

AFFRICATIZATION OF /t'/, /d'/ IN THE MODERN LITERARY PRONUNCIATION
OF MOSCOVITES

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ABSTRACT

The research aims at describing the latest development of a new process in the articulation of moscovites - affricatization of /t'/, /d'/. The instrumental analysis shows that /t'/ and /d'/ develop fricative stages, as a result the occlusive /t'/, /d'/ may be replaced by the affricates /ts'/ and /dz'/.

The latest decades have shown a considerable development of a peculiar phonetic effect - affricatization of /t'/, /d'/. In terms of articulatory phonetics the effect can be described as follows. The occlusive stages of palatalised /t'/, /d'/ are followed by rather long perceivable whistling fricative stages.

The main aim of this study is to look into the problem of the quality of the palatalised /t'/ and /d'/', including such aspects as sex and age of informants. 87 native speakers took part in the phonetic experiment, conducted by the author of this paper. The informants were chosen at random according to the following criteria: 1. he or she must be moscovite by birth; 2. he or she must have no flans in articulation. The informants read a specially-prepared list of words /1/. Their reading was recorded on tape. The tape was subjected to an auditory analysis with the aim to establish the extent to which the phenomenon of affricatiza-

tion of /t'/. /d'/ is used by speakers of different sex and age. Nine informants formed the so called "main group", These were permanent residents of Moscow, brought up in families, two generations of which had also lived in Moscow. The pronunciation of the main group was subjected to a more profound analysis with the use of an oscillographic, palatographic, linguographic and spectrographic methods of analysis, as well as auditory analysis (with the help of a segmentator of speech sounds with a rotating magnet head) and auditory analysis, performed by a group of linguists and non-linguists.

All the informants were divided into four groups according to their age: 1. schoolchildren (from 11 to 16 years); 2. students and post-graduates (from 20 to 30 years); 3. middle-aged people (40-50 years old); 4. the older generation (60-80 years old). The third and fourth groups included people with a higher education. Both the auditory and the instrumental analyses have shown, that out of the 75 informants of the first three groups 48 people (64% of all) had affricatization. But this phenomenon was not typical of the older generation. The speech of the informants of this group represented a very weak fricative element after the occlusive stage of /t'/, /d'/. This element could be detected only by a trained phonetic ear. The fact that different age-groups of the speakers have different

degrees of affricatization of /t'/, /d'/ accounts for the existing diversity of opinions on the problem.

The comparative analysis of the results of auditory and oscillographic experiments aimed at establishing degrees of affricatization points to three degrees of this phenomenon. The average affricatization (2) of /t'/ at 45% and the average affricatization of /d'/ at 35% accounts for a weak degree of affricatization. The average affricatization of /t'/ at not more than 55% and the average affricatization of /d'/ at 45% accounts for a moderate degree of affricatization. The average affricatization at 55% and more and /d'/ - at 50% and more accounts for a very high degree of the phenomenon.

The auditory analysis performed by Russian phoneticians showed that the average affricatization of /t'/, /d'/', accordingly 35% and 30%, must not be regarded as affricatization phenomenon. It has already been proved in earlier experiments conducted by L.V. Bondarko, L.R. Zinder, L.A. Verbitskaya /3/ that a weak quality of affricatization is an inherent part of palatalised /t'/ and /d'/. As a matter of fact this phenomenon has always existed in the literary pronunciation of moscovites, and now we can speak only about its modification. The quality of the palatalised /t'/, /d'/ is not stable. Because of this the degree of affricatization of /t'/ or /d'/ in certain position, pronounced by different speakers, always will be different. On the other hand, the idiolect shows more stability. That is why this phenomenon can serve as a reliable means of identification of a speaker. The present phenomenon has some characteristic features. It must be pointed out that the degree of the affricatization of /t'/ in all positions is greater than that of /d'/. The same fact is true for the Belorussian language and Russian dialects where affricatization is a dialectal feature. This ten-

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ency is universal and the reasons for it lie in the acoustic and articulatory peculiarities of /t'/. Probably, a greater degree of articulatory tenseness and of the volume of air in /t'/', in comparison with /d'/', shows in the lengthening and intensification of the fricative stage of /t'/. Analysing the frequency of this phenomenon, it must be pointed out that the frequency of occurrence of obvious affricatization in the speech of men and women is different. In the speech of women of the second and third age-groups there is a tendency to use the moderate and the strong degrees of affricatization of /t'/, /d'/', while in the pronunciation of men the moderate and the weak degrees of affricatization are mostly used. Men's speech is characterised by a much shorter absolute and relative length of the fricative stage of the sound in comparison with the women's one. Thus, the average affricatization of /d'/ in men's speech may be at 21-34%, for women's speech it's not peculiar. Another discrepancy characterising the speech of men and women is as follows. In women's speech the degree of affricatization of /t'/ and /d'/ is balanced. In men's speech the balance is tipped in favour of /d'/', i.e. it is very low for /d'/'.

Another feature is the intensity of the fricative stage, which in men's pronunciation is fairly low. Due to these features it is possible to identify the sex of the speaker.

All the above-mentioned experimental results point out the necessity of distinguishing male and female manners of modern Russian literary pronunciation /4/.

A very high degree of affricatization of /t'/, /d'/ in women's pronunciation must be taken into consideration in speech synthesis, automatic recognition of speech and in teaching Russian to foreigners. To prove this it is worth describing some

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facts from our teaching experience. The students from Palestine and Ecuador, who were studying Russian here in Moscow, believed that they should write /tʃ/ in the suffixes of the infinitive. They made the following conclusions due to the impressions of their perception. These examples show that in the speech of modern women-moscovites the border between palatalised occlusive /tʃ/ and affricate /tʃ/ is not steady, this may lead to their perceptual mixing up.

To clear up the mode of production of the sounds /tʃ/, /dʃ/, pronounced with a high degree of affricatisation, the author has carried out an auditory analysis, in the course of which Ukrainians and Belorussians, whose native languages have affricates /tʃʲ/, /dʃʲ/, defined the quality of the Russian /tʃ/, /dʃ/. Then the results of the auditory and acoustic /5/ analyses were compared.

The results of the analyses have shown that in the case of high degree of affricatisation the majority of the /tʃ/, /dʃ/ sounds were identified as /tʃʲ/ and /dʃʲ/; in the case of moderate degree of affricatisation approximately 1/3 of the sounds was evaluated as affricates, the rest of the sounds were identified as palatalised occlusive consonants with an affricatisation of a different degree. In the case of the weak degree of affricatisation, only few sounds were identified as affricates. This phenomenon confirms the absence of a steady relationship in the system of the language and gives ground for its further development.

A comparative analysis of spectrograms and palatograms of the Russian, Ukrainian and Belorussian /tʃʲ/, /dʃʲ/ has shown that the affricates which have developed in the Russian language have got articulatory characteristics of their own and are not identical with the analo-

gous sounds of the Ukrainian and Belorussian languages. In comparison with Belorussian and Ukrainian sounds the Russian sounds are more front. The Belorussian /tʃʲ/ and /dʃʲ/ occupy an intermediate position between the Russian and the Ukrainian sounds.

As regards the opposition of hardness/palatalisation it must be noted, that some new Russian affricates were identified by the Ukrainians and Belorussians as hard or not palatalised enough. An analysis of the phonetic context of these sounds showed that their new quality was conditioned by the context.

The phonetic context plays an important role in determining the degree of the affricatisation of /tʃ/, /dʃ/. It was revealed that the degree of the affricatisation is increased in the intervocal stressed position (the stressed vowel either precedes or follows /tʃ/, /dʃ/). This increase becomes possible owing to the phenomenon of spirantisation always taking place in this position. The strong degree of affricatisation is also typical for the word-final /tʃ/ (here the affricatisation of /tʃ/ is supported by the aspiration and, besides, the off-glide of /tʃ/ is not restricted by the following onset of the next sound). The degree of the affricatisation is also increased in the following context: before front-high vowels or /j/, in stressed position in comparison with unstressed one, in logically stressed positions, in front of /ʂ/ in a closed (not open) syllable (compare: ОТ-Д³ЭЛ'НИЙ and раз-Д'ЭЛ/). In the speech of the oldest group of moscovites the degree of the affricatisation may be sometimes increased in the position before /j/ and also before /v/, /m/ (if the palatalisation of /t/, /d/ caused by assimilation). For example, Д³В'Э/, /Т³В'Эр/, /Д³М'И/ТРИЙ and so on. Thus, the degree of the affricatisation can be put down to the influence of the

phonetic context. But the question arises what has triggered this process in the phonological system of the Russian language while the system itself has not been and is not being influenced by any other phonological system of a different language? If we try to interpret this in terms of phonology only, then it must be said that the development of this phenomenon (i.e. the ongoing transformation of occlusives into affricates) is made possible by the state of phonological "permissibility". From the point of view of phonetics it must be mentioned that in comparison

with the articulation of /tʃ/, /dʃ/ by old moscovites, the younger generations articulate these sounds in a more front part of the mouth. The advanced position of the whole body of the tongue, accompanied by the dorsal articulatory position, which characterises all affricated /tʃ/, /dʃ/, makes the obstruction of these consonants weak enough. Thus it breaks and a long intensive fricative stage develops. That is why high, front vowels (/i/ in the first turn) enhance this process because they do not prevent the movement of the bulk of the tongue forward. These sounds are made so front, that they lose partly the acoustic effect of palatalisation, which they would have been in the intermediate position, and that is why they may be identified as almost hard sounds.

The development of the affricatisation of /tʃ/, /dʃ/ influences the whole articulatory base of the Russian language and causes changes in the homorganic with /tʃ/, /dʃ/ sounds. The speaker, whose idiolect is characterised by affricatisation of /tʃ/, /dʃ/, increases the intensity and length of /s/, /sʲ/, /z/, /zʲ/; lengthens the off-glide of /tʃ/ (as a result the listener may identify /tʃ/ as a biphenomic entity - /ts/). It becomes possible to replace the old affricate /tʃ/ by the

new /tʃʲ/ (such phenomenon was fixed in the words "ДЬЯКОНИЦА", "ВКРАТЦЕ", "МЕЦЦО").

An all-round study of the process of affricatisation in Moscow may help in the solution of some problems of historical phonetics and account for similar processes in Polish and Belorussian. It may, in a way, throw some light on the development of the language system.

/1/. Affricatisation of /tʃ/, /dʃ/ was analysed in the following positions; 1. word-final position (for example, МАТЬ); 2. stressed position (ТЭТЯ, СДЕЛАТЬ); 3. unstressed position (ТЯЖЕЛЫЙ, ДЕРЕВЯННЫЙ); 4. stressed intervocal position (УТРАТА, ТЭТЯ, ИДИ, ВАДЯ); 5. unstressed intervocal position (СЕТЕВОЙ, ЛЕДЯНОЙ).

/2/. The term "average affricatisation" means that the length of the fricative stage in the sounds /tʃ/ and /dʃ/ is expressed in per cent. The data were obtained from the oscillographic analysis as a ratio of the average relative duration of the fricative stage of /tʃ/ or /dʃ/ and the whole sound /tʃ/ or /dʃ/.

/3/. L.R.Zinder, L.V.Bondarko, L.A.Verbitskaya. Akusticheskaya kharakteristika razlichiya tvorydykh i myagkikh soglasnykh v russkom yazyke. - Uchyonyye zapiski IGY imeni A.A.Zhdanova. - L., 1964. - Vyp.69, N 325. Seriya philologicheskikh nauk. - P.28-36.

/4/. In linguistic literature concerning Russian dialects one can find indications of a similar kind. Thus, early in the XX century N.M.Karinskiy revealed the same phenomenon in the dialects of Bronnitskiy district. Nowadays a similar fact was described by P.A.Rastorguev in the dialects of the Smolenskaya district (N.M.Karinskiy. O govorakh vostochnoy poloviny Bronnitskogo uyezda.-Spb., 1903; P.A.Rastorguev. Govoru na territorii Smolenshchiny. - Moscow, 1960).

/5/. In this case duration and intensity of the fricative stages are meant.