

BOOK REVIEWS

SELUTINA, Irina Jakovlevna: *Kumandinskij vokalizm. Eksperimental'nofoneticheskoe issledovanie* (The Vocalic System of the Kumandin Language. The Phonetic Experimental Investigation). – Novosibirsk: Sibirskij Hronograf 1998. 184 pp.

Usually Finno-Ugric linguists have no opportunity or time to read books in the field of Turkic studies. I am afraid that the book I am discussing in this review may go unnoticed by the majority of my colleagues in Finno-Ugric studies. I would like to draw the attention of readers to this monograph, because it can shed light on some of the problems of the theory of substratum in the Altai region of Russia, which is the areal of the Turkic languages. Nevertheless, the Uralic languages either may have roots in this region, or at least close contacts. One should not forget that many Samoyedic peoples of this region, that is the Kamassins, Motors, Taigas, Karagasses, Koibals and Kotovs remembered their original Samoyedic languages even in the 18th – 19th centuries. The book by Irina Ja. Sel'utina verifies the influence of the Ugro-Samoyedic substratum in a Turkic language of the Kumandins on the level of phonetics.

This monograph of I. J. Sel'utina is actually the second part of the project on the Kumandin language, a Turkic language of the Altai. I. J. Sel'utina is a pupil of a well-known phonetician, Turkologist and Mongolist Vladimir Mihailovich Nadel'aev, who was in his turn a pupil of a great phonetician Lev Vladimirovich Shcherba and an outstanding Turkologist and Mongolist Sergei Efimovich Malov. In 1966 V. M. Nadel'aev came to Siberia from Leningrad to develop phonetic investigations of the languages of the Asian part of the former USSR.

In 1968 V. M. Nadel'aev founded in Novosibirsk the first laboratory of the phonetic experimental investigations, which began to study the languages of Siberia and the Far East by the methods of experimental phonetics, involving the languages of such language families as Turkic, Mongol, Tungus-Manchurian, Palaeo-Asiatic, Finno-Ugric and Samoyedic. His main idea was to study with the help of the experimental phonetic methods as many languages as possible to state their articulatory bases since he believed that any articulatory base is the most conservative element of a language, and therefore, it is preserved if the lexical stock is changed and grammatical characteristics are lost.

V. M. Nadel'aev had many postgraduate students, who studied nearly all the languages of Siberia by the methods of palatography, intonography, pneumo-oscillography, X-ray filming, spectrography and others. Much work was done in the field of phonological statistics, involving 84 languages of the world. Therefore, the book under review is just one of the great amount of articles and books published on the phonetics of the languages of Siberia by V. M. Nadel'aev and his pupils. By Siberian languages I mean languages of different language families spoken in Siberia, e.g. Mansi (Vogul) and Hanty (Ostjak) which are Finno-Ugric languages alongside with Altai and Hakas which are Turkic languages, or Nanai and Evenk which are Tungus-Manchurian languages, or Nenets and Nganasan which are Samoyedic languages, or Ket and Jukagir which are Palaeo-Asiatic languages, etc.

In 1973 I. J. Sel'utina started the study of the phonetic system of one of the Turkic languages of Siberia – Kumandin dialect of the Altai language which she (after S. E. Malov, V. M. Nadel'aev) proposed to consider a separate language because of its great differences with Altai. Being the head of the most powerful phonetic laboratory in Siberia, Irina Sel'utina could unite Siberian scholars in the field of phonetics to proceed the phonetic experimental investigations started by V. M. Nadel'aev in the most difficult time for the Russian science when scholars are underpaid and there are no funds for phonetic investigations. Actually, the book under review is a product of the enthusiasm and endeavour of Irina Sel'utina.

In this new book she tried to apply Nadel'aev's idea of an articulatory base to the Kumandin language. It looks like it was true because her data obtained by the methods of phonetic experimental, only verify the facts that Kumandin people have a different system of anthropological, ethnographical and grammatical features which allow her, V.M. Nadel'aev and other Turkologists to differentiate the Kumandin people from Altai-Kizhi, Teleut and Telengit people. It should be mentioned that the first part of Sel'utina's investigation was published in 1983 (cf. my review on it: Yuri Tambovtsev. "Sel'utina I. J. Kumandinskij konsonantizm. Eksperimental'nofoneticheskoe issledovanie. /The Consonantal System of the Kumandin Language. Phonetic Experimental Investigation./ – Novosibirsk: Nauka, 1983." – In: Ural-Altai Yearbook, No. 57, Bloomington (USA), 1985, pp. 175 – 176). In the present book Sel'utina sums up all her previous data and claims that the results of her experimental phonetic studies indirectly give a clue that the northern Altaic ethnic groups were formed as a result of the assimilation of the previous Ugro-Samoyedic population by Turkic tribes. Now, the Kumandin people live in the South of Siberia in the northern region of the Altai Mountains. They are a part of the Altai people.

In the first chapter of her book called the "Inventory of the vowels", Irina Sel'utina states that she found in Kumandin 14 vowels, that is the classical inventory number for a Turkic language vocal system, including 8 short and 6 long vowels (pp. 3 – 8).

One of the most interesting results of her present phonological investigation is the phonemic frequency data of Kumandin which was never computed before. She computed 8 samples of the Kumandin prose, composed of 6,611 words, obtaining the frequency data of the vowels and consonants in all possible positions of the word. She counted the frequency of: 1) Mono- and polysyllabic words; 2) the frequency load of syllable types; and 3) the mean length of the word. Sel'utina's results show that the Kumandin speech chain consists of 51.4 % of the words of two syllables, 34.4 % of the words of three syllables, the rest are the words of one syllable and more than 3 syllables.

The ratio of the frequency of consonants to vowels is called the consonantal coefficient. The value of the consonantal coefficient is 1.46, which is very close to those of Komi-Zyrian (1.42), Hanty (1.48) or Mansi (1.53). I have computed some Turkic languages on big samples of prose and received the following consonantal coefficients which are much less, for example Hakas (1.38), Baraba Tatars (1.34), Altai (1.33), Kazah (1.33), Turkish (1.32), Yakut (1.32), and Azeri (1.32) (cf. Yuri Tambovtsev. The consonantal coefficient in selected languages. – In: The Canadian Journal of Linguistics, 30 (2), 1985, pp. 179 – 188).

The great difference between the value of consonantal coefficient in Kumandin and the other Turkic languages may be accounted either by the great difference in the speech chains, or by a small sample of I. Sel'utina. Unfortunately she does not provide the reader with the exact size of the Kumandin phonemic sample, on which the consonantal coefficient was computed. Actually, having computed the Turkic and Finno-Ugric lan-

guages mentioned above, I can conclude that the sample size of 6,000 phonemes allows the confidence interval to fluctuate in the limits of 0.20 – 0.26, taking half of the greatest interval (0.13) one can estimate the greatest possible statistical mistake, which is here equal to $1.46+0.13=1.59$ or $1.46-0.13=1.33$. As we see, the lower limit suits us perfectly. So, even if we must take the second assumption, that is the sample volume is too small, and thus, the consonantal coefficient fluctuates too much, then we can state that Sel'utina's consonantal value is within the limits usual for a Turkic language. My phonostatistical investigations show and, therefore, I advise my colleagues to take sample sizes of texts not less than 30,000 phonemes, as at this sample the confidence interval is less than 0.05. If one assumes that Sel'utina's sample was between 30,000 and 40,000 phonemes (cf. 6,611 words), then the confidence interval for her sample should be 0.05 or less. This is why the limits of fluctuation of her consonantal coefficient must be between 1.51 and 1.41. These values are much closer to the data for the three Finno-Ugric languages than to those of the Turkic languages. So, one can conclude (if and only if the sample was not less than 30,000 and the calculations were correct), that the Kumandin language was influenced by Finno-Ugric, Samoyedic or some other unknown languages so much, that its speech chain functions more like Finno-Ugric than Turkic speech chain. However, one should bear in mind that this conclusion is true only with respect to functioning of the ratio of consonants and vowels in the phonemic chain. Generally speaking, a sample greater than 10,000 phonemes may reduce the possible statistical mistake to less than 0.10. However, strictly speaking, my phonostatistical studies showed that one should take the sample greater than 150,000 phonemes in order to be able to have this mistake less than 0.02. This is why it was especially pleasant to observe that the young generation of Turkologists are well aware of the phenomenon of the big sample, for example Mark Kirchner who took a Kazah text of 109,610 phonemes and correctly criticized W. Veenker and A. Tretiakoff for unreliable results by taking 2,400 and 4,000 phonemes respectively (p. 71 Mark Kirchner. *Phonologie des Kasachischen*. Teil I. Wiesbaden: Otto Harrassowitz, 1992, 190 pp.). I have compared the phonostatistical data of M. Kirchner with my own data by chi-squared criterion and received a positive result that the data are similar.

My phonostatistical investigations show the distances between different languages on the basis of functioning of various phonemic groups (for example the frequency of labial, front, palatal, velar, sonorant, occlusive, fricative, voiced, etc.) in the speech chain. After comparing the sound pictures of the Turkic and Finno-Ugric languages with the Kumandin language, I can state that Sel'utina's results seem to verify mine. Actually, the Kumandin speech chain sound picture is more similar to that of Veps (5.46), Vach-Hanty (7.75) or Komi-Zyrian (8.29) of Finno-Ugric family, rather than to those of the Turkic family because the closest Turkic language to Kumandin is Jakut, with the distance of 9.58. The other Turkic languages sound less similar to Kumandin: for example Hakas (17.06), Azeri (16.08), Ujgur (16.10), Altai (13.47) etc. As a matter of fact, Altai shows greater closeness to Kirgiz (1.80), Kazah (3.22), Uzbek (3.48), or Tatar-Baraba (3.72). Actually, the greatest phonostatistical distance between Altai and any other Turkic language is 7.98 (Karakalpak), much less than the closest analogical distance between Kumandin and the closest Turkic language Jakut (9.58). The distribution of various phonemic groups in the Kumandin speech sound chain was influenced by the earlier contacts with the prehistorical Finno-Ugric or some other languages of the unknown background. To some extent, on the other hand, these distances may speak for a strong Finno-Ugric substratum in Kumandin.

In the second chapter of her book, I. Sel'utina deals with the phonic and phonological lengths of Kumandin vowels in bisyllabic and polysyllabic words (pp. 8 – 49). She found that Kumandin has a certain tendency to differ from Hakas, though lengthening of the open short vowels before the closed short vowels is typical of all Turkic languages of Kypchak origin (p. 49).

The third chapter (pp. 50 – 71) describes the articulatory analysis of the Kumandin vowels on the basis of static X-ray studies. In fact, I. Sel'utina used the vector principle of description of the articulation base invented by Vladimir M. Nadel'aeV and proved on various (his and his pupils') X-ray data of the vowels of Siberian, Mongolian and other Asian languages. She found that the articulation processes are rather inconsistent which she explains as the result of different ethnic components of the Kumandin people (p. 71).

The fourth chapter is devoted to the study of the correlation of the qualitative and quantitative parameters of Kumandin vowels (pp. 72 – 84). Sel'utina provides an abundance of reliable material in the tables showing the lengths of the short and long Kumandin vowels (pp. 110 – 182). One can calculate many other additional results, on the basis of her actual data. The only thing one should do is to apply the methods of linguistic statistics. In fact Sel'utina provides a great amount of valuable data on the lengths of various vowels in Kumandin. So it is very interesting to find out the limits of different sorts of variation in the lengths of different Kumandin vowels, especially short and long. The easiest way to compare the peculiarities of these vowels is to use the coefficient of variance which can give a reliable measure of the variables of different values, thus to obtain commensurable results. Here, the numerical data of the values of the short and long vowels cannot be compared directly. However, it is possible to compare them indirectly, that is taking into account their means. If the value of this coefficient is greater in one case, than in the other, then the measure of variability is greater and vice versa. Or in other words, the less the value of the coefficient of variability, the greater the stability of the length of the vowel. The value of this coefficient in short /a/ is 14.72 %, – long: 11.30 %, /o/ – 18.04 %, /o:/ – 6.39 %, /e/ – 16.89 %, /e:/ – 5.49 %, /O/ – 15.37%, /O:/ – 7.91 %. Therefore, one can see that in every pair “short – long”, short vowels have greater values of the coefficient of variance. It means that long vowels do not fluctuate as much as short vowels. For certain reasons, the native speakers of Kumandin pronounce the vowel /e:/ with more or less the same length in all phonetical positions, while the length of vowel /o/ is the least stable, it fluctuates much. The lengths of the short vowels are distributed according to the Gaussian (Normal) law, while those of the long vowels are not. In fact, long /o:/, /e:/ or /O:/ are not distributed according to this law either, while their short counterparts are. It may mean here that for Kumandin speakers short vowels are quite casual, thus unmarked, while long vowels are special, thus marked. One can also measure the homogeneity in the production of the short and long vowels. It can be calculated by Pearson's test, which is often called the “chi-square test”. It turned out that /a/, /o/, /e/, /O/ are not homogeneous, while /o:/, /e:/ and /O:/ are quite homogeneous in their length distribution. The long /a:/ is on the border between homogeneity and chaos. In conclusion, I can state that the application of certain simple statistical methods can help to find the correct decision in the ocean of data, like in this book. One can also see that it is very easy to overlook these tendencies in the abundance of data on the length of Kumandin vowels. I have calculated the means of all the Kumandin vowel lengths from the tables which Sel'utina provided in the appendix to the book and yielded the same results. It means that her calculations are correct, though she could have gone further and used slightly more sophisticated statistical methods.

The fifth chapter deals with the dominant features of Kumandin vowel system (pp. 85 – 94). One of the most interesting features of this chapter are some unpublished ideas expressed by the late Vladimir M. Nadel'aeV, who supposed that central articulation is the most characteristic for the Old Turks (p. 92). Sel'utina found the central articulation of vowels in Kumandin (p. 92) which means that Kumandin people preserved the Old Turkish manner of articulation, though she also found out a great influence of the Old Ugro-Samoyedic articulation (p. 93). The fact that modern Mongols also use central articulation of vowels according to V. M. Nadel'aeV may mean that modern Mongols, i.e. Khalkha, have a great Old Turk substratum (p. 93). This bright idea of the late V. M. Nadel'aeV is virtually unknown among the community of Mongolists, Turkologists and other linguists, though, in my mind, it deserves the greatest attention, since he was and is one of the few linguists who considers that the articulation base (p. 86) is the primary feature of the ethos of the articulatory effort. Therefore, he claimed that the dominant phonetic features appear in the articulation base as a result of the common structure of the movements of the active organs of speech of this ethnos, due to some psychological or physiological reasons. This is why, if some ethnos lost its language, it did not lose its articulation base. On the contrary, the articulation base serves further, now with a new acquired language. The old articulation base usually changes the phonetic system of this new language, adjusting it to the old sounds of the former language. So, it is possible to reconstruct the ethnic history of a language coming from the peculiarities of its articulation base. V. M. Nadel'aeV considered the length, the height, the row, the tension, the labialization, the nasalization, and some other phonetic features to be the potential vocalic dominants which may help to trace the language contacts. It was very thoughtful of Sel'utina to discuss in great details Nadel'aeV's theory which he usually spoke about during his famous lectures, but which is not known to the international community of linguists.

I hope that in spite of the stressful conditions in Russia now, more and more books of this sort shall be published. My less than complete treatment in no way impairs the overall excellence of what Irina Sel'utina has accomplished. I can highly recommend her book which is marked by a distinguished scientific level.

Yuri Tambovtsev

EDZARD, Lutz: *Polygenesis, Convergence, and Entropy: An Alternative Model of Linguistic Evolution Applied to Semitic Linguistics*. Wiesbaden: Harrassowitz Verlag 1998. 207 pp. ISBN: 3-447- 04102-1. Price: DM 98,00.

The Neogrammarian vantage concept of *proto-language* was admirably materialized in the reconstruction of what was perceived as the Proto-Indo-European (PIE) phonological system. When further refined by de Saussure's *laryngeal theory* (1878) and, one century later, in *glottalic theory*, formulated by Gamkrelidze & Ivanov (1973) and Hopper (1973), it opened an entirely new horizon to a much broader comparative research involving PIE and what was presented as Proto-Semitic. The comparative space has been subsequently further extended as to include hypothetic Proto-Afro-Asiatic (PAA), as lately attempted by Bomhard (1984) in his widely conceived PIE-PAA lexical comparison.