable. So *a* and *u* as well as *e* and *i* have merged into an indifferent *ə*-sound. [---] The centralization centre in Estonian need not necessarily be the syllable with the strongest stress but one that is the longest in the present usage. In the Hiiu-maa dialects the centre is the longest syllable but not one with the primary stress, which is suggested by the relations in the *õmälvd* 'hops' (Rei Pihla) where the *u* of the first syllable is reduced [---]" (pp. 30—31)

"Thus, Estonian is a language that, in a different way, centralizes by quantity and not by stress relationships. If the first syllable is overlong, the word is strongly centralizing. But where the first syllable is either short or full-long, the centralization is weaker and it is spread over two syllables, the first one having the stressed centre and the second — the quantitative and qualitative centres [---] The shorter the quantity of a single sound or sound combination, the less intensity it reveals in articulation. The less the intensity in articulating the sound, the higher is its tendency of reduction." (p. 31)

The conception of centralization as formulated by the German phonetician A. Schmitt in 1924, as well as the idea of two centralization centres, have never found a wider following. But we can continue the discussion, claiming that if a word has two competing focal centres, it is highly probable that one of them will disappear sooner or later. One of the probabilities is that the first centre is discarded and the primary stress is transferred from the short first syllable with a short, reduced vowel to the longer second syllable. There are several Finno-Ugric languages whose lexical stress is not always on the first syllable, namely Moksha, Mari, Jažva Komi, and partially Permian Komi. In some languages low vowels whose intrinsic duration is longer than that of higher vowels have attracted the primary

stress to non-initial syllables; this is the case in Meadow and East Mari and Jažva Komi. The shorter intrinsic duration of high vowels may also cause reduction of the high vowels and lead to loss of reduced vowels together with the stress shift to the former non-initial syllable. This has been the path of development of Erzya *prá* 'head' from the earlier **perä*; note that in Erzya the neutral primary stress is on the initial syllable.

6. The rise of Estonian distinctive quantities

In most Estonian dialects there exists a tripartite correlation of so-called distinctive quantities of stressed syllables in feet consisting of at least two syllables, traditionally referred to as quantity 1, quantity 2, and quantity 3. A stressed syllable (and the corresponding foot) is of quantity 1 if the stressed syllable is open and ends in a short monophthong. A stressed syllable that ends in a consonant, long monophthong, or diphthong is either of quantity 2 or quantity 3. Hence, syllables of quantity 1 are short; syllables of quantities 2 and 3 are long. Statistically, the stressed syllables of quantity 3 are longer than syllables of quantity 2 and even contain a segment whose duration can be prolonged. Usually the directly following unstressed syllables are shorter after syllables of quantity 3, longer after syllables of quantity 2, and longest after syllables of quantity 1. Only a syllable of quantity 3 may compose a foot and a sentence. Paul Ariste's dissertation refined the theory of quantity alternation, notably the theory of the rise of the contrast and alternation between syllables of quantity 2 and quantity 3, i.e.:

"Proceeding from the onetime Estonian quantity relationships: *laulama* 'to sing' : *laulan* 'I sing', *laulu* 'song' : Gen *laulun*, *sāri* 'island' : Gen *sārēn* and also *metsä* 'forest' : Gen *metsän*, i.e. the first syllables were of the same quantity in either case, we face major purely phonetic difficulties if we attempt to explain why in some cases the second syllable vowel is retained and lost in other cases (Collinder FLQW 21—50; cf. also Setälä Quantitätswechsel in different places). Similarly, it is phonetically highly uncommon that in the case of a vowel loss the preceding part of the word had to lengthen even more for compensation. The author supposes that the order of change was just the opposite. The long first syllable began to change in quantity and that change later caused the shortening, reduction, and loss of successive vowels.

The reason for the change could lie in the example of stops that obviously had the relationship **vakka* 'bushel': Gen **vaĳkan*. Similarly appeared also **laulu* : *laūlun*, *metsä* : *meĳsän*, *sāri* : *sārēn*. [---] If now the quantity distinction was established, depending on the closeness or openness of the second syllable, it gradually became an essential distinctive feature. [---] Thus in the examples above the first and second syllables became more distinguishable from each other. On the one hand, the first syllable has become longer and the second shorter so that the forms *vaĳka*, *laūlu*, *meĳsä*, *sāri* were established. In the case where the first syllable was shorter, the vowel of the second syllable lengthened, and as a result *vaĳkān*, *laūlun*, *meĳsän*, *sārēn* etc. were established. [---] In the types of *laūlu*, *vaĳka*, *kañtama-*, *lūpsäminen* etc. the unstressed vowel of the second syllable became shorter and shorter up to a reduced vowel, which finally disappeared altogether." (p. 146)

In explaining the formation of the system of Estonian quantity system, Paul Ariste proceeds from the postulate that everything began with lengthening or shortening in the first syllable; its lengthening brought about shortening of the second-syllable vowel; that shortening brought about lengthening of the second-syllable vowel. Hence when explaining the formation of the quantity of the second-syllable vowel, Paul Ariste implemented what is known today as the isochrony (of foot). At the same time Paul Ariste rejected the opposite theory, presented first by Michael Weske (1873) and specified by Björn Collinder (1929), according to which lengthening of the first depends on shortening of the second-syllable vowel (i.e. the so-called compensatory lengthening), though Paul Ariste admitted the shortening of the first syllable before a closed, i.e. a long second syllable. Therefore, the explanation offered by Paul Ariste may seem more contradictory. However, Paul Ariste was right at least in supposing that the formation of the Estonian quantity system could not begin from shortening and loss of short vowels in the open second syllable. There are languages that have shortened or lost more such vowels than Estonian but do not have any comparable quantity system.

Paul Ariste's claim that all these changes could have been based on the example of stops before open and closed unstressed syllables, e.g. **vakka* : **vakkān* and thereafter *laulu* : *laūlun*, *metsä* : *metsän*, *sāri* : *sāren* has repeatedly been referred to in Estonian linguistics. On the other hand, Valter Tauli (1954) noticed that in accordance with Jussi Lauroselä's (1922 : 232) measurements, long vowels, diphthongs, and syllable-final stops alternate similarly in Etelä-Pohjanmaa Finnish. Kai Donner (1912 : 36) had measured similar results from Aunus Karelian even earlier. Still nobody ever regarded the Etelä-Pohjanmaa Finnish and Aunus alternation as a quantity alternation belonging to the type of Finnic grade alternation or gradation. It was because neither speakers nor researchers perceived the differences in duration. So there is no reason to suppose that the alternation of geminate stops like **vakka* : **vakkān* would be anything special or spectacular in comparison with other instances. Probably all these alternations are due to the isochrony of the foot that the speaker would not register consciously. I have admitted it earlier already (Viitso 1962 : 56—57) that the actual rise of the gradation must lie somewhere else and that gradation has to consist in morphophonological alternations, in the first instance. In other words, one can speak about gradation only if a subconscious quantity alternation by the speaker becomes his/her consciously attempted alternation, i.e. a standard. It does not mean that the positional alternations as an assumption of morphophonological alternation could or should be ignored. However, the main problem of the history of gradation is what made the speaker pass the quantity gradation unnoticed so far and systematically attempt and amplify it. Similarly, there exists a related question of when did Estonian develop from an not strongly centralizing language into a strongly centralizing language.

It is interesting that Paul Ariste did not mention centralization in connection with gradation. He did not do it even later when presenting his views on the history of formation of gradation in greater detail, cf. Ariste 1947.

Given that **vakka* : **vakkān* and **pata* 'pot, cauldron' : Gen **patān* represent a subconscious alternation resulting from subconscious foot isochrony, the first essential shift in the Estonian quantity system took probably place at that stage of language development when such partitive forms, violating the old system of stress and duration patterns, as **vakkā*, **patā* were introduced, as well as

illative forms, such as **vakkān*, **patān* in which case either syllable made up a competing centre attracting stress. In addition, more or less simultaneously with Votic, the Estonian word-final **-n* must have started vocalizing, cf. **vakkān* > **vakkāã* > **vakkā*. Apparently, the development of a long monophthong in the forms of the type **vakkā* and **vakkā* required a clear polarization, i.e. depending on the isochrony of the foot, the duration alternations on the boundary of stressed and unstressed syllables had to become conscious and attempted alternations. A new centre can be discarded either by increasing the weight of the first syllable (i.e. by relative lengthening of the syllable), or by decreasing the weight of the second syllable. In Estonian changes took place in both directions, cf. (a) **vakkā* > **vakkā*, **vakkān* > **vakkān*, **patān* > **pattān*, followed by vocalizing the word-final **n* (**vakkān* >> **vakkā* and **pattān* >> **pattā*), (b) **vakkā* > *vakkā*, which drew together also long final vowels in other non-initial syllables, cf. *vakkā* > *vakkā*, **pattā* > *pattā*.

7. Binary or ternary oppositions?

Paul Ariste's doctoral dissertation reflects the background of the development of his conception of the phoneme. Paul Ariste was convinced that the Estonian language could prove that the generally accepted binary principle, elaborated by Nikolai Trubetzkoy, was not universal and that ternary oppositions are possible. The following excerpt is typical of his opinion, with a special reference to the Hiiumaa dialects:

"In Estonian, *a ~ ā ~ â*, *e ~ ē ~ ê*, *i ~ î ~ î* etc. must be considered three independent phonemes as quantity degrees of vowels have definite lexical or morphological tasks that should not be mixed up, i.e. one degree cannot be replaced by another. Similarly, in our language, *aũ* and *aũ*, *eĩ* and *eĩ*, *äĩ* and *äĩ* etc. (cf. *laulu* 'song (Gen)', *laulu* 'song (Part)'; *seina* 'wall (Gen)', *seina* 'wall (Part)'; Gen. *käija* from *käi* 'grinding wheel' and *käija* (actor noun from the verb *käima* 'to go') [---] In Estonian also *n ~ ñn ~ ñn*, *c ~ ċc ~ ċc* [---] must be considered independent phonemes (*kanu* 'hens (PartPl)', *kanu* 'pitcher (Gen)', *kanu* 'pitcher (Part)'; *vaga* 'pious (Gen)', *vakkā* 'bushel (Gen)', *vakkā* 'bushel (Part)' [---] So we can see that Estonian cannot be accommodated into the framework of the general concept of the phoneme, but it is necessary to draw up quite different rules for it. [---] The Hiiumaa dialects highlight the need to extend the concept of the phoneme as the especially evident one, because, as the table shows, here a definite quality is linked to a definite quantity of a speech sound, which cannot be mixed up without distorting the exact understanding." (p. 136)

At the beginning of the 1960s it appeared (cf. Harms 1962; Viitso 1962) that in common Estonian one must not postulate three different phonemes for each sound quality and two phonemes for each diphthong or consonant cluster according to their distinctive quantities. Paul Ariste drew his general conclusion from quantity degrees of vowels in Hiiumaa:

"It should especially be emphasized that quality differences are hardly perceivable in our common language so that they have no practical role. In the Hiiumaa dialects, the situation is quite different. As is the case in the southern part of the Estonian linguistic area, here also predominates the s.-c. West-European language situation, known in

Germanic and Romance languages [---] Namely, long vowels considerably differ from the short ones by quality." (p. 62)

"For the Hiiumaa dialects, the peculiar phenomenon needs a solution that is quite contrary to South Estonian; the full-long \bar{o} is articulated higher than the overlong \hat{o} . The Hiiumaa dialects reveal a particularly characteristic feature, namely that overlong vowels have two peaks. When articulating an overlong vowel at the onset there is first a rise at the place of articulation, followed by a fall, and at the end there is another rise. Thus, there is a diphthong whose both components consist in a speech sound of one and the same quality. The measurements of the quantity of Hiiumaa speech sounds indicate that the duration differences of overlong and half-long vowels are not obvious. The two peaks mentioned make the main difference." (p. 65)

"In Hiiumaa dialects the vowels, on the contrary, are very sensitive to the changes in quantity nuances. The quantity and vowels in these dialects can be regarded as more closely connected with each other than elsewhere in the Estonian linguistic area. The nuances in vowels depending on quantity are no optional phonetic variants among themselves but entirely independent phonemes that should not be mixed up when correctly speaking the dialect. The following table shows how the quality of vowels depends on their quantity:

\hat{a}	\bar{a}	\hat{a}_o	a	v	
\hat{a}	\bar{a}	\hat{a}	a	v	
\hat{o}	\bar{o}		$o \sim \varnothing$	o_v	
\hat{e}	\bar{e}		$e \sim \varnothing$	e	
\hat{o}	\bar{o}		$\ddot{o} \sim \ddot{o}$		
\hat{o}	\bar{o}		$\ddot{o} \sim \ddot{o}$		
\hat{e}	\bar{e}	\hat{e}	\ddot{a}	(ε)	
\hat{i}	\bar{i}		$i \sim \dot{i}$	\imath	(\acute{e})
\hat{u}	\bar{u}		$u \sim \dot{u}$	u_v	(\acute{o})
			$\ddot{u} \sim \ddot{u}$		

(p. 135)

The table is hard to follow. In order to make it better understandable, the table below shows the occurrences of vowels as single vowels in three distinctive quantities (Q1, Q2, Q3), and as monophthongs in the 2nd syllable (half-long vowels occur after syllables of Q1 and Q2, short vowels after syllables of Q3 and even after syllables of Q2), and in an additional column, the most regular historical reconstructions of the original quality of vowels:

	Q3	Q2	2nd syllable	Q1	2nd syllable
* a	\hat{a}	\bar{a}	\hat{a}_o	a	v
* a	\hat{a}	\bar{a}	\hat{a}	a	v
* o	\hat{o}	\hat{o}		$o \sim \varnothing$	o_v
* e	\hat{e}	\bar{e}		$e \sim \varnothing$	e
* \ddot{o}	\hat{o}	\bar{o}		$\ddot{o} \sim \ddot{o}$	
* \varnothing	\hat{o}	\bar{o}		$\ddot{o} \sim \ddot{o}$	
* \ddot{a}	\hat{e}	\bar{e}	\hat{e}	\ddot{a}	(ε)
* i	\hat{i}	\bar{i}		$i \sim \dot{i}$	\imath (\acute{e})
* u	\hat{u}	\bar{u}		$u \sim \dot{u}$	u_v (\acute{o})
* \ddot{u}				$\ddot{u} \sim \ddot{u}$	

So we can see that in Hiiumaa, apart from the rest of northern Estonia, the vowel quality depends fully on its place in the word and the degree of gradation at least for the low back illabial and for all mid vowels. In addition, both the historical short **ö* and short **e* are merged in *ö*, and there are no reflexes of long **ü* in the table. Moreover, there is no long counterpart of the short vowel *ü*.

We can see that although Paul Ariste introduced phonology to Estonia, he remained a phonetician of his time and was totally unwilling to play some logical plays characteristic of phonology. His measurements showed that the expected full-long and overlong vowels in dialects were practically of the same duration in Hiiumaa Estonian. Therefore, he saw no obvious basis for applying the principle of complementary distribution.

8. Summing up

Paul Ariste's doctoral dissertation has not become outdated in the course of years. On the contrary, his dissertation saved for linguists one of the most interesting Estonian dialect areas. Even when using the dissertation with minimum skills, it can be of great help in understanding the state and development of Estonian dialects as well as our common language. If someone does not like the theoretical assumptions of the dissertation, (s)he is free to apply his/her own assumptions. The data presented in the work survives all the theories, at the same time being capable of overthrowing various fashionable theories. Moreover, such a subject matter becomes the more valuable, the more a living language departs from it. Paul Ariste's dissertation offers numerous unsolved problems for researchers of today and tomorrow.

Abbreviations

Emm — Emmaste (in Ariste 1939 **Ema**), **Kas** — Kassari, **Khk** — Kihelkonna, **Kh** — Kihnu, **Krj** — Karja, **Käi** — Käina, **Phl** — Pühalepa, **Rei** — Reigi.

Nom — nominative, **Gen** — Genitive, **Part** — partitive, **Pl** — plural.

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ТИЙТ-РЕЙН ВИЙТСО (Тарту)

**КОММЕНТАРИИ К ДИССЕРТАЦИИ ПАУЛЯ АРИСТЭ
О ФОНЕТИКЕ ДИАЛЕКТОВ ЭСТОНСКОГО ЯЗЫКА
ОСТРОВА ХИЙУМАА**

Докторская диссертация Пауля Аристэ «Hiiu murrete häälikud» (Tartu 1939), защищенная в 1939 г., почти забыта и недоступна непосвященным языковедам, так как не вошла в представительную библиографию «Bibliographia Studiorum Uralicorum 1919—1987». Все же диссертация не утратила своего значения, так как содержит исключительно богатый и ценный материал и глубокий анализ звуковой системы диалектов эстонского языка острова Хийумаа, уже тогда позволивший пересмотреть ряд старых соображений о синхронической и диахронической фонетике/фонологии эстонского языка, а также переоценить или уточнить многие положения исторического развития звуковой системы прибалтийско-финских диалектов и в будущем. В статье рассматриваются и обсуждаются следующие проблемы: (1) развитие или отсутствие *õ* [e], (2) появление *ü* в словах с исходным вокализмом заднего ряда, (3) преломление гласных среднего подъема, (4) редукции и централизации, (5) возникновение оппозиции трех степеней длительности в эстонском языке и (6) т. н. тернарные оппозиции.