

указанных формантов в северносамодийских языках является в последнее время объектом спора между исследователями. Реконструкции П. Саммаллахти, на наш взгляд, достоверны: они подтверждаются данными из других самодийских языков (ср. наши реконструкции этих формантов для прасамодийского языка соответственно **-jštV*, **-kVtV*, **-kV-*, сходные с реконструкциями П. Саммаллахти; см. А. Кйппар, указ. раб., особенно стр. 50, 125—127, где коротко реферированы также точки зрения других исследователей). Наречия места и образа действия на *-η* образованы, по П. Саммаллахти, при помощи падежного окончания генитива (стр. 94). Но говорить о наличии в них окончания генитива не совсем правильно, так как здесь мы имеем явно дело с очень древними функциями прауральского конкативного суффикса **-n*, а не с разновид-

ностью употребления генитива, т. е. падежной формы с функцией выражения обладателя в широком значении. Внимания заслуживает вывод автора книги о том, что окончание латива *-η* в конце послелого *nān*, присоединенного к формам двойственного числа имен (см. пример выше), возводится к **-ηə* (а не просто к **-η*), поскольку 1) в нем выступает долгий гласный (вместо краткого), 2) **-ə* сохранился в *nānqal* 'мне', 3) **-η-* не перешел в *-n-* в *nānta* 'ему' (стр. 37, 134). Много интересных деталей можно найти и в изложении и анализе спряжения и словообразования, но мы не будем отнимать время у тех коллег, которым, как мы надеемся, уже захотелось познакомиться с самой книгой П. Саммаллахти.

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Kullo Vende, *Eesti vokaalide põhitooni mõjustavaid foneetilisi tegureid. Väitekiri filoloogikandidaadi teadusliku kraadi taotlemiseks*, Tallinn 1974.

On June 5, 1974, the Council for History and Philology of the Social Sciences Department of the Estonian S.S.R. Academy of Sciences heard a public discussion of Kullo Vende's thesis "Phonetic Factors Conditioning Pitch in Estonian Vowels", submitted for the scientific degree of Candidate of Philology. The official opponents were Academician P. Ariste (Tartu) and L. Kukulšičikova, C. Ph. (Leningrad).

It is for some fifty years now that the present writer has kept abreast of the development of phonetic sciences in Estonia. L. Kettunen provided a firm basis for experimental phonetics through an analysis of the phonetic peculiarities of one Estonian dialect; W. Peters took a step forward with his studies of intonation and quantity in Estonian. The present reviewer, too, can be considered an adherent of those two old schools: having begun his experimental work with the kymograph, the artificial palate, the laryngeal capsule and the nasal olive, he finally came to use the oscillograph, but this was the utmost he achieved. When the Institute of Language and Literature of the Estonian S.S.R. Academy of Sciences acquired a

phonetics laboratory and Georg Liiv took charge of it and of the research done in it, the science of phonetics in Estonia was placed on an entirely new foundation. This laboratory has trained its present head, Arvo Eek; and it has also trained Kullo Vende, the author of the thesis being reviewed. Owing to his papers published in various languages, K. Vende has been known for some time already to Soviet and foreign phoneticians and scholars interested in phonetics. The present thesis is a new achievement in Estonian phonetics. It is also a considerable achievement in the field of general phonetics.

The reader of the thesis is immediately struck by the author's extensive reading and by his erudition in the analysis of the literature. The reader observes at the very outset that the author favours those phoneticians who have advanced the idea of the basic intonation contour. Moreover, this concept has been usefully elaborated by the author.

In broad outline, the concern of Vende's investigation is in what way and how much various phonetic factors affect the movement of the fundamental frequency

laid down by the hypothetical basic contour. Specifically, it undertakes to show how some factors may influence pitch at the beginning of a vowel, others may control the extreme or final values of pitch, while still others may change the speed or direction of pitch movement, etc.

The author has many correct starting-points. One of the correct basic standpoints is that the factors are different for each language and that even similar factors may produce different effects in different languages.

The pitch relations of Estonian vowels had been almost uninvestigated. That is why Vende set out to analyse these relations from all aspects. Correct and successful experiments were run to determine the relative intrinsic pitch of Estonian vowels. The perception of pitch differences was also traced systematically. The author's method is faultless, and his results are based on a sufficient amount of material. The speakers recorded (radio announcers) speak without any noticeable dialectal features. The choice of listeners used in psychoacoustical tests was also expedient. It is noteworthy that the analysis of both the measurement data from recordings and the listeners' responses always takes into account, and eliminates, chance variation.

The author of the thesis gives a graphic display of the values of the initial pitch, final pitch, peak pitch, crest pitch, and average pitch of test vowels. Listening tests have provided evidence on the estimation of pitch differences in pairs of vowels as well as pitch movement in single vowels. The analysis of all experimental results is extensive and thorough. The author has arrived at new conclusions regarding the average pitch (as well as pitch values at various measurement points) of \bar{o} . He states quite categorically that "it is time to reject the traditional standpoint that the Estonian \bar{o} is a mid vowel". He declares that \bar{o} certainly is rather a high than a mid vowel, contrary to the traditional view. He even supposes that \bar{o} "might well be the highest of all Estonian vowels" from the viewpoint of articulation, and recommends that its phonetic transcription should be based on the symbol *i* rather than *e*. Although Vende has found additional support in the pertinent studies of his colleagues (G. Liiv

and M. Remmel) for the view that \bar{o} is a high vowel and rather a back vowel than a central one, in the end he is forced to admit that the highest tongue position half-arbitrarily ascribed to \bar{o} is not sufficient grounds for explaining its highest intrinsic pitch. He adds that perhaps \bar{o} is articulated above some physiological critical level, or perhaps there is a totally different mechanism responsible for its high pitch — only special studies could provide the proper explanation. The author's hesitation may be accepted, all the more so because in our dialects there occurs an \bar{i} -sound which obviously ought to be distinguishable from \bar{o} (i. e. from \bar{e}) in a listening test.

The author of the thesis has an interesting and plausible hypothesis that the forward movement of the tongue also raises the pitch of vowels since in that case the laryngeal muscles involved are more strained. One tends to believe that this is not just a mere hypothesis. The reviewer likewise supports another hypothesis of Vende's, namely that the pitch of the vowel is higher when the vowel is a labial one, the strong effect of labialization being the very reason for this greater height of pitch. Noteworthy are the results describing the amount of pitch movement in vowels. The thesis shows that low vowels tend to be pronounced with an extensive pitch rise and describes the influence of the following consonant (*k*) on the rise or fall of the vowel's pitch.

The thesis contains the author's interesting conclusions from the results of listening tests. They are based on a detailed analysis of the dependence of listeners' responses on several effects that control a listener's decision about which vowel of a vowel pair is higher. Another series of listening tests has allowed the author to describe the poor perception of pitch change in short vowels. The results obtained by Vende from the analysis of listening tests deserve to be taken into account by dialectologists and anyone else about to make a precise record of what they hear.

The preceding approbatory and critical remarks concerned the first chapter, or half, of the thesis. The second large chapter is about the dependence of pitch on various extravocalic phonetic factors and on the quantity of the vowel. The first

chapter was written on the basis of results obtained from the study of recordings of monosyllabic words. The research in the second chapter proceeds from sentences consisting of two monosyllables or of one word of up to three syllables. Using different sentences, the author has managed to find out how the pitch of the primary-stressed vowel is influenced by the number of syllables following it, by the quality of the neighbouring consonants and by the quantity of the following consonant. All the experiments performed and their analysis are presented with convincing clarity. A certain misunderstanding may arise with regard to interrogative sentences. The reviewer infers that the speakers were told to pronounce, e. g., *Aastad*. 'years' and *Aastad?* If this is what really was uttered, a doubt may arise whether the results concerning the pitch movement in questions are correct. The relations of rising and falling pitch are hardly the same in the Estonian sentences *Aastad?*, *Kas aastad?*, *Aastad või?*, etc. (all meaning 'Years?').

Much of what Vende has to say about the movement of pitch is new and correct, although some instances flatly contradict the assumptions and views presented some time ago by the reviewer. The latter believes, however, that Vende may be right, since he has had much better methods and research facilities at his disposal.

The experimental material of the second chapter is reasonably compiled using only one vowel (*a*), which is meant to eliminate some possible variation of tonal patterns due to the intrinsic pitch of vowels. It is questionable whether the author has been right in using speakers with different dialectal backgrounds (Saaremaa, southern Estonia). Pitch patterns are very stable in a vernacular; once acquired, they may persist for a long time.

The chapter contains many interesting observations, beginning with the dependence of pitch in the 1st syllable on the number of syllables in the word. In the section concerning the influence exerted on the pitch of vowels by the quantity of the following consonants, there is an interesting result — in good agreement with the

illustrative material — viz. that consonant quantity affects questions differently from vowels. But here, too, one feels how necessary it would have been to let the reader know in greater detail how the interrogative part of the material was procured.

Plausible statements have been made about differences in the rise of pitch in a word beginning with a consonant as against a word beginning with a vowel. The author's idea about the regressive effect of palatalization is also acceptable. He states that palatalization in Estonian may raise pitch at the end of the preceding vowel. Unfortunately the author has few examples to illustrate this interesting point. Studies of this problem should definitely be continued.

Treating of the relations between vowel quantity and pitch, Vende gives a critical account of the authors who have expressed their views about those relations. Presenting the appropriate evidence, he refuses to believe that a rise in a vowel of quantity 2 and a (rise —) fall in a vowel of quantity 3 are indispensable to distinguish Q2 words from Q3 words. On the whole, the upward and downward movement of pitch in vowels of different quantity degrees has been analysed correctly.

Vende supports the standpoint of his closest colleagues, A. Eek and M. Rimmel, who described the quantity relations of sonorant consonants by using the phonological feature 'tenseness'. He makes an attempt to apply the same feature for the interpretation of quantity relations of voiceless consonants and vowels as well. This is also a hypothesis which still requires further research in order to be proved.

There are other merits in Vende's thesis, but what has already been said should suffice to sum up as follows: this is a really good paper containing much of value and only a few minor drawbacks. The Council voted unanimously to confer on Kullo Vende the scientific degree of Candidate of Philology. Credit is also due to Professor L. Zinder of Leningrad University for having trained another competent phonetician.

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