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## PROBLEMS OF PHONOLOGICAL RECONSTRUCTION IN MODERN URALIC LINGUISTICS

This review article attempts to survey the main trends and achievements in a domain which has always been of fundamental importance for Uralic studies<sup>1</sup>. The discussion was restricted mainly to the period of the 1970s and early '80s; nevertheless, it proved impossible to discuss or even to mention each of several hundred papers which were published during this period and which deal with the historical phonology of Uralic languages and dialects, being consequently of relevance for the phonological reconstruction of either Proto-Uralic (PU) or intermediate proto-languages. Moreover, studies concerned with the history of the pertinent problems had to be left outside the scope of this survey together with the relevant factual material. Fortunately these aspects have to one extent or another been dealt with in the handbooks (Collinder 1960 : 43—218; Лыткин 1974) and elsewhere, and also in the analytical and bibliographical surveys covering for the most part work done before the modern period (Décsy 1960; 1969; Itkonen 1969; 1970; Иллич-Свитыч 1971 : 58—61; Mikola 1977).

Towards the beginning of the 1970s Uralic linguistics faced — and, to a considerable extent, is still facing — a paradoxical situation. On the one hand, the development of historical and comparative studies gave rise to a widely recognized standard scheme of Proto-Finno-Ugric (PFU) phonetic and phonological reconstruction, presumably valid also for the PU state and adopted in all the main handbooks of Uralic linguistics and in authoritative etymological dictionaries<sup>2</sup>. On the other hand, the reliability of this reconstruction remained unproven, since for many daughter languages and their groups it appeared impossible to find phonetic laws which would lead, systematically and unequivocally enough, from

<sup>1</sup> Cf.: «... az uráli összehasonlító nyelvészet végső célja most is — akárcsak 120 évvel ezelőtt — az uráli alapnyelv rekonstruálása, a nyelvrokonságnak az egyes nyelvek történetén át illusztrált levezetése» («... the ultimate aim of Uralic comparative linguistics now — as well as 120 years ago — is the reconstruction of the Uralic proto-language, the demonstration of linguistic relationship throughout the whole history of individual languages») (Hajdú 1978 : 19).

<sup>2</sup> The prestige of this reconstruction is so great that some authors have even tried to study the structural peculiarities of PU/PFU, taking the set of reconstructed forms as initial data. This direction of research presented itself in its extreme, hardly acceptable form, when an attempt was made to investigate the question of homonymy in the proto-language and when the latter was claimed to have been extremely rich in homonymous roots (Pusztay 1978), while actually it is only our reconstruction that is extremely rich in simplified and approximate, and therefore similar, proto-forms.

reconstructed proto-forms to their reflexes and explain the historical development of individual sound systems.

It was customary to vindicate this unpredictability of the PU reconstruction either by claiming that phonetic development is not governed by laws, but only follows certain trends of limited influence («tendenciaszerű hangfejlődés» in some works by Hungarian authors), or by stating that law-abiding development is accompanied by numerous changes of a sporadic nature. Lately, however, in Uralic studies (as well as in other branches of linguistics) the ideas of classical comparative linguistics — among them the Neo-grammarian-type notion of strict phonetic laws — have gained momentum again. This at once creates a dilemma: to find the lacking laws — or to reconsider the reconstruction itself.

The awareness of this dilemma and a number of significant achievements on the way towards its solution seem to constitute the main content of recent research in the field.

The growth of attention to classical methods of comparison relegates to the background the so-called «structural comparison» of phonemic systems which still enjoys some undeserved popularity<sup>3</sup>. This trend should not however be viewed as a simple return to the comparative linguistics of the late 19th century, as a renunciation of the structural approach to language and of other achievements of modern linguistics. On the contrary: one can think that the wish to formalize the historical phonologies of languages with rigid sequences of phonetic laws is at least partly due to the influence of generative phonology. It is well known that the latter employs rigid sequences of rewriting rules to generate surface units from deep phonological representations which resemble or even deliberately imitate proto-language reconstructions. In Uralic linguistics this influence is especially obvious in some articles by T.-R. Viitso, where generative phonological description and proto-language reconstruction form a single whole (e. g. Viitso 1973; Viitso 1980), but Katz 1972 and 1973, Janhunen 1975—1976 and 1981 and some other papers are also indicative in this respect.

Among new and promising features of Uralic comparative studies the attempts to reconstruct proto-language morphophonology deserve to be mentioned; cf. for example the hypothesis according to which in PU some stem-final vowels could be ousted by suffixes comprising a whole syllable (Sammallahti 1979 : 63; Janhunen 1982 : 27). The importance of J. Lehtiranta's short communication (1982) lies not so much in its direct results (the author states that none of the PFU stems ending in \*-Vwe, where V is a non-low vowel, has been preserved in Lappish) as in its method: exhaustive calculus of attested sound sequences, coupled with etymological data, serves to reveal gaps and distributional restrictions in the set of reconstructed forms. T. Janurik (1975) introduced the calculation of dispersion indices for individual phonemes in the modern Uralic languages — these indices reflect both number and relative frequencies of their potential antecedents.

Computerized methods have been applied to the phonostatistical comparison between different etymological strata of the Hungarian vocabulary (Papp 1973) and to the historical phonetics of the Balto-Finnic languages (Rommel 1979). I. Bátori (1981a) has described a program for computer simulation of phonetic changes in the history of the Finno-

<sup>3</sup> Its principles seem rather vague. In Gy. Décsy's interpretation «structural comparison» led to the substitution of a typological invariant of compared systems for their common source — «Die Vokalsysteme, die für die Hauptsprachform festgestellt werden, können auch ohne Bezug zu den Etyma miteinander verglichen werden» (Décsy 1969 : 35, see also 52 ff.).

Ugric languages. Known phonetic laws were reformulated into algorithmic rules which transform PFU reconstructions into their «expected» reflexes; the analysis of discrepancies between «expected» and actually attested forms is very instructive for it enables us to determine the validity of postulated laws and to introduce necessary amendments.

To complete this brief survey of generalities, it is necessary to add that until now the ideas and methods of «diachronical phonology» (after Roman Jakobson) have not found their way into the domain of Uralic phonological reconstruction. As a matter of fact, the search for causality and interrelationships in historical phonetic developments has not attracted much attention. B. Serebrennikov's study of the main trends in the transformations of PU stem structures is one of very few exceptions. The author supposes that the PU bisyllabic root which (presumably due to intensive expiratory stress confined to the first syllable) could not begin with a voiced consonant, was anomalous from the typological viewpoint; all further phonetic developments in individual daughter languages tended to eliminate this anomaly (Серебренников 1974).

### **Vowels of the first syllable and prosody**

Towards the end of the 1960s the decades-long controversy between W. Steinitz (who designed his PFU vocalic reconstruction after the Eastern Hanti pattern and assumed the existence of full and reduced vowels and of a ramified system of vocalic alternations in PFU) and E. Itkonen (whose «key-language» was Finnish and who incorporated short and long vowels into his PFU reconstruction) was over. After W. Steinitz's death (1967) there remained hardly any active supporter of his theory.

This does not mean, however, that Itkonen's interpretation has enjoyed unanimous acknowledgement. No doubt, his reconstruction proved to be a satisfactory approximation to the state of affairs which existed in PFU, a fact corroborated by the data on the most ancient Indo-European loan-words in Finno-Ugric (Itkonen 1969 : 79—83), by external (Nostratic) comparison (Иллич-Свитыч 1967), by the possibility to derive the vocalism of a reasonably high percentage of Proto-Samoyed (PS) forms from that of their PFU cognates (Janhunen 1981). But the practical application of Itkonen's reconstructive procedure mostly consists in taking ready vocalic skeletons of proto-forms «aus dem finnischen Kühlschranks»; though very simple, this procedure leaves us in a quandary when a presumable PFU stem has no Balto-Finnic or Lappish cognates, or when we try to calculate what the cognates in some distantly related languages (especially in Permian and in Ob-Ugrian) can be like. Constant references to «sporadic» changes (see, e. g. Itkonen 1969 : 84, 94; 1970 : 174) can hardly satisfy the methodological standards of comparative linguistics: sporadicity in historical development may be thought to affect single words but not whole categories of stems. In addition, the very principle of «key-languages» (Schlüsselsprachen) — a common point in both Steinitz's and Itkonen's theories — arouses doubts, even if this role is assigned to a language as archaic in respect of vocalism as Finnish (an analogy suggests itself with the early days of Indo-European studies when Sanskrit served as the pattern in all reconstructions).

The last fifteen years have seen a whole series of new controversies concerning the problems of Finno-Ugric comparative and historical phonology and centered mostly around the material of the Eastern Finno-Permian languages. Some opinions of E. Itkonen have been challenged by prominent specialists in these languages, mainly from Hungary (G.

Bereczki, É. Korenchy, T. Mikola, K. Rédei); their treatment of disputable points, however practically never approaches that of W. Steinitz.

The origin of Cheremis reduced vowels was one of the most heatedly debated questions. It is known that W. Steinitz considered the existence of reduced vowels in Cheremis (as well as in Hanti) a significant argument in favour of his PFU reconstruction. Opposing this reconstruction, E. Itkonen still found it reasonable to posit the Proto-Cheremis archaicity of four reduced vowels ( $\delta$ ,  $\alpha$ ,  $\check{u}$ ,  $\check{ü}$ ) and to claim the secondary character of Eastern Cheremis full vowels whenever they correspond to reduced vowels in the North-Western dialects (Itkonen 1954 : 200 ff.). G. Bereczki (1969; 1971) rejected this approach and pointed out that the problem should be viewed only within an areal framework: the reduction of etymologically high vowels, accompanied by the narrowing of middle-low vowels, was a common diachronic feature of a Sprachbund which comprises Cheremis, Chuvash and Tatar. This opinion is shared by D. Kazancev, who seems to have been the first to assume a Turkic influence upon the development of reduced vowels in Cheremis (Казанцев 1964). Kazancev argues that the idea of «regressive» development — from reduced vowels to full ones — in Eastern Cheremis (E. Itkonen, L. Gruzov) finds no support in the material of neighbouring Turkic dialects, which have never experienced any «regressions». On the contrary, this material reveals practically the same dialectally distinct stages in the development of reduced vowels as the Cheremis dialectal material (Казанцев 1975). The problem has been cautiously touched upon also by A. Róna-Tas (1975), whose comments concern the absolute and relative chronology of changes in the Bulgar and Volga-Kipchak vowel systems. In his sharp objections to G. Bereczki, E. Itkonen (1969 : 212—246; 1972) admits that the Cheremis reduction of vowels could be of Bulgar provenance, but displays reluctance to apply the areal considerations to his detailed treatment of controversial points; instead, he refers now and again to sporadic changes of vowels. Up to now the last contribution to this discussion belongs to T. Mikola (1980). Leaving the areal considerations aside, the author stresses the systemic considerations which prevent him from sharing E. Itkonen's opinion. As long as multi-stage reversible development (reduction + regression) is hardly imaginable, Mikola's conclusions approach those of G. Bereczki and D. Kazantsev: the transformations in the Cheremis vowel systems had been induced by the tendency of middle-high vowels to become narrower (this tendency is shared by Mordvin and Permian), then under the pressure of «new» (narrowed) *i*, *ü*, *u* the Proto-Cheremis vowels of the same quality underwent reduction (but preserved their original stress) in Western dialects, while in Eastern Cheremis the loss of stress was a more common phenomenon.

In respect of Mordvin historical phonetics and Proto-Mordvin reconstruction similar problems have been raised by E. Itkonen in his study «Zum Ursprung und Wesen der reduzierten Vokale im Mordwinischen» (1971a); a possibility of simplifying the general outline of Mordvin development is suggested by T. Mikola (1980 : 274—276).

The problems of Proto-Permian vocalic reconstruction and of correspondences between PFU and Proto-Permian vowels look today even more tangled than before. The reconstruction proposed by V. Lytkin in his outstanding monograph (Лыткин 1964, cf. also minor modifications made in КЭСК 22—28) is irreproachable insofar as it gives a perfect explanation of all vowel correspondences between the Permian dialects. Typologically, however, it looks cumbersome and not quite plausible. Lytkin's variant is more or less sharply opposed by alternative Proto-Permian

vocalic reconstructions and reconstructive suggestions set out by E. Itkonen (1954 : 264—340; 1971), R. Harms (1967), K. Rédei (1968; 1969), H. Katz (1974) <sup>4</sup>. Several attempts have been made to discover global trends in the Pre-Permian development of vowels (any corrections to the existing PFU reconstruction will hardly refute the assertion that the Pre-Permian period was extremely rich in vowel shifts). K. Rédei (1968; 1969) appeals to so-called «horizontal harmony», which caused the vowels of the first syllable to change their rise, lining up with the vowels of the second syllable (later apocoped). The objections of E. Itkonen (1969 : 246—250; 1975) are directed mostly against the very notion of «horizontal harmony» — in his opinion this is terminological nonsense; see also Rédei 1975. V. Lytkin devoted much attention to the origin of the Permian (partly also Cheremis) secondary labialization of vowels (Лыткин 1972; 1973; 1974 : 168—174; 1975; cf. also Кельмаков 1975). According to Lytkin, this process affected PFU non-labialized vowels mainly in the position before non-palatalized consonants, which presumably had a labialized co-articulation. Unfortunately the material is not very convincing: these papers, unlike earlier works of the same author, pay too great a tribute to «sporadic» and leave numerous contradicting examples (among them, the regular delabialization of PFU \**u* into Perm. \**i*!) unexplained. Since the qualitative identities of at least some Proto-Permian vowels remain problematic, it is difficult to take for granted the results of É. Korenchy's shrewd study of the relative chronology of Pre-Permian vowel shifts (Korenchy 1974). Of obvious importance for the future elaboration of Proto-Permian vocalic reconstruction are the results of V. Kel'makov's studies; in a summarizing congress paper he showed that varied dialectal vowel systems in Udmurt can be traced back to the Proto-Udmurt system with 9 vowels of the first syllable (Кельмаков 1981).

Serious reasons to doubt the PFU origin of the Balto-Finnic quantitative correlation of vowels have been indicated in the 1960s by M. Lehtinen (1967), G. Berezki (1968) and K. Rédei (1968). E. Itkonen (1969) defended his reconstruction along all the main lines of assault. The arguments of neither side seem sufficiently convincing. Berezki and Rédei cite numerous examples where Balto-Finnic short and long vowels have the same correspondences in other Finno-Ugric languages, but nothing proves that this is not the result of a secondary merger. Itkonen, in his turn, cites no fewer examples where quantitatively different Balto-Finnic vowels have different correspondences in the related languages, but nothing proves that the original distinction was really a quantitative one. In another paper E. Itkonen (1971) investigated possible traces of the PFU quantitative correlation of vowels in Komi-Ziryene where some dialects show positional lengthening of vowels. As to the distinctions in such word-pairs as (Upper Sysola) *pōn* (or rather *pōn*) 'dog' vs. *pon* 'end', also mentioned by Itkonen, the author of the present review article has asserted their tonal nature (Хелимский 1977 : 35). The detailed etymological analysis of Finnish *a*-/*ä*-stems with long vowels of the first syllable (Plöger 1982) has confirmed that such stems are predominantly innovative and, consequently, that the PFU quantitative opposition, if it did exist at all, was neutralized in the vast category of *a*-/*ä*-stems.

A «laryngealistic» interpretation of the problem of long vocalism

<sup>4</sup> H. Katz seems to have overestimated the role of the evidence provided by Komi-Ziryene loan-words in Ob-Ugrian: differences in time and place of borrowing are no less important than qualitative and quantitative distinctions between the sounds of the source language.

has been recently proposed by J. Janhunen in his fundamental study of the PU lexical and phonetic stock (1981). Janhunen states that Finno-Permian long vowels regularly correspond to PS vocalic clusters with \**ä* as the second element, cf. Fi. *kuusi* 'spruce' ~ PS \**kää̃t*, Fi. *kieli* 'tongue' ~ PS \**keäj* etc. There are three ways of reconstructing the source of such correspondences (PU long vowel; PU vocalic cluster; PU combination of a short vowel with a sound of special phonetic quality, susceptible of developing either into the prosodic feature of length or into *ä*). The author chooses the third way and reconstructs PU \**kää̃si* 'spruce', \**kää̃li* 'tongue' etc., where \**x* is most likely a «laryngeal»-type consonant; there are possibilities of extending the reconstruction of \**x* to some other structural types of PU stems. It should be noted that the occurrence of \**x* (if it really existed in PU) must have been subjected to certain restrictions which look unusual for a consonant — for example, it never occurred in a preconsonantal position in *a*-/*ä*-stems<sup>5</sup>.

Oddly enough, a similar attempt to eliminate long vowels by introducing laryngeals into PU reconstruction was made earlier by J. Bańczerowski (1972; 1972a). In Bańczerowski's interpretation, however, the idea was absolutely unacceptable, being illustrated with unconvincing or just erroneous examples. For this author PU laryngeals are an element of an overall revision of the PU reconstruction, aimed at making it identical with the Proto-Indo-European reconstruction by means of arbitrary and purely mechanical transference of reconstructive items, cf. Bańczerowski 1975; 1981 (primary monovocalism and apophony in PU); 1971 (PU *tenuis*, *mediae* & *mediae aspiratae*) etc.<sup>6</sup>

A. Raun has expressed his doubts concerning the actual phonetic nature of PFU \**i*, \**e*, \**u*, \**o* and has proposed labelling them with the feature «tense» rather than «long», since this is more non-committal as to phonetic realization (Raun 1974 : 306). In the same article he has set out the hypothesis that the PFU structure of prevalently disyllabic stems and monosyllabic suffixes with definite order rules hardly needed any «strong-centered» (fixed) word stress (Ibid. : 305). Otherwise the problems of PFU/PU stress have not evoked much interest in recent years.

Having claimed the presence of tonal or tonal-type oppositions in the majority of Uralic languages, the author of the present article has tentatively supposed that these prosodic phenomena can be of PU origin (Хелимский 1977). In some languages (e. g. in Proto-Permian) tonal distinctions between vowels might have served as the latent cause of some phonetic changes, i. e. the distribution of reflexes followed the distribution of tonal characteristics. Further elaboration of this hypothesis depends first of all on the verification of my preliminary data and on the compilation of representative accented vocabularies for at least some dialects.

### Vowels of non-first syllables and stem structure

V. Lytkin had every reason to stress at the plenary session of the 3rd International Congress of Finno-Ugrists in Tallinn: «Неразработан-

<sup>5</sup> The only contradicting example in the list of \**x*-cases PU \**hoxmä* 'hare' (Janhunen 1981 : 242), is to be deleted because PS has \**hämä* and not \**hää̃mä* (this improvement, or rather the return to the PS reconstruction given in Janhunen 1977 : 105, has been accepted by J. Janhunen in the course of personal communication).

<sup>6</sup> This revision is not justified by J. Bańczerowski's references to the genetic relationship between PU and Proto-Indo-European and to the Nostratic theory. A genetic relationship between two languages certainly does not imply that they possess one and the same set of phonemes!

ность вокализма непервого слога в настоящее время является камнем преткновения на пути дальнейшего исследования ряда проблем финно-угорского языкознания» (Лыткин 1970 : 221). No wonder that in the 1970s and early 1980s the vocalism of non-first syllables was in the centre of attention in Uralic comparative and historical linguistics. This can be concluded from both the quantity and the importance of studies devoted to the subject. Progress in this field could, perhaps, be even more significant, were it not hampered by the dogmatic acceptance of some oversimplifying views.

Here I refer, first of all, to the views according to which PU/PFU categorematic word stems must have been structurally uniform: they are said to have a disyllabic (or, quite rarely, trisyllabic) structure, Auslaut in one of only three vowels — \**a*, \**ä* or \**e*, and vowel harmony (with \**e* being harmonically neutral in non-first syllables). This reconstruction, which became almost a commonplace, results from the presumption that only those types of stem structure which are of high frequency in indigenous strata of Balto-Finnic (Finnish) vocabulary may be considered original; it is therefore directly connected with the key-language status of Finnish in E. Itkonen's theory. But even Finnish has other, relatively infrequent but still sufficiently numerous, structural types of indigenous stems, e. g. *i*-, *o*-, *u*- and *y*-stems, disyllabic consonantal stems, etc.; according to Itkonen, these are secondary and have developed from «standard» *a*-/*ä*- and *e*-stems due mostly to sporadic (i. e. unaccountable by phonetic laws) changes. Diversity of stem types found in other Uralic languages is also explained either in terms of sporadic processes or by secondary morphological developments (suffixation, etc.).

A sizable portion of recent publications was definitely inspired by this traditional set of ideas (eventually with slight modifications). E. Itkonen (1969 : 81—82; 1977) discussed the hypothetical change of some original *a*-/*ä*-stems into Finnish *e*-stems, as in *Fi. sarvi* (\**šarve*) 'horn' ~ *Lp. čoar've* (\**šorva*). He believes that *-i* (< \**-i* < \**-ai*/\**-äi*) penetrated at first into conjunctive forms of the plural (nouns) or into imperfect tense forms (verbs), and was then analogically extended to other paradigmatic forms. The analogy is responsible for qualitative changes in the first syllable as well. These phonetic and morphological processes are supposed to have acted selectively, affecting only a part of former *a*-/*ä*-stems. The mechanisms of such selectiveness remain however obscure, not to say queer. For example, one has to posit the generalization of conjunctive plural forms for some nouns which occur, and probably always occurred, almost exclusively in the singular (*sappi* 'bile', *talvi* 'winter', *vaski* 'copper'). An opposite approach to this type of correspondences between Finnish and the related languages was used by V. Illič-Svityč and V. Dybo, cf. below.

A. Sauvageot (1973) evaluates the comparison between thematic vowels of Hungarian nominal stems and final vowels of their Finnish cognates as leading to no definite results, he attributes the existing ambiguities to the chaotic and unpredictable action of irregular changes. The central issue of a monograph on the history of word-final vowels in the Permian languages (Molnár 1974a) is the conclusion that the almost total loss of word-final vowels in Permian was preceded by their narrowing, which affected even the PFU low vowels — \**a* and \**ä*. Regrettably F. Molnár pays practically no attention to the distribution of some very important relics of word-final vowels (stems with and without paradigmatic increments in Komi, cf. the results of G. Ganschow and E. Helimski discussed below) and to their origin. His discussion of the possible causes of final vowel reduction in the Finno-Ugric languages

(Molnár 1974) can be valid only inasmuch as the reconstruction of structurally uniform PFU stems is true. The same dependence on the conventionalities of the traditional reconstruction is characteristic of the paper by I. Bátori (1981), who proposed a generative formalization of PFU vowel harmony rules, and of that by M. Valle (1973), who argued for the necessity to reconstruct Early Proto-Finnish \**i̯* and \**e̯*.

The fact that Finnish *a*-/*ä*-stems and *e*-stems go back to different PU/PFU sources seems incontestable. One can hardly give much credit to the attempts to reduce the reconstructed vocalism of non-first syllables to \**a* and \**ä* (in complementary harmonical distribution) and to explain the appearance of *e*-stems as a Proto-Finnish innovation (Décsy 1969 : 59–61; 1971; cf. objections in Лыткин 1970 : 222 ff.). The PU archaicity of the opposition in question is confirmed by the existence of a systematic distinction between Taz Selkup cognates of *a*-/*ä*-stems and of *e*-stems (Хелимский 1976<sup>7</sup>).

The original identity of this opposition has been, however, interpreted in more than one way. G. Ganschow's studies on the dichotomies of nominal stems in Ugrian (1968; 1981), Finno-Volgaic (1971) and Permian (1979) resulted in an overall theory, according to which PFU had two types of nominal stems: monosyllabic stems with consonantal Auslaut and disyllabic stems with \**-aγ*/\**-äγ* in the second syllable (Ganschow 1980). The first type is brought into relationship with Finnish disyllabic *e*-stems (*-e-*, *-i* in such stems are supposed to be of secondary nature) and with CVC- or CV-type stems in the Mordvin, Cheremis, Permian and Ugrian languages. The second type is brought into relationship with Finnish stems in *-a*-/*ä* (partly also in *-e<sup>h</sup>*, *-vi* and *-u*-/*y*), Mordvin and Cheremis vocalic stems, Komi monosyllabic stems with paradigmatic increments (*-j*-/*-k-*), Ob-Ugrian stems ending in *-γ*. Ganschow is not embarrassed by numerous discrepancies between actual correspondences and those implied by his theory: for him, structural considerations, i. e. the presence of certain dichotomies of nominal stems, which presumably go back to the original dichotomy of consonantal stems and of \**-aγ*/\**-äγ*-stems, are of greater importance than ascribing individual stems to one of the two types (which are supposed to have been easily interpenetrative). It is obvious that the reconstruction proposed by Ganschow has no greater explanatory force than the traditional one, but it looks typologically much less plausible; therefore one can hardly expect it to find many supporters. At the same time it is necessary to give full credit to some less general conclusions, especially in the Permian domain. G. Ganschow convincingly refuted earlier suppositions concerning the relationship between PFU *e*-stems and Komi *j*-increments (1979) and revealed a complementary distribution between *k*-increments (occur after voiceless sibilants and affricates: *leč*/*lečk-* 'snare') and *j*-increments (occur after other consonants: *lim*/*limj-* 'snow') (1980 : 47–49).

The secondary nature of stem-final vowels in the so-called *e*-stems (Fi. *-e*-/*-i*, Lp. *-ä*), which correspond to monosyllabic, usually consonantal stems in other Uralic languages (Ganschow 1971), has been claimed by other scholars as well, cf. especially a generative substantiation of this idea in Вийтсо 1973. T. Mikola (1980 : 273) drew attention to the fact that vowel length in numerous Finnish *e*-stems with an intervocalic resonant (*kieli*, *suoni* etc.) can be explained by the original monosyllabicity (\**kel* > \**kēl* > \**kēli*, \**son* > \**sōn* > \**sōni*). This explanation looks

<sup>7</sup> It should be admitted that the appearance of the adequate PS reconstruction (Janhunen 1977, see below) made the method employed in this study (direct comparison between Taz Selkup and PFU) obsolete, even if its results stay valid.



much more plausible than references to a possible emphatic origin of long vowels in such examples (Itkonen 1969 : 103—104).

J. Janhunen modifies the traditional reconstruction by positing PU *i-/ī-*stems instead of *e-*stems; he also finds at least two examples of «*iw*»-stems (> Fi. *y*-stems) (Janhunen 1981 : 238—239, 249). Moreover, his results clearly indicate that Finno-Permian \**a* and \**ä* have at least two regular PS counterparts (\**a*/\**ä* and \**ā*), though the author himself would not modify the traditional reconstruction to allow for such duality (Ibid. : 226—230). J. Puzstay suggested reconstructing the PU stem structure CV for a group of categorematic words, e. g. for the proto-forms of Hu. *fő* 'head', *nő* 'woman', Fi. *puu* 'tree', *luu* 'bone' (1983 : 196).

From some of the studies discussed above, as well as from earlier works, it becomes more and more clear that the PU/PFU vocalism of non-first syllables was hardly as poor and the PU/PFU stem structure was hardly as uniform as the traditional reconstruction implies. Beyond all manner of doubt, those stem types that are reflected as *a*-/*ä*-stems and *e*-stems in Finnish were of extremely high frequency in the proto-language. But this surely does not mean that some (or even many) other stem types could not exist.

The founder of the modern Nostratic theory V. Illič-Svityč attached great importance to Uralic vocalism in his Nostratic reconstruction (cf. Иллич-Свитыч 1967). Basing himself on the preliminary notes and remarks of his late colleague, V. Dybo developed several interesting hypotheses which assume the absence of vowel harmony in PU and qualitative diversity of stem-final vowels (Дыбо 1971 : ix-xi, xviii-xxxiv; 1972). 1) The abnormal correspondence between Fi. *a* and some front vowel (\**ä* or \**e*) in other Finno-Ugric languages is considered to appear in originally non-synharmonic stems, e. g. \**säppa* 'bile' : Fi. *sappi* (\**sappi*) ~ Md. *šäpä* (\**säppä*). 2) The labialized \**o* is reconstructed in the second syllable if in the first syllable Fi. *a* corresponds to Lp., Md. \**o*, e. g. \**tammo* 'oak' : Fi. *tammi* (\**tamma*) ~ Md. *tumo* (\**tomma*), 3) The correspondence between Fi. *aa* and the reflexes of \**ä* in other languages is supposed to go back either to \**ä* or to an original harmonical heterogeneity, e. g. \**kälä-* or \**kēla-* 'to wade' : Fi. *kaalaa-* (\**kälä-*) ~ Lp. *galle-* (\**kälä-*).

According to V. Illič-Svityč, in Hungarian words of PU/PFU origin long vowels occur mainly in former *e*-stems, while in former *a*-/*ä*-stems vowels are usually short; this fact received an accentological explanation (Дыбо 1971 : xxxiii). A more detailed analysis of this distribution has been undertaken by the author of the present review article (Хелимский 1979). It appears that the monosyllabic nominal stems with quantitative alternation in Hungarian (*kéz/keze-*, *in/ina-* etc.) have developed, as a rule, from the stems that contained a short vowel and ended with a consonant (Komi cognates have no *j*-increment, Finnish has *-e-/i*). On the contrary, the Hungarian monosyllabic stems with non-alternating long vowels seem to correspond (results of secondary processes eliminated) to Fi. *i*-stems and Komi *j*-incremented stems, while the stems with short vowels correspond more often than not to Fi. *a*-/*ä*-stems. These observations show us the necessity to reconstruct at least three types of PU/PFU stem Auslaut (consonant, high vowel, low vowel). On the other hand, their interpretation in the spirit of Illič-Svityč's accentological ideas enables us to postulate the rule of Proto-Hungarian stress placing which is similar to the rules acting in some languages of the Volga-Kama region («in more than monosyllabic words, the last syllable is stressed in case it does not contain a high vowel»).

A rich diversity of verbal stem types in Mordvin and, presumably, in Proto-Finno-Volgaic and in PFU has been revealed by D. Nad'kin. His Finno-Volgaic reconstruction includes the following types of verbal stems: 1) disyllabic vocalic, ending in: a) *\*a* or *\*ä*, b) non-low vowel, c) diphthong; 2) monosyllabic consonantal (Надькин 1979; 1981). These important results perhaps suggest that the plurality of Mordvin nominal stems, which D. Cygankin divides into seven classes (Цыганкин 1980), may also be an archaic relic.

An attempt at the historical treatment of Vach Hanti vowel alternation (Viitso 1980) and the incorporation of labialized vowels of non-first syllable into the PS reconstruction (Хелимский 1978) also proceed from the assumption that there is no need to impoverish the reconstructed vocalism of the non-first syllable. It can be expected that further elaboration of this research direction will not only create an essentially new picture of the PU/PFU vocalism of the non-first syllable, but clear up many problems of the vocalism of the first syllable as well. One has, however, to bear in mind that the relatively low frequency of «outlying» stem structure types is a serious obstacle to the search for them and to their reconstruction.

### Consonants

All the main issues in the reconstruction and history of PU/PFU consonants were satisfactorily settled already in the first decades of our century by H. Paasonen, Y. Toivonen, Y. Wichmann and some other scholars. Their results, systematized and partly revised by B. Collinder (1960 : 45—148), account for almost all the consonantal correspondences between the Uralic languages, leaving question-marks of only minor importance. In later studies, starting with Steinitz 1952, some attempts have been made to reduce or to reinterpret the reconstructed PU/PFU consonantal system; as a rule, such attempts turn out to be hasty and misleading.

A. Raun in his «Essays» (1971 : 1—44) surveyed the PFU consonantal reconstruction from the viewpoint of distinctive features phonology. At first sight his ideas concerning the original complementary distribution between voiced spirants and homorganic stops or between affricates and sibilants may seem attractive, but actually they are irreconcilably contradicted by numerous reliable etymologies. One can only agree with L. Honti when he comments on one of Raun's ideas and indicates that a relatively low frequency of a proto-language phoneme cannot be a sound reason for its entire elimination from the reconstruction (Honti 1972 : 7).

The modifications proposed by T.-R. Viitso (1975) — e.g. the establishing of a «tense» series *\*p<sup>c</sup>*, *\*t<sup>c</sup>*, *\*l<sup>c</sup>* etc. (= *\*pp*, *\*tt* + *\*š*, *\*đ* in the traditional PU/PFU reconstruction) — are radical but, as the author himself admits, purely conventional. In the articles by P. Sammallahti (1979) and especially by J. Janhunen (1981) the PU reconstructed system is based only on the limited number of the most reliable etymological pairs from PFU and PS, therefore it does not include some more or less traditionally reconstructed items (geminate stops, *\*č*, *\*ŋ* and *\*l*, *\*ɣ*, *\*š*, in Janhunen's version also *\*š* and *\*l*). The necessity of such reduction and the validity of its formal grounds are doubtful; of much greater importance is, however, the fact that Sammallahti and Janhunen succeeded in finding additional laws of phonetic development from PU to PS (cf. also Хелимский 1976).

Much attention has been given lately to historical and phonological problems in the domain of affricates and sibilants. Arguing with A. Raun,

L. Honti (1972) showed that the confusion among the reflexes of these two categories of sounds in some of the Uralic languages is of a secondary nature and results from (mostly regular) desaffrication processes; his paper deals also with the paradigmatic alternation between \*ńć and \*ć, \*nč and \*č. In another article Honti (1981) upholds the reconstruction of PFU long affricates \*ćć and \*čč, refuting the doubts expressed, for instance, by E. Itkonen. Two detailed studies by H. Katz (1972; 1973) were devoted to rule ordering and relative chronology in the changes which the original system of sibilants and affricates underwent in the Ugrian languages. B. Čop, famous for his Indo-Uralic comparative studies, argued that PU \*ć and \*č should be reinterpreted as the palatalized stop \*tʃ and the cerebralized stop \*tʃ̣ respectively (Čop 1970 : 316); the idea was not quite new, cf. Steinitz 1952 : 37. It may be hoped that the general revival of interest in the particulars of reconstructions will help to eliminate some of the above-mentioned remaining question-marks; for example, until now nobody seems to have either proven or refuted Y. Toivonen's tentative reconstruction of \*c as the third PFU affricate (Toivonen 1928 : 245—248).

### Phonological reconstruction of intermediate proto-languages

For many years all the main efforts of comparativists have been focused on the PU/PFU reconstruction, partly to the detriment of reconstructive research on less distant chronological levels. That is why it may now seem that the Uralic proto-language is known (or rather is believed to be known) better in the phonological respect than some of its descendants — the proto-languages of separate Uralic language groups and subgroups, cf. Honti 1975 : 133. Some of the above-mentioned weak points of the traditional PU/PFU reconstruction owe much of their weakness to the fact that they tell us nothing, or next to nothing, definite about the intermediate stages of phonological development. This was justly emphasized by G. Ganschow (1977), who claimed the necessity of an «ascendant» approach to reconstruction: his «Aszendenztheorie» envisages a step-by-step movement from lower branching knots of the Uralic genealogical tree to higher ones. It should be added that in many respects the intermediate reconstructions are of no lesser cognitive value than the PU reconstruction, and easier to be empirically checked (study of loan-words, etc.).

The sharply grown interest in the systematic reconstruction of intermediate proto-languages, especially in the domain of phonology, has undoubtedly become one of the predominant features in modern Uralic linguistics. Fortunately, new studies in this area have an excellent pattern to follow — I mean the Balto-Finnic reconstruction thoroughly elaborated long ago; see, for instance, its recent concise presentation in Laanest 1975. It is however noteworthy that T.-R. Viitso (1981; Вийтсо 1982) managed to make this reconstruction deeper and more detailed by singling out the Proto-Balto-Finnic dialectal variants; this enabled him to cast new light on the development of *õ*, consonant gradation, prosody, palatalization and other phenomena.

Some new (but mostly incomplete and therefore debatable) results in the Proto-Cheremis, Proto-Finno-Volgaic, Proto-Permian reconstruction have been discussed above. Decisive steps have been taken towards the solution of numerous problems existing in Ob-Ugrian comparative and historical phonology. L. Honti in a series of articles and a monograph (1982) set out a sound alternative to W. Steinitz's conception of the Proto-Ob-Ugrian vocalism of the first syllable; this conception, supported and further developed by G. Ganschow (1977), is an extrapolation of the

Eastern Hanti data to the Ob-Ugrian level rather than a true reconstruction. Honti's propositions are much better balanced, being in each case based on those Mansi and Hanti dialectal data which can hardly be treated as innovative. Nevertheless, his treatment of diachronical developments lacks desirable exactness (in terms of phonetic laws), partly because the results of the Umlaut-type interactions with the vowels of non-first syllables are not taken into due consideration<sup>8</sup>; as a result, some reconstructed proto-forms in his magnificent Proto-Ob-Ugrian vocabulary need reconsideration. One of the cardinal issues in the book by Honti is the demonstration of the secondary origin of the well-known Eastern Hanti vowel alternations (*ämp* 'dog' : *impəm* 'my dog', etc.), cf. also Honti 1983. T.-R. Viitso (1980) also views these alternations as innovative, but, unlike Honti, derives them from an Umlaut-type influence of hypothetical stem-final narrow vowels; this explanation evoked valuable comments and only partly justified objections by Honti (1981a).

As far as the Ob-Ugrian consonantal reconstruction is concerned, the views of G. Ganschow (1977 : 249—253) and L. Honti (1982 : 24—25) are rather close. One cannot be, however, gratified by this case of agreement between the two opponents, because neither reconstruction accounts for the ambiguities in the development of \**n*, \**l*, \**s*, \**w*, \**ɣ*.

The most significant and incontestable advance has been made in PS reconstruction. It will hardly be an exaggeration to evaluate J. Janhunen's «Samojedischer Wortschatz» (1977) as the greatest achievement of comparative and historical research in modern Uralic linguistics. The book comprises about 800 etymological entries which cover almost exhaustively the common lexical stock of the Samoyed languages; each entry is preceded by a reconstructed PS form. The PS phoneme system established by Janhunen (p. 8) is not accompanied with any tables which would show the distribution of regular reflexes in the daughter languages, while the comments on phonetic history within individual entries are rare and short. Nevertheless, work with this etymological vocabulary shows that in most cases the reconstructed proto-forms contain all the information necessary to account for (or even to derive) the actually attested forms of the modern Samoyed dialects. This means that Samoyed historical phonology — until recently a Cinderella of Uralic linguistics — has gained the most advanced positions, serving at the same time as spectacular proof that the historical development of the Uralic languages, as well as of other languages of the world, can be and should be described in terms of phonetic laws and not in terms of «trends of phonetic development» or «sporadic changes».

The main problems of Northern Samoyed historical vocalism, which are of primary importance for PS reconstruction, were elucidated in an earlier published paper (Janhunen 1975—1976). Janhunen shows that the correlation of palatalized and non-palatalized consonants in Nenets is innovative and does not go back to Proto-Northern-Samoyed, as has been posited in an almost simultaneously published study (Sammallahti 1975). The consonant correspondences between PS and its descendants, which are only implicitly present in Janhunen's vocabulary, have been investigated by T. Janurik (1982); regretfully, excessive formalism makes it difficult to use his tables and, in particular, to distinguish positionally determined variation of reflexes from purely superficial diversity stemming from inadequate transcriptions. Much more concise and convincing is the presentation of the main correspondences between vowels, with special reference to the Selkup reflexes (Mikola 1980—1981).

<sup>8</sup> For further details see also my review of L. Honti's monograph in one of the coming issues of this journal.

The high reliability of Janhunen's PS reconstruction surely does not exclude the possibility of introducing certain amendments or of reconsidering certain proto-forms. Basing himself on a significantly enlarged corpus of Northern Samoyed etymologies, the author of the present review article has argued for the expediency of reconstructing the labialized vowels of non-first syllables instead of Janhunen's sequences \**aj*, \**ajā*, \**ajäj* (Хелимский 1978). V. Terent'jev (1979; Терентьев 1982) analyzed some details in the PS reconstruction of low vowels and showed that the development of \**a* into Selkup *ā* is regular before a labial (therefore some variant proto-forms should be deleted). H. Katz (1979) indicated the possibility of reconstructing PS \**j* as the source of Selkup *l*. J. Morev confirmed Janhunen's implicit conclusion that PS had no geminate consonant phonemes (Модев 1981). His attempt to demonstrate the presumable PS archaicity of Selkup labiovelars (Модев 1975) appears to be unsuccessful, cf. Katz 1977. Certain problems of PS morphophonology as well as some details of the phonological development in Kamasian remain unclear.

Not only did the successful PS phonological reconstruction open new horizons for the historical study of the Samoyed languages, but it created a firm foothold for the verification of the PFU phonological reconstruction and for the revelation of possible phonetic changes which could have occurred during the interval between PU and PFU. This line of research is represented by Sammallahti 1979; Janhunen 1981; 1982; Pusztay 1983 (some viewpoints from these articles have been cited above, in connection with individual problems of the PU vocalic and consonantal reconstruction). Until now the only important innovation, prompted by the PS material, concerns the reconstruction of PU \**i*, preserved as \**i* in PS, but having merged with \**a* in PFU (or only in Finno-Permian?) (Sammallahti 1979 : 59; Janhunen 1981 : 227). It must be borne in mind, however, that P. Sammallahti and especially J. Janhunen deal with a substantially reduced stock of Uralic (Finno-Ugric-Samoyed) etymologies, with all more or less questionable or insufficiently attested comparisons withdrawn. The withdrawn material undoubtedly contains quite a number of old etymologies which after all will prove valid and require explanation. Therefore the obtained results, in spite of all their importance, have to be evaluated as preliminary ones. Besides, the Finno-Ugric side in the Uralic comparison is in reality represented by Finno-Permian or even (especially insofar as the crucial point of vowel reconstruction is concerned) Finno-Lappish proto-forms. The Ugric proto-language, essentially important as the potential *tertium comparationis*, remains on the whole beyond our reach as long as we have no adequate Proto-Ugric phonological reconstruction.

#### Abbreviations

LP — Lingua Posnaniensis. Poznań; NÉNV — Népraiz és Nyelvtudomány, Szeged.

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## ПРОБЛЕМЫ ФОНОЛОГИЧЕСКОЙ РЕКОНСТРУКЦИИ В СОВРЕМЕННОМ УРАЛЬСКОМ ЯЗЫКОЗНАНИИ

В обзорной статье предпринята попытка анализа основных итогов и ведущих тенденций в исследованиях по фонологической реконструкции (Р) уральского праязыка и промежуточных праязыков уральской семьи (рассматриваются главным образом работы 70-х и начала 80-х годов). Парадоксальность сложившейся ситуации состоит в том, что используемая рядом этимологических словарей прауральская Р широко признана и едва ли не возводится в канон, хотя в действительности может рассматриваться лишь как ориентировочная Р, поскольку не найдены строгие фонетические законы, устанавливающие соответствие между реконструируемыми праформами и реально засвидетельствованными формами большинства уральских языков (это особенно относится к сфере вокализма). Окрепшие в современной лингвистической компаративистике тради-



ции младограмматизма, равно как и популярность генеративной фонологии, приводят многих исследователей к отказу от гипотез о «спорадическом» развитии, к настойчивому поиску фонетических законов, нередко и к радикальному пересмотру существующей Р. Это направление исследований представляется автору наиболее перспективным (в сравнении с разработками в рамках априорных постулатов, а также с Р без опоры на конкретный этимологический материал при ложно понятом структурном подходе).

В последние годы внимание концентрируется на таких узловых проблемах, как генезис систем вокализма в волжских и пермских языках, Р долгих гласных, Р вокализма непервых слогов и структуры основ, история сибилантов и аффрикат. Прогресс в их разработке неодинаков; знаменателен, в частности, отход от концепции, предполагающей структурное единообразие праязыковых основ и бедность вокализма непервых слогов, сопровождающийся поиском возможностей Р относительно редких структурных типов (консонантные основы и основы на гласные различного качества в дополнение к «традиционным» *a-/ā-* и *e-*основам); продвижение в этом направлении (а также, возможно, акцентологическая Р) может одновременно дать решение ряда проблем вокализма первого слога, в частности, проблемы долгих гласных.

Резко возрос интерес к Р промежуточных фонологических состояний, долго оставшейся как бы «в тени» прауральской и прафинно-угорской Р. Появление адекватной прасамодийской Р создало предпосылки для перехода от проецирования прафинно-пермских (или даже раннепрафинских) фактов в прауральское прошлое к одновременной опоре на данные разных ветвей уральских языков; дальнейший прогресс тормосит, однако, отсутствие адекватной Р фонетического облика угорских праформ.