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ON THE PHONOLOGICAL TRANSCRIPTION OF OVERLENGTH IN STANDARD ESTONIAN *

The interpretation of quantitative relations, particularly the phonological interpretation of the degrees of quantity in Estonian, continues to be of interest. This is mainly due to the fact that one has not yet succeeded in creating a phonological conception comprising the whole phonological system of the language and in producing a phonological transcription which would simultaneously satisfy the requirements of strictness that such a conception involves and likewise be in agreement with the linguist's intuition.

In the extensive literature on the problems of the phonological degrees of quantity in Estonian, the question of the relationship between phonological conception and phonological transcription has been especially clearly raised by Valmen Hallap in his work "Fonoloogiline etüüd eesti keele väldete alalt" ("A Phonological Study of the Degrees of Length in Estonian").[1] This article analyzes the conceptions contained in the literature dealing with the phonology of the degrees of quantity in Estonian and with the corresponding systems of transcription. It would be difficult to add anything substantial to this article. Nevertheless, the problem of the phonological interpretation of the difference of overlength (in particular that of distinguishing the second and third degrees of quantity respectively) cannot be regarded as solved, especially if one insists that the phonological interpretation of the degrees of quantity and the phonological transcriptions used should be in complete mutual correspondence.

The essence of the problem is clear and it has been repeatedly formulated: should overlength be associated with one sound in a sound cluster or with a whole sound cluster (or with a whole word, a part of a word, with so-called internal characteristic sounds, a syllable, with the first two syllables beginning with the stressed syllable). As put by Hallap, the problem consists in whether one should proceed from a simple sound[2] or a sound cluster[3].

In phonological discussions of the problem there have always been two alternative possibilities: (1) overlength is associated with one sound; in

The author wishes to express his thanks to V. Hallap whose critical remarks have helped to bring out more clearly the views presented in this paper.

* The usual terms employed to denote the three phonological quantity contrasts in Estonian are: short (the first degree of quantity or quantity 1), long (the second degree of quantity or quantity 2) and overlong or extra-long (the third degree of quantity or quantity 3).

[1] Nonaginta. Johannes Voldemar Veski 90. sünnipäevaks 27. juunil 1963 (= Emakeele Seltsi toimetised, nr. 6), Tallinn 1963, p. 95—122.

[2] For the concept of a simple sound see V. Hallap, *op. cit.*, p. 95 ff.

[3] V. Hallap, *op. cit.*, p. 103 ff., 112.

this case phonological transcription must denote the overlength of the phoneme (resp. the phoneme sequence) corresponding to that sound, and it must do this in the same manner always, i. e. in every environment; (2) overlength is connected with a sound cluster; in this case the phonological transcription must denote the overlength as a whole of the phoneme sequence corresponding to a sound cluster; it must do this in an identical way for all phoneme sequences corresponding to overlong sound clusters.

The view which, while considering overlength to be a function of a sound cluster, also finds that in an overlong sound cluster there is a concrete "marked" member which must in every given case be made to stand out, is in reality eclectic. In transcription such a point of view is reduced to the first standpoint: the overlength of a sound is indicated, but this is done differently in the case of a phoneme sequence corresponding to a sound cluster than when phonemicizing overlong simple sounds. Such a compromise solution has been chosen also by V. Hallap.[4]

This standpoint derives on the one hand from the recognition by linguists that in case internal characteristic sounds consist of vowel or consonant clusters the overlength is a function of the sound cluster. On the other hand it derives from the impossibility of reflecting such a standpoint in phonological transcription expediently and without contradictions. This gives rise to the stipulation concerning the "marked" component in a phoneme sequence corresponding to an overlong sound cluster.[5] The transcription of such a member usually differs from the phonemicization of an overlong simple sound.

It is V. Hallap himself who has expressed the two alternatives with particular lucidity: proceeding from an overlong simple sound v. proceeding from the overlength of a sound cluster. The latter alternative is very attractive and theoretically there does not seem to be any objection to it (at least initially). It makes sense to examine how the assumption of overlength in a sound cluster is developed in different phonological transcriptions and also how strictly such a theoretically preferable approach is capable of being realized within the framework of an expedient phonological conception. For this purpose such transcriptions and transcribed samples will be dealt with below where the standpoint under discussion has been most clearly applied. These are T.-R. Viitso's phonological transcription as presented in his article "Tüvelisest astmevaheldusest (eriti eesti keeles)" ("On Stem Alternation (with Special Reference to Estonian)") [6], R. T. Harms' phonological transcription as given in his grammar of the Estonian language[7] and V. Hallap's transcription samples in the article already mentioned.

Given that a phonological transcription is regarded as a closed system where explanations outside that system are not valid, it is clear that if overlength is indicated differently in the case of the phonemicization of overlong simple sounds and that of overlong sound clusters (in the latter case by singling out the "marked" component which may occur in different positions), then a state of complementary distribution is created in

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[4] V. Hallap, *op. cit.*, p. 103 ff., 112.

[5] E. g. V. Hallap says: "As has been pointed out, we can whenever necessary state that in a combination it is precisely this or that component which is marked: */ma.rs̀lane — pä.rs̀lane/*, etc." (*op. cit.*, p. 112; see *ibid.*, p. 103 ff.).

[6] ESA VIII 1962, Tallinn 1962, pp. 44—61.

[7] R. T. Harms, Estonian Grammar (= Indiana University Publications. Uralic and Altaic Series, Vol. 12), Bloomington, The Hague 1962.

transcription which could be eliminated immediately by the consistent application of the procedure of phonological analysis.

The assumption of the overlong quantity of a sound cluster must also be reflected in transcription so that in some way the overlength of the whole phoneme sequence corresponding to the entire sound cluster is actually indicated. This can be done, for instance, by singling out the whole overlong phoneme sequence or by the use of a graphic marker in a certain defined position either within or with relation to all such overlong phoneme sequences.

In the vowel subsystem this requirement can be very simply met and the majority of phonological conceptions have therefore solved the question of the treatment and transcription of overlong vowels and diphthongs unanimously by proceeding from the sound cluster. In accordance with such a phonological conception overlong vowels and diphthongs are dealt with as sequences of two vowel phonemes above which there is a suprasegmental phoneme of overlength. (Harms has an "unusual" position of the stress — postposed stress.) The following are some specimens of transcription from the works under discussion: T.-R. Viitso: */maà.le/*, */laù.lu/* (p. 47), R. T. Harms: */+ jäämа/* (p. 30), */+ aù/* (p. 28), V. Hallap: */pu.ùri/*, */la.ùlu/* (pp. 104, 113). The fact that Harms regards the overlength marker as a special stress position [8] is not relevant to the present discussion.

All the more insurmountable difficulties are presented by the phonology of consonant clusters considered to be overlong in quantity.

V. Hallap points out: "The existence of the opposition [*ma.rs̀lane — pä.r̀zlane*], etc., should also be a reason why we cannot confine ourselves merely to regarding whole consonant clusters as overlong. This type of opposition has not, by the way, been taken into account by R. T. Harms, who writes '... given the segmental phonemes of a syllable, it is possible to predict which segments will take the extra length in all cases'." [9] However, it is just R. T. Harms who has succeeded in fulfilling this requirement also in the case of consonant clusters. The question of the manner and the consistency with which he has done this will be discussed below.

If in a consonant phoneme sequence one is nevertheless permitted to place the overlength marker above a concrete phoneme and in a position undefined by the phonological transcription, then such a marker can be regarded as associated only with that phoneme and nothing is changed by explanations outside the given transcription system to the effect that the marker is meant to distinguish the phoneme sequence as a whole. If the marker were to belong to the entire consonant sequence and not to one phoneme and the position of this marker were to be at the same time both distinctive and unpredetermined, then this would justify regarding all such "marked" consonant sequences as independent phonemes as is done in P. Ariste's well-known treatment.[10] Such an approach is inexpedient because in this case a "marked" sequence of consonant phonemes cannot be segmented in the sense of synthesis: given a consonant sequence and an overlength marker phoneme, it is impossible to establish in a general case what is the result of their combination.

A consistent solution is provided by the phonological transcription of consonant clusters in such a manner that the position of the overlength

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[8] R. T. Harms, *op. cit.*, pp. 8, 11 ff. *et passim.*

[9] V. Hallap, *op. cit.*, p. 110; see also R. T. Harms, *op. cit.*, p. 12.

[10] P. Ariste, Foneem eesti keeles. — ETAT ÜS 1953, pp. 360—363; P. Ariste, Eesti keele foneetika, Tallinn 1953, pp. 102—104.

marker phoneme would be clear from the sequence of segmental phonemes. All the contrast possibilities connected with the indefinite position of the marker must be eliminated by the transcription rules of segmental phonemes in consonant phoneme sequences (when transcribing an overlong consonant cluster into a phonological consonant sequence).

The following is a discussion by consonant cluster types of the possibilities connected with the indefinite position of the marker phoneme and with the elimination of the indefinite character of its position in phonological transcription.

In the segment chain $[C_RC_S]$ (where C_R is a sonant and C_S an obstruent) both the first and the second terms can be "marked": there occur both $[\dot{C}_RC_S]$ and $[C_R\dot{C}_S]$.

The supporters of all three phonological conceptions under discussion are unanimous in transcribing the type $[C_R\dot{C}_S]$ in the environment /—V/ phonologically as a phoneme sequence $/C_RC_SC_S/$.

V i i t s o: */pi.l̇kku/*, */ka.rı̇ta/*, */kä.rs̈sa/* (p. 50);
H a r m s: */+vaŋ̇kker/* (p. 22), */kiṁppe/* (p. 74);
/+praňssuse/ (p. 23), */puňšši/* (p. 49);
H a l l a p: */vä.nı̇tta/*, */fre.nčči/* (p. 115).

H a r m s has many examples of the identical transcription of this type also in a terminal position (let us denote the environment as $—\overline{\overline{\#}}$): */+kil̇pp/* (p. 19), */+poòltt/* (p. 20), */+jäl̇kk/*, */+lar̈ff/* (p. 22), */+hir̈ss/*, */+pul̇s̈s̈/* (p. 23), etc.

At any rate, the extension of this transcription to the environment $/—\overline{\overline{\#}}/$ does not present any problem in this type.

It should hence be possible to determine automatically the position of the marker phoneme in the phonological transcription of the consonant cluster types $[\dot{C}_RC_S]$ and $[C_R\dot{C}_S]$ in the environments $\left|\begin{matrix}—V\\—\#\end{matrix}\right|$: when overlength occurs in the consonant cluster $[C_RC_S]$, then its more precise position is $[C_R]$ in case $[C_S]$ is transcribed phonologically by means of one symbol, and $[C_S]$ in case this segment is transcribed phonologically with double symbols.

The double phonological transcription of $[C_R]$ is not necessary for automatizing the position of the marker phoneme in this type, and it is not written double in the transcription being dealt with, not even when this segment is "marked"; cf. Viitso: */u.r̥pa/* (p. 49), Harms: */kõr̥s/* (p. 23), Hallap: */sa.m̥pla/* (p. 119).

V i i t s o has extended the same solution to the case $[C_R\dot{C}_SC]$, where $[C_R\dot{C}_S]$ occurs in the environment /—C/: */ko.nı̇tsa/*, */su.l̇ppsita/*, */vi.nı̇tsklep/* (p. 50), */kä.rp̣pse/* (p. 49), etc. It is probable that in Viitso's system the double phonological transcription of $[\dot{C}_S]$ holds also in the environment /—C/, whatever the /—C/ (there are no examples for all environments). There is, however, one very essential restriction: such a manner of transcription is not valid in the case of $[C_R\dot{s}C_S]$: */ve.rs̈ta/*, */tu.rs̈ka/* (p. 49). Here $[C_R\dot{s}]$ occurs in the environment $/—C_S/$. Probably the phonological transcription of $[\dot{s}]$ by means of a single letter in the environment $/C_R—C_R/$ is not possible in Viitso's transcription (there is no pertinent example).

Thus, Viitso always transcribes the type of consonant cluster [$\dot{C}_R C_S$] phonologically as /$\dot{C}_R C_S$/ and the type [$C_R \dot{C}_S$] as the sequence /$C_R \dot{C}_S C_S$/, except the case [$C_R \dot{s} C_S$], which he represents phonologically as /$C_R \dot{s} C_S$/: [$\dot{C}_R C_S$] = /$\dot{C}_R C_S$/.

[$C_R \dot{C}_S$] = /$C_R \dot{C}_S C_S \begin{matrix} \diagup V \\ \diagdown \#\,* \end{matrix}$/ = (*no examples)

= /$C_R \dot{C}_S C_S$—/ in the environment /—C/, in case [$\dot{C}_S$] = [*ḱ, ṫ, ṯ, ṗ*];

= /$C_R \dot{C}_S$—/ in the environment /—C_S/, in case [$\dot{C}_S$] = [*ś, š*].

Hence in the environment /—V/ the extension of the [$\dot{C}_S$]-class in the consonant cluster type [$C_R \dot{C}_S$] is [*ḱ, ṫ, ṯ, ṗ, ś, š, (f̀)*], in the environment /—C_S/ at least, however, [*ś, š*] no longer belong to this transcription class.

Harms has provided a different solution of the phonological transcription of consonant clusters of the type [$C_R \dot{C}_S$] in the environment /—C/. According to Harms the single or double phonological transcription of the segment [$\dot{C}_S$] depends on the environment /—C/: if /—C/ = /C_R/, then [$\dot{C}_S$] is transcribed phonologically as double; if /—C/ = /C_S/, then it is transcribed by means of one symbol: /+*spoṙttlane*/ (p. 20), /+*kiltt̰ma*/ (p. 21), /*maṅttl̰i*/ (p. 45) (a few deviations, e. g. /+*praṅslane*/ (p. 23) can be accounted for simply by the informant's pronunciation as is also corroborated by the allophone [*Z*]), but /+*rämps*/ (p. 19), /+*pulst* (p. 21), /+*tsuṅft*/ (p. 22), /+*vär̆ske*/ (p. 23), /+*kuṇs̰t̰nikk*/ (p. 25), etc.

A relationship of complementary distribution has obviously arisen here in the phonological transcription of the segment [$\dot{C}_S$] of the consonant cluster [$C_R \dot{C}_S$]. Neither does such a transcription satisfy the requirement of the phonetic identification of what has been transcribed. It is not possible to say in cases such as /+*aṅtke*/ (p. 20), /+*aṇ̰t̰sin*/ (pp. 21, 29 *et passim*) whether the pronunciation is [*aṅᴅᴅe* ~ *aṅᴅke*] and [*aṅ̈ᴅzin*] or [*aṅ̇tke*] and [*aṅ̇tsin*]. This solution likewise proves helpless in other analogical possibilities of contrast, e. g. [*aṙᴅze*] and [*är̆ksa*], [*vaṙᴅzi* ~ *vaṙ̇ksi*], the case mentioned by V. Hallap (although in another connection) of [*koṙ̇tse* ~ *koṙᴅze*] and [*koṙ̇tse*][11], etc.

The principle underlying Harms' phonological transcription is not so much one of distributional parallelism as of the concrete possibilities of phonological contrast in consonant clusters.[12] Since the contrast of the consonant cluster types [$\dot{C}_R C_S$] and [$C_R \dot{C}_S$] in the environment /—C_S/ is really very often (almost always) lacking, then Harms (in consequence of his not having noticed the possibilities of contrast just mentioned or due to their absence in his material) has not deemed it necessary to chose a doubly written obstruent for the archephonemic expression (if descriptive linguistics should tolerate such a term) of the segment [$\dot{C}_S$] in the environment /—C_S/ as he does for the same type of consonant cluster in the

[11] V. Hallap, *op. cit.*, p. 101.

[12] See also V. Hallap, *op. cit.*, p. 111.

environment /—C_R/, and as Viitso, by the way, does in general, with the sole exception of [ṡ].

The phonological transcription by Harms of the consonant cluster types [$\dot{C}_R C_S$] and [$C_R \dot{C}_S$] in special cases can be summed up as follows:

$$[\dot{C}_R C_S] = /\dot{C}_R C_S/$$

$$[C_R \dot{C}_S] = /\dot{C}_R C_S C_S \begin{matrix} \nearrow V \\ \# \\ \searrow C_R \end{matrix} /$$

$$= /\dot{C}_R C_S —/ \text{ in the environment } /—C_S/.$$

The most hesitant in phonemicizing the consonant cluster [$C_R \dot{C}_S C$] is Hallap. In such a generalized environment he always writes [$\dot{C}_S$] phonemically singly even when /—C/ is a sonant: */ma.ṙslane — pä.ṙslane/* (p. 104). This is, of course, likewise consistent, but the relationship of complementary distribution in transcribing the segment [$\dot{C}_S$] of this type of consonant cluster is also the most evident here: double before a vowel, single before a consonant. Neither can one agree in the case of such a transcription with Hallap's view that the entire consonant phoneme sequence is overlong, although the positions of the marker phoneme contrast phonologically.[13]

As to the phonetic validity of these conceptions, attention should be drawn to the circumstance that if one is ready to treat a "marked" or long phonetic single segment in a terminal position phonologically as a sequence of two phonemes as is done by Harms in the type under discussion and by Hallap in illustrating some other types (e. g. */ko.ɫt(a)/*, p. 113), then the phonological treatment of such a segment as a sequence of two phonemes in the environment /—C/ is not at all more arbitrary, especially because in the given case it is not quite clear whether one is dealing with a phonetic single segment or a geminate (Viitso: */su.ɫppsita/*, */ko.ɲtsa/*, */vi.ɲtsklep/*) — this being a matter of syllable boundaries.

For the three transcription systems under consideration the diagnostic environment in transcribing the consonant cluster of type [$C_R \dot{C}_S$] is /—C/:

Viitso: [$C_R \dot{C}_S C$] = /$C_R \dot{C}_S C_S C$/, when [$\dot{C}_S$] = [$\dot{k}$, $\dot{t}$, $\dot{t}$, $\dot{p}$] and
= /$C_R \dot{C}_{S_1} C_{S_2}$/, when [$\dot{C}_{S_1}$] = [$\dot{s}$(š)] (the indexes denote difference or identity of phonemes);

Harms: [$C_R \dot{C}_S C$] = /$\dot{C}_R C_S C_S C$/, when [C] = /C_R/ and
= /$\dot{C}_R C_S C$/, when [C] = /C_S/;

Hallap: [$C_R \dot{C}_S C$] = /$C_R \dot{C}_S C$/.

Attention has already been drawn above to the presence of a relationship of complementary distribution in all three systems of transcription when phonemicizing the consonant cluster type [$C_R \dot{C}_S$].

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[13] See V. Hallap, *op. cit.*, p. 112.

Analysis shows that the position of the marker phoneme of overlength in the phonological transcription of the consonant cluster types [$\dot{C}_R C_S$] and [$C_R \dot{C}_S$] can be automatized in the general case only by writing the segment [$\dot{C}_S$] in the type [$C_R \dot{C}_S$] phonologically as a sequence of two phonemes in every environment. Only in this case is it possible in these phonetic types to define their pronunciation univocally also in phonological transcription, knowing solely that a consonant phoneme sequence is overlong.

The purpose of the preceding discussion has not been to say that the phonetic cluster of three consonants [$C_R \dot{C}_S C$], especially the independent word-final consonant cluster [$C_R \dot{C}_{S_1} C_{S_2}$] and even longer consonant clusters cannot be regarded as indivisible. We have sought rather to emphasize the fact that in a phonetic consonant cluster it is always either the first or the second segment that is marked and that the phonological transcription of the following consonantal segments is not a very complicated problem. It is precisely the contrast possibilities resulting from variation in the marked nature of the first and second segments in a consonant cluster that render the consonant subsystem so different from the vowel subsystem. It is essential, too, that both the first and second segments of a consonant cluster in the pertinent consonant cluster types give rise to a marked — non-marked contrast in any environment (resp. environmental type). Even in the case of [$C_R C_{S_1} C_{S_2}$] the first as well as the second segment can be marked. This produces an ambiguity which phonological transcription must get rid of in a situation where we want to proceed from the marked or non-marked character of a consonant cluster as a whole.

An analogical course of reasoning arises when the phonological transcription of the phonetical types of consonant clusters [$\dot{C}_S C_R$] and [$\dot{C}_{S_1} C_{S_2}$] is analyzed.

In these types Viitso writes [$\dot{C}_S$] as a marked sequence of two phonemes when [$\dot{C}_S$] = [*k̇, l̇, ṫ, ṗ*] and as one marked phoneme when [$\dot{C}_S$] = [*ṡ, š, ḣ*]: */tü.l̇tre/*, */ta.ṗplep/*, */la.ṗpsi/* (p. 50), */o.l̇tsa/* (p. 49), */oo.ṗplep/*, */na.k̇ksuta/*, */naa.k̇ksuta/* (p. 50), but */pi.ḣta/*, */pää.sta/* (p. 48), */o.ṡta/* (p. 50). As could be expected, one thus arrives at the same solution for [$\dot{C}_{S_1} C_{S_2}$] as for [$C_R \dot{C}_S$] in the environment /—C_S/.

In the type [$\dot{C}_S C_R$] Harms uses double symbols to transcribe [$\dot{C}_S$] when [$\dot{C}_S$] = [*k̇, l̇, ṫ, ṗ*]. E. g. */+kal̇tnut/* (p. 15), */+taṗpma/* (p. 19), */+sõṗpra/*, */+paṗpḷi/* (p. 19), */+ül̇tlesit/*, */+heil̇ttma/* (p. 20), */+ak̇kna/* (p. 22), etc.; when [$\dot{C}_S$] = [*ṡ, š, ḣ*], Harms transcribes the latter by means of a single character in this type: */+käṡn/* (p. 22), */+maḣl/*, */+leḣm/* (p. 24). In the type [$\dot{C}_{S_1} C_{S_2}$] Harms' solution is entirely analogical with the phonological transcription of the type [$C_R \dot{C}_S$] in the environment /C_S/: here Harms identifies [$\dot{C}_S$] always with one phoneme: */+ol̇tsa/* (p. 20), */+kaḷki/* (p. 21), */+tekst/*, */+saḳslane/*, */+laṡkma/*, */+laḣkmel/*, */+laḭf/*, */+saft/* (p. 22), etc.

In choosing such a transcription scheme Harms has probably proceeded from the phonemicization of the consonant cluster types dealt with above:

$[C_R \dot{C}_S C_R] = /\dot{C}_R C_S C_S C_R/$

$[C_R \dot{C}_{S_1} C_{S_2}] = /\dot{C}_R C_{S_1} C_{S_2}/$

$[\dot{C}_S C_R] = /\dot{C}_S C_S C_R/$

$[\dot{C}_{S_1} C_{S_2}] = /\dot{C}_{S_1} C_{S_2}/$

(Here the parallel of [*ṡ*] in the cluster $[\dot{C}_S C_R] : [\dot{s}C_R] = /\dot{s}C_R/ : /+k\ddot{a}\dot{s}n/$ still remains unclear). Otherwise there would be no reason for employing the graphic shapes $[\dot{C}_S C_R] = /\dot{C}_S C_S C_R/$, when $[\dot{C}_S] = [\dot{k}, \dot{t}, \dot{t}, \dot{p}]$ since in the cluster $[\dot{C}_S C_R]$ it is always the first member that is marked and in Harms' material there are no contrasts which would distinguish this subtype from the general case $[\dot{C}_S C]$, where [C] may also be an obstruent (in distinction from Hallap's examples containing *nitro*; Viitso's later objections connected with *nitro — mitra* are not directly reflected in his transcription). Neither does the phonetic aspect of the type provide any special reason for a phonemicization different from that of the general type. Harms, for instance, writes phonetically [*kât·ṫnŭt*] = /+*kaṫtnut*/ (p. 15), where the phonetic transcription must justify the phonological geminate. It is difficult to believe that an analogical phonetic — and then also a phonological — geminate is absent in words such as *katki*, *otsa*, *oksa* (all overlong) where the consonant cluster is completely voiceless. V. Hallap has already drawn attention to this contradiction.[14] It seems to be more a case of the generalization of transcription. Such a solution may have been encouraged by the absence in a terminal position of the clusters $[\dot{C}_S C_R]$, where $[\dot{C}_S] = [\dot{k}, \dot{t}, \dot{t}, \dot{p}]$, whereas the clusters $[\dot{s}C_R]$ and $[\dot{h}C_R]$ still occur terminally.

In Harms' treatment likewise [*ṡ*] is a segment which it is somewhat difficult to assign to transcription types: in the types *kass* and *pulss* it is transcribed analogically with the stop consonants, not, however, in the consonant clusters $[\dot{C}_S C_R]$.

H a l l a p does not seem to approve of ever writing the first consonant double in the phonological transcription of a consonant cluster, even when it is marked. Instead he prefers to use a special syllable juncture to distinguish the first stage when transcribing the three-stage contrast that he emphasizes in the contrast chain *nõdra — nitro — nõtra*: */nõ.,tra — ni.tro — nõ.ṫra/* (p. 117). Hallap's other and invalidated solution, viz. to write */nõ.tra — ni.ttro — nõ.ṫtra/* (p. 116 *et passim*) presupposes the extension of the phonological spelling $/\dot{C}_S C_S C_R/$ to a degree used by Harms; one should then also write */ta.ṗpri/*, */ko.ṗpli/*, further */va.ḳkla/*, */võ.ṫtma/*, etc. because a transcription ought to classify analogical phonetic phenomena into identical transcription types and it should not adhere too rigidly to concrete contrasts.

The following is a summary of the phonological transcription of the consonant cluster types $[\dot{C}_S C_R]$ and $[\dot{C}_{S_1} C_{S_2}]$ according to the systems compared:

[14] V. H a l l a p, *op. cit.*, p. 111.

Viitso: $[\dot{C}_S\ C_R]$ and

$[\dot{C}_{S_1}\ C_{S_2}] = /\dot{C}_S C_S C/$, when $[\dot{C}_{S_{(1)}}] = [\dot{k}, \dot{t}, \dot{t}, \dot{p}]$ and

$= /\dot{C}_S C/$, when $[\dot{C}_{S_{(1)}}] = [\dot{s}, \dot{š}, \dot{h}]$.

Harms: $[\dot{C}_S C_R] = /\dot{C}_S C_S C_R/$, when $[\dot{C}_S] = [\dot{k}, \dot{t}, \dot{t}, \dot{p}]$ and

$= /\dot{C}_S C_R/$, when $[\dot{C}_S] = [\dot{s}, \dot{š}, \dot{h}]$.

$[\dot{C}_{S_1} C_{S_2}] = /\dot{C}_{S_1} C_{S_2}/$.

Hallap: $[\dot{C}_S C_R]$ and

$[\dot{C}_{S_1}\ C_{S_2}] = /\dot{C}_{S_{(1)}} C/$ (first solution).

It now remains for us to discuss the phonological transcription of the $[\dot{C}_{R_1} C_{R_2}]$ type of consonant cluster and various relevant problems.

All three transcription systems under consideration unanimously transcribe this type $[\dot{C}_{R_1} C_{R_2}] = /\dot{C}_{R_1} C_{R_2}/$. E.g., Viitso: */ka.ṙva/* (p. 48); Harms: */+maṙja/*, */+taḷv/* (p. 26); Hallap: */sõ.ṁe/* (p. 113).

If overlong simple consonant sounds are dealt with as a special form of overlong consonant clusters and if overlength is regarded as primarily accompanying a sound cluster (as recommended by Hallap [15] and as is in best agreement with intuition), then within the framework of such a conception one must give an answer to or an assessment of a few essential problems that have an inevitable bearing on such a treatment.

According to the view serving as the point of departure, overlength always implies an overlong sequence of phonemes which may in a special case also be a sequence of identical phonemes. Thus in overlong monosyllabic words a short vowel is always followed by a phonological overlong geminate: */ka.ṗp/*, */ke.ṡs/*, */ta.ṁm/*, */vu.ṙr/*, etc. In the same manner obstruents occur after a long syllable: */ta.iṗp/*, */tu.ḷṗp/*, */po.iṡs/*, */ma.ṙṡs/*, etc. In the last examples sonants already stand in the same position as the second component of a diphthong. This phenomenon also places the class of sonants distributionally between the vowel and obstruent classes. Harms' transcription */+taṁ/*, */+ḷiṅ/* (p. 24), */+aḷ/* (p. 25), */+naṙ/* (p. 26), etc. is entirely justified from the distributional point of view on analogy with the graphic shapes */paì/*, */näù/*, etc. accepted by all three phonologists. Such a transcription takes account of the absence of a clear-cut boundary between vowels and consonants and assigns */kaìm/* and */kaṙv/* to parallel types. It is not therefore possible here to regard the claim as solely valid that there is an overlong vowel sequence in the first word and an overlong consonant sequence in the second word. Actually this is more a case of overlength accompanying a syllable.[16] In presenting a phonological transcription it is possible and necessary, of course, to give lists of vowels and consonants, and to decide on this basis whether it is a vowel or a consonant sequence that is overlong. But in any case, if a single character is always used in the phonological transcription of sonants when they occur as the first marked component of a consonant

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[15] V. Hallap, *op. cit.*, p. 112.

[16] See V. Hallap, *op. cit.*, p. 104.

sequence, then one is entirely justified in transcribing them in the same fashion when they occur in a final position after a short stressed vowel. This is done by Harms: */+kül̥m/* and */+loḷ/* (p. 25), */+aṙk/* and */+naṙ/* (p. 26). Harms' transcription class of sonants is very uniform (*/h/* also belongs here), another uniform transcription class in his system is that of the stops; in transcription */s, ś/* occupy an intermediate position between these two classes. Such a treatment cannot, however, also prove the validity of the contrary: that if the sonants and stops in the types */kaṁm/* and */kaṗp/* belong to one transcription class, then they must belong there also when they occur in other positions. Such a uniformity would, however, be desirable.

Deviating somewhat from phonological analysis one can raise a few more objections to the view that it is consonant clusters that are overlong in quantity. Such objections concern more the realization of this approach in Hallap's transcription than in the transcriptions of Viitso and Harms. To begin with, such an approach renders complicated the synthesis of overlong consonant sequences (naturally at the transcription level). It is not possible to form a more extensive overlong consonant sequence from an overlong phonological geminate simply by adding consonant phonemes: */ṗp/ + /s/*, */ṙr/ + /v/*, etc. do not directly yield overlong consonant sequences (it is only in Viitso's transcription that the first example gives a consonant sequence directly), a phonological process occurs intermediately at the transcription level (it may also be a morphophonological process or rule); or then again all the overlong consonant phoneme sequences must occur in ready form. This means, however, that such phoneme sequences have the status of a single phoneme.

In oral discussions Valmen Hallap has repeatedly defended the variant of phonological transcription that proceeds from the overlength of a consonant cluster and the essential features of which have been presented in the article of his referred to above. He has also raised objections on morphophonological grounds to the transcription based on the overlength of a single consonant.[17]

It is not possible to accept Hallap's claim that in the type group

/pa.ttu — pa.ṫtu/,
/o.ttsa — o.ṫtsa/,
/le.sta — le.ṡta/,
/nõ.ˌtra — nõ.ṫra/

(in Hallap's phonological transcription) there actually are two subtypes: the last type differing from the preceding in that the first member */nõ.ˌtra/* of the contrast chain is actually a short component of the chain and that the word */ni.tro/* = *[ni.ṫrò]* is long in quantity, the type group thus having the form

/ — pa.ttu — pa.ṫtu/,
/ — o.ttsa — o.ṫtsa/,
/ — le.sta — le.ṡta/,
/nõ.ˌtra — (ni.tro)— nõ.ṫra/,

and that it is possible to anticipate the occurrence of such a three-stage phonological contrast also in the case of voiceless consonant clusters, as if **/le.ˌsta/* or **/o.ˌksa/*, etc. (But in the type */pa.ttu — pa.ṫtu/*?)

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[17] See also V. Hallap. *op. cit.*, p. 116 ff.

In standard Estonian the primary contrast in the consonant type under discussion is nevertheless a difference in quantity [*nę.ɒrà — nę.ṫra*] and a supplementary contrast [*ni.ṫrò*] has arisen between them:

[*nę.ɒrà — (ni.ṫrò) — nę.ṫra*],

which it is convenient to write (in a phonological transcription based on the overlength of a single consonant) in the following form

/*nõ.tra — (ni.ttro) — nõ.ṫtra*/ (or /*nõ.ṫra*/).

An analogical late supplementary contrast has also arisen between the two members of the primary contrast in the type [*vä.ñɒà — vä.nṫà — vä ṅta*] : /*vä.nta — vä.ntta — vä.nṫta*/ (or /*vä.ntṫa*/).[18]

It is highly improbable that in Hallap's type group the gaps could be filled by the subsequent appearance of links capable of being regarded as short in quantity. The only probable case where this may come about is connected with the affricates. If, however, the contrasts [*va.ṫsà — va.ṫsa*] and [*ma.ṫši — ma.ṫši*] were to be supplemented on a mass scale by quantitatively short links, then the phonological system of Estonian would simply acquire two new affricate phonemes giving contrasts of quantity of the same type as other obstruents.

A medial member may arise between the terms of a primary contrast as has happened in the cases [*vä.nṫtà*] and [*ni.ṫrò*]. In the latter type foreign words have been the source of a medial contrast link.

It is consequently much more probable that the new member of a contrast arises between the members of the primary contrast than that it should come into being in front of them as the first link of a chain.

The phonological conception (as regards the consonant system) postulated in the present article, viz. to denote the overlength of a single consonant by always and consistently writing it double (together with the overlength marker phoneme) leaves some leeway for the transcription of all intermediate contrasts of the type /*nõ.tra — (ni.ttro) — nõ.ṫtra* (or /*nõ.ṫtra*/).

The principal difficulties of a phonological transcription that proceeds from the overlength of a consonant cluster are nevertheless connected directly with phonological analysis.

As has been pointed out above, the phonological identification in the consonant cluster type [$C_R\dot{C}_S$] of the second segment as a marked sequence of two phonemes is inevitable, and this does not depend on the environment in which [$\dot{C}_S$] occurs. It is not possible otherwise to connect overlength univocally with the whole consonant sequence. The inevitable double transcription of the segment [$\dot{C}_S$] in the type [$C_R\dot{C}_S$] entails however, a distributional chain reaction, the final result of which is the transcription as a marked sequence of two phonemes of every phonetically marked consonant segment in overlong consonant clusters, even in such cases where it would not be necessary to do so solely on the basis of contrasts and from considerations connected with the automatic determination of the position of the overlength marker phoneme (in case there is such a marker).

The following is the chain based on the parallelism of distribution that leads to such a conclusion:

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[18] See also V. Hallap, *op. cit.*, p. 115.

$[VC_R\dot{C}_SC_RV] : /VC_R\dot{C}_SC_SC_RV/$ — */spo.rɨtlane/*, */ka.rɨtma/*;

$[VC_R\dot{C}_{S_1}C_{S_2}V] : /VC_R\dot{C}_{S_1}C_{S_1}C_{S_2}V/$ — */ka.ńɨtsi/*, */ka.rɨtsa/*;

$[V_1V_2\dot{C}_SC_RV] : /V_1V_2\dot{C}_SC_SC_RV/$ — */nä.ɨttlema/*, */pe.ɨttli/*;

$[V_1V_2\dot{C}_{S_1}C_{S_2}V] : /V_1V_2\dot{C}_{S_1}C_{S_1}C_{S_2}V/$ — */ka.uɨtsjon/*, */pä.ɨtset/*;

$[\dot{V}\dot{C}_SC_RV] : /VV\dot{C}_SC_SC_RV/$ — */va.aɨttlema/*, */ti.ɨttli/*;

$[\dot{V}\dot{C}_{S_1}C_{S_2}V] : /VV\dot{C}_{S_1}C_{S_1}C_{S_2}V/$ — */ra.aɨtsima/*, */pi.ɨttsa/*;

$[V\dot{C}_SC_RV] : /V\dot{C}_SC_SC_RV/$ — */ka.ɨtla/*, */ü.ɨtle/*;

$[V\dot{C}_{S_1}C_{S_2}V] : /V\dot{C}_{S_1}C_{S_1}C_{S_2}V/$ — */ka.ɨtsuta/*, */võ.ɨtsin/*.

If all consonant phonemes in the same position within a word are now transcribed phonologically according to one pattern, the following final solution is obtained: in a consonant subsystem overlength is associated with a phonetic single segment which must be rendered in consistent phonological transcription as a marked sequence of two identical phonemes.

In a consonant sequence transcribed in this manner the position of the overlength marker phoneme is, of course, entirely automatically determined, the marker phoneme may be placed in whatever position within that consonant sequence: it may stand outside the latter (e. g. in front of a word), or it may be omitted altogether, then denoting long (II degree) quantity and not overlong (III degree) quantity (as has been repeatedly recommended by Viitso). If, however, the marker phoneme is indicated above the phonological equivalent of an overlong consonant, then it should always be written above the second component of the geminate: */ka.pp̀/*, */vu.rr̀/*, */tu.lpp̀/*, */nä.rr̀v/*, */vi.ntt̀sklep/*, etc. This will make the manner of writing slightly more symmetrical in relation to that already developed for the vowel subsystem and it will also regularize the distribution of symbols for the consonant phonemes: the first marked consonant does not immediately determine the following phoneme (more exactly, of course, the graphic symbol).

Against the background of the preceding analysis it should be obvious that the transcriptions of I. Lehiste[19] and A. Raun[20] are well-founded, and that the certain criticism which Hallap[21] has levelled against them is somewhat weakened (it should be pointed out, by the way, that A. Raun's transcription cannot be regarded as strictly phonological).

The arguments repeatedly advanced by V. Hallap against the phonological transcription by means of two symbols of the marked first member of a consonant cluster[22] are undoubtedly justified, because in the transcription system discussed here there is indeed a contrast between */sk/* (long quantity) and */sšk/* (overlong quantity), */rv/* (long) and */rr̀v/* (over-

[19] I. Lehiste, Segmental and Syllabic Quantity in Estonian. — American Studies in Uralic Linguistics (= Indiana University Publications. Uralic and Altaic Series, Vol. 1), Bloomington 1960, pp. 21—82. The principles of phonological transcription presented in this paper are in essence close to those of Ilse Lehiste.

[20] A. Raun, On Quantity in Estonian. — Studia Linguistica, Année VIII, 1954 1, pp. 62—76.

[21] V. Hallap, *op. cit.*, pp. 109—111.

[22] V. Hallap, *op. cit.*, p. 106 ff.

long), etc. without the intermediate stages */ssk/* and */rrv/* or */sk/* and */rv/* because in most cases (but not always) only two quantity degrees are possible for consonant clusters. This objection should not, however, be in the nature of an ultimatum: the phenomenon should merely be treated as a case of the neutralization of the third (or more correctly, the second), — intermediate — contrast stage in those types of consonant clusters where transcription by means of two symbols is redundant (this is not true of $[C_R\dot{C}_S]$ at least), the transcription having chosen such means of expressing the given contrast stages as do not take into account the absence of one stage.

It goes without saying that such a system of transcription has a high redundancy in indicating overlength: the overlength marker phoneme is redundant in every consonant sequence where $[\dot{C}_1]$ is transcribed with two letters and where only two quantity degrees or two quantitative contrasts are possible. But the fairly great lack of parallelism between the vowel and consonant subsystems leads to such a solution which is admittedly far from ideal. The consonant subsystem stands close to that of vowels only as regards simple sounds and intervocalic geminates. In all other respects the lack of parallelism and symmetry between the two subsystems is so great that it gives rise to a final pessimistic conclusion: a consistent analysis based on distribution and patterning is incapable of producing a transcription that would satisfy intuition based on tradition and suit all the purposes for which phonological transcription is used.

МАТИ ХИНТ (Таллин)

О ФОНОЛОГИЧЕСКОЙ ТРАНСКРИПЦИИ СВЕРХДЛИТЕЛЬНОСТИ (ТРЕТЬЕЙ ФОНОЛОГИЧЕСКОЙ СТУПЕНИ ДЛИТЕЛЬНОСТИ) В ЛИТЕРАТУРНОМ ЭСТОНСКОМ ЯЗЫКЕ

Статья рассматривает фонологическую транскрипцию сверхдлинных сочетаний согласных, прежде всего, в свете того исходного тезиса, что фонологическая концепция и фонологическая транскрипция должны вполне согласовываться между собой. Если исходить из сверхдлительности сочетаний согласных, то в фонологической транскрипции должна отмечаться сверхдлительность в с е й соответствующей сверхдлинному сочетанию согласных последовательности согласных фонем так, чтобы фонема-маркер сверхдлительности относился ко всей последовательности, а не к отдельным ее членам (как дело обстояло бы, если исходить из сверхдлительности отдельного согласного в сочетании согласных).

За последние годы предложено несколько систем фонологической транскрипции для эстонского языка. Т.-Р. Вийтсо, Р. Т. Хармс и В. Халлап особо подчеркивают отправную точку своих концепций — сверхдлительность всего сочетания согласных; при этом В. Халлап считает, что и при таком понимании можно в соответствующей сверхдлинному сочетанию согласных последовательности фонем выделить один конкретный член как маркированный (т. е. позиция фонемы-маркера сверхдлительности над сверхдлинной последовательностью согласных фонем — дистинктивна).

В статье анализируется строгость фонологических транскрипционных систем этих трех авторов с той точки зрения, что позиция фонемы-маркера над полученными при фонемизации сверхдлинных сочетаний согласных последовательностями должна определиться автоматически, т. е. самой транскрипцией. Автор считает, что единственной возможностью последовательного проведения такой точки зрения является фонологическая транскрипция маркированного члена фонетического сочетания соглас-

ных всегда последовательностью двух идентичных согласных фонем (это определяет принадлежность фонемы-маркера сверхдлительности к этой последовательности). Тем самым подход к проблеме, исходящий из сверхдлительности сочетаний согласных, сводится к точке зрения сверхдлительности отдельного согласного (и в сочетании согласных). Предложенное решение не считается идеальным.