

ARTICULATORY AND PERCEPTIVE ASPECTS OF TYPOLOGY
OF SOUND SYSTEMS IN CONDITIONS OF MULTILINGUIISM

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The problem of interaction between perceptive and articulatory aspects in foreign language teaching is investigated. The possibility of correct comparison of sounds in mother tongue and foreign language in these aspects is demonstrated and the method to define distinct criteria of typological identity is suggested. The experimental results show the effectivity of the method in teaching production and perception of foreign language under the conditions of bilingualism.

Lately linguistics treats the problem of language systems interaction under conditions of bilingualism and multilingualism quite often. One of the most important aspects in this respect is the way the languages are to be studied. There is a natural bilingualism that takes place under conditions of direct communication between the speakers whose mother tongue is not the same, and artificial bilingualism which occurs under particular circumstances when a foreign language is taught in educational institutions. These two forms differ from each other by their motivation. In the first case the principal aim is to exchange information while the forms of expressing ideas are more or less neglected. In the second occasion the pupils' attention is directed to the accentless mastering of the language. In this situation the language systems interaction is "reduced" to influence of the pupil's mother tongue (MT)

on the foreign language (FL) studied. In case of natural bilingualism a mutual effect of two contacting languages can be noticed. Both forms are to be closely examined by linguists and specialists of adjacent sciences. Natural multilingualism is characteristic for the situation which has taken place in the Soviet Union. When Russian and national languages interact, their influence on each other is doubtless: the Russian language spoken by the representatives of other nationalities acquires quite definite phonetic properties which are connected with the phonological and phonetic characteristics of either of national sound systems. Such interaction results in specific "national" variants of Russian language. This variant is typical not only for the representatives of national language but for Russians living in the Republics. It has been noticed that the peculiarities of sound realization are caused by the Russian language used in the Republic but not the national language of the Republic itself. It is known that the artificial form of contacts can be regarded as a satisfactory model of natural processes and the other way about - many advantages of natural contacts can be used to facilitate teaching process. The analysis of interference problems in linguistic aspect requires to list the potentially expected forms that can appear under the circumstances. This can be done by means of finding

out identity or difference in any aspect of the language, i.e. typological comparison of languages.

Under modern conditions, when international oral communication is being intensified, one of the main theoretical and practical tasks of linguistics is to reduce foreign accent which is regarded as a phonetic phenomenon. Foreign accent causes much trouble in communicating with native speakers; the heaviest aggravation is on phonetic level.

In linguistics one of the leading points of view on the problem of interrelation between perceptive and articulatory aspects lies in the question of double interference as a source of accent under the conditions of mixed bilingualism because phonology of hearing conditions the phonology of speaking. In a number of works perceptive aspect is looked upon as a basic one. Thus, perceptive basis (PB) occupies a particular place alongside with the articulatory one (AB); PB is a unity of memory stored patterned phonetic units and the rules of comparison with them.

Distinction in various languages can be explained by difference in patterns of phonemes, patterns of supersegmental units and the rules of comparison with the patterns. In accordance with modern concept of mechanism of speech perception phoneme is of primary importance in making up one's mind. Trubetskoj N.S. (4.59) underlined that the perception of foreign language sounds is phonologically conditioned. It does not mean that a foreign language speaker interprets any unfamiliar sound as a known one, i.e. turns any sequence into a sequence of native language phonemes. On the basis of the experimental data available we can state that a man is capable of differentiating a larger number of sounds than the amount of phonemes in his MT. Nevertheless, this capability of a person is also conditioned by phonological relations. when per-

ceiving the sounds which are absent in the MT the examinee does not always place them as phonemes belonging to his MT; rather a subtle differentiation is possible. It grounds on the properties of perceptual processing of the sound signals, knowledge of one or several of FL and individual capabilities of the examinees as well.

Everything mentioned above testifies to the necessity to specify the traditional view on the perceptive abilities of a man. In this connection one of the important tasks is to find out the phonetic characteristics of sound sequence which are used in the act of perception. At the same time it would be wrong to forget that perception and (re)production are the two sides of joint activity. Numerous attempts to reveal the dependance of gained results on the acoustic characteristics of perceived sounds testifies against presence of direct connection between perceptive & acoustic correlates. The experimental data illustrate the presence of tight correlation between perception and articulation [1]. There is much interest in the results of the experiment on speech sounds perception which allowed to come to the conclusion that perceptive system is characterized by specific dependance on certain languages, on the one hand, and common universal traits, on the other hand. For example, it is believed that the universality of perceptive system manifests itself in the fact that the most "hurtful" in languages are the "prominent" vowels /i-a-u/ et al. However, as the experimental data evidences the relation of specific and universal is beyond the limits of voice tone acoustic activity (in particular with respect to the sounds mentioned). The role of mechanism of contacting languages interaction is much more important. If the main postulate of this research reads that deviations from the normative pronunciation of

the language studied in the speech of a bilingual (poli-lingual) results from the contact of phonetic systems in MT and FL. Such "hurtful" points can be ticked out on the basis of mechanisms of their interaction in contacting languages. Thus, there are attempts to group phonemes in MT and FL on the principles of their acoustic or articulatory similarity; one can find the following definitions: "phonemes of close group", "phonemes of relatively close group", "phonemes of distant group", "phonemes coinciding in MT and FL" and the like.

In the classifications of this kind one can see the criteria that underlie the act of typology-yet it is difficult to understand what is meant as phonemes, coinciding in MT and FL. It is quite doubtful that identical phonemes can exist in heterosystemic languages, and the conclusion about coincidence of the whole number of English sounds /p/, /b/, /t/, /s/ with the corresponding Russian phonemes is not convincing, because two things are ignored: a clearly distinguishable opposition in the system of Russian consonants-palatal/hard sounds which do not occur in English (German) language and phoneme distribution. At the same time the correlation of paired palatal-hard phonemes plays the leading role in Russian consonantism because, firstly, the largest amount of consonant phonemes are involved in this opposition and, secondly, palatal-hard consonants influence greatly the adjacent vowels and cause the whole range of peculiarities in allophones of vowel phonemes in speech.

Now it is just to the point to say that when carrying out a typological research not only the existence of this or that fact is to be taken to consideration but the place it occupies in the system of the language under discussion.

Taking the above-mentioned fact into account we can't consider such phonemes as German s, or f, and Russian

ian /s/, /s'/ and /f/, /f'/ as identical ones, though there is some definite articulatory similarity between them. The difficulty of mastering the identical German consonants is caused by the following peculiarities of Russian articulatory basis: 1) in position f+nonfront vowel or voiceless fricative consonant there is no additional raise of the back part of the tongue; 2) in position f+front vowel there is no additional raise of the middle of the tongue; 3) in position f+voiced fricative there is no regressive assimilation. The latter case causes much difficulty for reproduction because of presence of two different processes in the systems of Russian, Ukrainian consonantism, on the one hand, and German consonantism, on the other hand: regressive assimilation in voicing and progressive assimilation in devoicing, compare A(vg)anistan-A(fg)anistan. It would be a mistake to come to the conclusion that there are no difficulties in reception of the sounds alike. The results of perceptive tests show that the opposition voicing-devoicing in the German language is not so strong as in Russian or Ukrainian [5.132], that is why the differentiation of German voiceless /Fortes/& voiced /Lenes/ consonants gives rise to many mistakes even in intervocal position (e.g. reise-reiße).

It is a good thing to mention here A.Reformatsky's words: "The only place where phonology does not feel at home is the methods of teaching pronunciation of a foreign language. Quite often separate sounds as well as imaginary identical sounds are of special attention here" [2.566].

One of the key problems is to define distinct criteria of typological identity in groups of sounds in the languages being compared. The degree of similarity (difference) of the elements in articulation of the compared sounds can be regarded as such a criterion. It allows to group the sounds

accurately enough according to the degree of their typological likeness.

What is the degree the articulation elements should differ to place the sound of a FL in the group which has no analogue in MT? A clear-cut trait, which shows the absence of analogue, is incompatibility of articulatory actions in the compared languages. Thus, in the field of vocalism in Russian, Ukrainian and English articulatory bases the following articulatory actions are incompatible: labialization+forelingual articulation. This situation excludes the possibility of labialized forelingual vowel appearance. In the phonological system of the languages mentioned above in contrast to the systems of German and French vocalism where these types of vowels are available. In Russian & Ukrainian articulatory bases consonantism is characterized by incompatibility of the velum moving down & backlingual articulation which takes place when pronouncing English and German backlingual consonant [ŋ]. The opinion that the sounds which have no analogues in MT are mastered worse - is widely spread nowadays. Nevertheless, Scherba L.V. warned that particular difficulties are connected with the sounds which have analogues in MT. The sounds that have no analogues in MT attract our attention & thus are not identified with either sound in the MT and do not cause ambiguity [3].

The Number of Perceptive and Articulatory Mistakes at Different Stages of Students Linguistic Competence, %

Group:	Before phonetic course		After phonetic course		After a five-year course	
	percep-tion	articulation	percep-tion	articulation	percep-tion	articulation
1	1	21	38	6	5	8
	4	28	42	5	6	13
2	4	8	48	3	4	1
	9	7	55	3	2	0

The results of tests carried out give us grounds to admit this statement to be true since the sounds which have no analogues in MT are differentiated better than the ones having certain correspondence in MT. It can be explained by the listener's attempt "to fit" the perceived signal into the zone of standard sound-type in MT identical as to its acoustic characteristics. When practicing pronunciation on the similarity of MT and FL is imaginary and "provocative" [2.510]. This regularity is illustrated by the data given in the table.

It is demonstrated that German sounds /i/, /g/ which have relative analogues in Russian and Ukrainian languages are worse mastered in perceptive and articulatory aspects than sounds /y/ and /ŋ/ which have no analogues. There is a clearly seen tendency within the

sounds of the first group to increase the amount of errors in sound perception and articulation, particularly, when purposeful training is over. The skills of oral perception and production of sounds in the second group are much more stable.

The use of the criterion of compatibility/incompatibility in articulatory actions at the process of sound production allows to reveal a clear-cut correlation between articulatory and perceptive aspects of speech under multilingual conditions.

[1] LIEBERMAN, A.M. (1967), "Perception of Speech Code", Psychological Review, 75-86.
[2] REFORMATSKY, A.A. (1970), "Phonology at service of teaching foreign language pronunciation", From the history of national phonology, Moscow, 506-511.

[3] SCHERBA, L.V. (1957), "Phonetics of the French language", Moscow.

[4] TRUBETSKOY, N.S. (1960), "The basis of phonology", Moscow: Izd. Inostr. Lit.

[5] WIEDE, E. (1981), "Phonologie und Artikulation swische in Russischen und Deutsch", Leipzig: VEB Enzyklopadie.