THE STUDY OF MANSI (VOGUL) VOWELS BY MEANS OF X-RAY PHOTOGRAPHY

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This paper deals with the results of the X-ray photography investigation of the long vowels in the Northern dialect of the Mansi (Vogul) language.

Subjects

Both dynamic and static X-ray photography were used to study the articulation of 5 native speakers - representatives of 4 different subdialects of the Northern dialect of Mansi. The long vowels were taken in one and two syllable Mansi words.

All the measurements of the articulators' shapes and positions are given not in absolute but in relative numbers. It is proposed here to give the measurements in relation to "L_{const}", which is the distance from the end of the hard palate to the edge of the front upper teeth, and to divide the tongue into 5 parts.

The analysis of the X-ray photographs of the Mansi long vowels (Srednesosvinski govor) allows to state that they have the following articulatory characteristics (zones, height, labialization):

Russian letters	vowel sound	IPA	articulatory characteristics
a	$\ll \dot{\alpha}: {}^{\underline{V}}_{\dashv}\gg$	[ä]	back zone, very much advanced, low (the V-th grade), non-labialized.
o	$\ll \dot{\Omega}: {}^{\bar{V}}_{\dashv}\gg$	[ɒ+]	back zone, very much advanced, low (the V-th grade), labialized.
y	$\ll \dot{\mathcal{U}}: {}^{\overline{II}}_{\dashv}\gg$	[üᴛ]	back zone, very much advanced, high (the II-d grade), labialized.
e,э	$\ll \mathcal{E}: {}^{\bar{IV}}_{\sqsubseteq}\gg$	[ɛ̈]	front zone, very much retracted, mid (the IV-th grade - a little closed), non-labialized.
и	$\ll I: {}^{\underline{II}}_{\vdash}\gg$	[iᴛ]	front zone, a little retracted, high (the II-d grade), non-labialized.

Conclusion

The results of the X-ray photography of Mansi (Vogul) long vowels allow us to obtain the most objective data of their articulation zones and tongue height. It gives a good basis for comparing the articulatory characteristics of the Mansi long vowels to the analogical vowels in other languages, and especially languages of the Finno-Ugric family.

THE PERCEPTION OF CHINESE SPEECH SOUNDS IN MASKING NOISE
AND FREQUENCY DISTORTION

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Intelligibility tests of Chinese speech sounds were run
under five masking conditions, namely white noise, pink noise,
speech noise, meaningful speech interference, and reverberation
masking in an auditorium, as well as in a quiet studio. To simu-
late the actual communication circumstances, the noise was intro-
duced at input and output ends, respectively. The signal to noise
ratios were 5, 0, -5, -10 dB with a fixed speech level about 80
dB at 1m from the loudspeaker. In addition, the speech and noise
were processed with high pass, low pass, or band pass filtering
except in the reverberation condition. A set of simplified but
rather sensitive word lists were used, which were based on varying
the initial consonants (initial consonants are more sensitive to
masking than are final consonants). The effects of masking and
frequency distortion on the perception of individual Chinese
speech sounds will be presented in this report.