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DYNAMICS OF CONSONANT PHONEMES VARIATION IN SPONTANEOUS BUSINESS DISCOURSE

У статті висвітлено динаміку варіювання приголосних фонем у спонтанному діловому діалогічному дискурсі. Дослідження здійснено на матеріалі сучасного британського телевізійного шоу «Печера драконів» і відображає результати аудитивного й акустичного аналізу. У науковій розвідці представлено артикуляторні модифікації приголосних фонем за групами із притаманними особливостями звукового варіювання; виявлено й охарактеризовано позиційні зміни приголосних; виділено групи приголосних, які виявляють відносну стійкість/нестійкість до процесів варіювання; наведено спектрограми типових прикладів модифікацій приголосних.

Ключові слова: динаміка, варіювання, приголосний, фонема, діловий діалогічний дискурс, аудитивний аналіз, акустичний аналіз, модифікація, позиційні зміни, спектрограма.

В статье освещено динамику варьирования согласных фонем в спонтанном деловом диалогическом дискурсе. Исследование осуществлено на материале современного британского телевизионного шоу «Пещера драконов» и отражает результаты аудитивного и акустического анализа. В научном исследовании представлены артикуляторные модификации согласных фонем по группам с присущими особенностями звукового варьирования; выявлены и охарактеризованы позиционные изменения согласных; выделены группы согласных, которые проявляют относительную устойчивость/неустойчивость к процессам варьирования; приведены спектрограммы типичных примеров модификаций согласных.

Ключевые слова: динамика, варьирования, согласный, фонема, деловой диалогический дискурс, аудитивные анализ, акустический анализ, модификация, позиционные изменения, спектрограмма.

The article highlights the dynamics of the consonant phonemes variation in spontaneous business dialogical discourse. The research was

conducted on the material of modern British television show “Dragon’s Den” and reflects the results of auditory and acoustic analysis. The scientific study presents the articulatory modifications of consonant phoneme groups with peculiar characteristics of sound variation; identifies and characterizes positional changes of consonants; allocates the group of consonants that reveal relative stability/instability to the variation process; represents the spectrograms of typical examples of consonant modifications.

Key words: *dynamics, variation, consonant, phoneme, business dialogical discourse, auditory analysis, acoustic analysis, modification, positional changes, spectrogram.*

The concept of variability is the leading one in contemporary linguistics. The inherent variability of a language is a fundamental property of it, a way of existence and operation of any unit of speech [8, p. 287], a major source of continuous transformation process in any language. The capacity for variation is a universal property of a language, and it is manifested both in its structural organization and in its functioning. The discovery of this property was not revolutionary, but rather a natural process, and appeals to its comprehensive study which should be considered quite a natural phenomenon that needs no special justification.

Both a degree of constancy in the use of various linguistic means, and a set of variants that most fully manifest the functioning of language are typical for each contemporary literary language [9, p. 5]. Language as a functional system in all its levels is characterised by great degree of linguistic unit variation regardless of their complexity. The capacity to variation makes a language functionally flexible [5, p. 26].

Thus, the dialectical interaction of variability and constancy in time continuum reflects, on the one hand, the varying nature of language as a system, and on the other hand the preservation and continuity of language to perform its basic function that of communication. If constancy of language units provides and keeps them in a constant state of communicative appropriateness, so the variability is the most important source of language development [2, p. 11].

The famous Ukrainian linguist O. Selivanova claims that linguistic variation is a semiotic symbol of any language that

ensures the presence of a certain number of characters to describe the same content [6, p. 346]. N. Arutiunova points out the dialectics of varying linguistic units [1, p. 95]: two forces oppose in the language, thus one of them is directed to the separation of the sign parties (variation occurs under this force), and another force is aimed at combining sign parties to prevent their rupture and thereby reducing the redundancy of language.

Dynamics of language units is undeniable interest to researchers of different language levels, and, from the perspective of external and internal linguistics, it stands out as an independent multidimensional object for comprehensive study, synchronic and diachronic, that gives this area its integrative nature [3, p. 127]. Studying this language property the researchers point out that the variation is generated in the process of reality reflection and expression of generalized mental images in sound form as well as in the functioning of language as an important means of communication.

As we can see, increasing attention has been paid to the investigation of variability as an objective property of linguistic resources. In this regard the study of any partial aspect of variability in individual linguistic levels (grammatical, lexical, and phonetic) is especially significant. Such research is important not only for the level of language, but also for the development of a general theory of linguistic unit variability.

Goal of the article is to identify the modified implementations of consonant phonemes in the business dialogical discourse.

Tasks of the article are the following: to analyse the approaches of modern linguists to the interpretation of the variability concept; to identify the implementation of consonant phoneme variants in the business dialogical discourse; to study and compare the results of auditory and acoustic analysis of consonants; to outline prospects for further scientific research.

The research and quantitative analysis of the variant realization of the phonemic structure of the word shows that vocalism is the main means of variants formation [7, p. 370–372]. 76.11% of words reveal variation of vowel phonemes, while 23.89 % of phonemic structure variation is provided by consonant phonemes.

This significant difference between the participation of vowel and consonant phonemes in varying of phonemic structure of the word can be explained by the fact that consonants express more lexical meanings than vowels, and consequently their variation range is smaller [4, p. 206–207].

In our experiment consonant phonemes were selected for analysis. The phonemes were isolated from the words in «Dragons' Den». The spectrum and the spectrogram of the sample were then displayed in Praat. We judged each consonant perceptually and visually. It was selected for analysis by dragging the cursor from the beginning to the end of the sound. The first and the second formants were then automatically calculated in Praat for each of the phoneme.

The study of peculiarities of consonant realization in business discourse revealed some tendency of phoneme variation. It established that different types of consonants are characterized by various modifications. In this regard, it is expedient to study and describe consonants in different groups depending on their characteristic features.

The auditory analysis results show that the largest number of consonant modifications is due to the labialization of the interdental fricative sounds /t/ and /d/. As a result of this phonetic process the interdental fricative voiceless sound /t/ is realized as the labiodental fricative voiceless /f/ (Fig. 1.). And the interdental fricative voiced /d/ corresponds to the articulation features of the labiodental fricative voiced /v/. Hence, in the pronunciation of interdental sounds we can observe the advancement of organs of speech and thus the change of place of articulation while voice or voiceless feature remains unchanged. In modern phonology this phonetic process is called th-fronting.

The process of substitution of voiceless consonants by voiced ones appears in the result of the interaction of vowels or voiced sonorous sounds. Obviously, this can be explained by the fact that under the rapid speech influence, that is a characteristic feature of oral discourse, the phase of consonant constriction is reduced to a minimum and consequently the pronunciation of voiceless consonants in position between vowel or sonorous sounds have

prerequisites for the vibration of the vocal cords as a result of articulatory and physiological inertness of speech, thus word *electrician* (pronunciation norm /^ʔelqk^ʔtrIS(q)n/) in rapid speech is realized as /^ʔelqk^ʔtrIZn/ (Fig. 2).

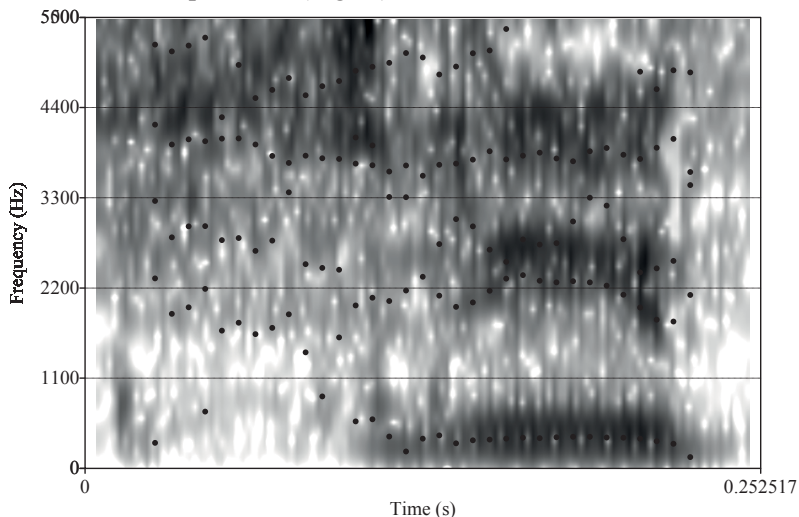


Figure 1. – Spectrogram of the word *three*

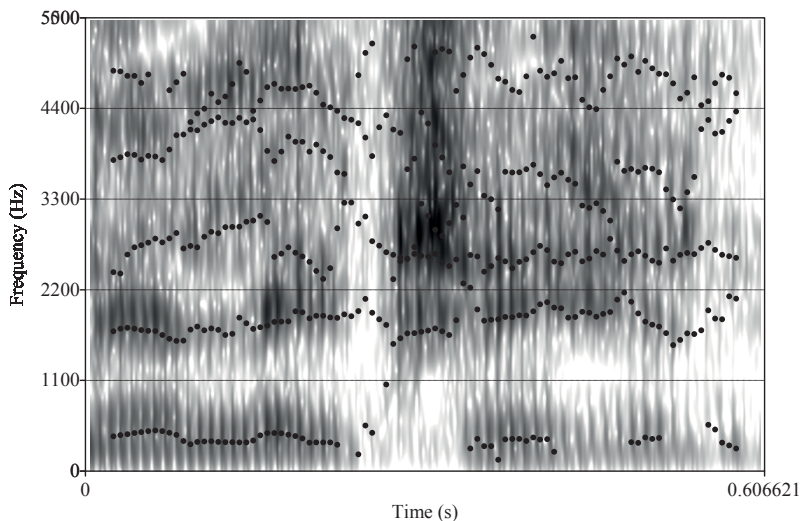


Figure 2. – Spectrogram of the word *electrician*

The positional modifications lead to the devoicing of voiced consonants. It is due to the presence of a voiceless consonant before voiced one, and causes the weakening of the vocal cords vibration, so *disgusting* (pronunciation norm is /dIs'g0stIN/) in rapid speech is articulated as /dIs'k0stIN/.

The analysis of plosive consonants indicates that the modification of this group of consonants concerns primarily the manner of articulation. For example the weakening of voiceless plosive /t/ in the word *negotiating* results in the transition of plosive consonant in the fricative one, namely the constriction of voiceless consonants is greatly reduced or disappears, and as a result a plosive consonant is articulated as a fricative one: /nI'g34SIeISIN/.

Africatzation of plosive and fricative consonants often occurs between two consonants within the accent unit, which can lead to a redistribution of syllable boundaries. Figure 3 represents a spectrogram of the word *interest*, the variant implementation of which reflects the process of the africatzation of voiceless plosive sound /t/.

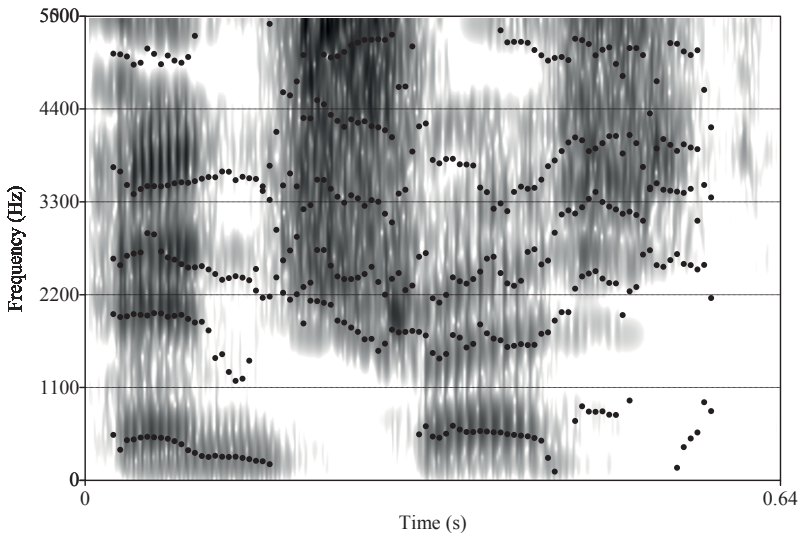


Figure 3. – Spectrogram of the word *interest*

The analysis of experimental data suggests that the specific of oral speech realization leads to the reduction of consonant saturation due to the loss of consonants. Plosive consonants /t/ and /d/ mostly disappear after the sonorous consonants in the final unstressed position, for example *difficult* (Fig. 4) and *pound* (Fig. 5). Frequent elision of these sounds can be explained by the tendency to eliminate the consonants from the articulatory programme, because they prevent the blending of articulatory neighbouring sounds. Fast pronunciation of words and syllables in this case leads to the insufficient constriction of the tongue and the gum ridge, which has the effect of sound elision.

There are also numerous cases of strong relaxation and complete elision of sonorous consonants /l/ and /w/ as in *also* /'O:s34/ or *quarantine* /'kOrqnti:n/.

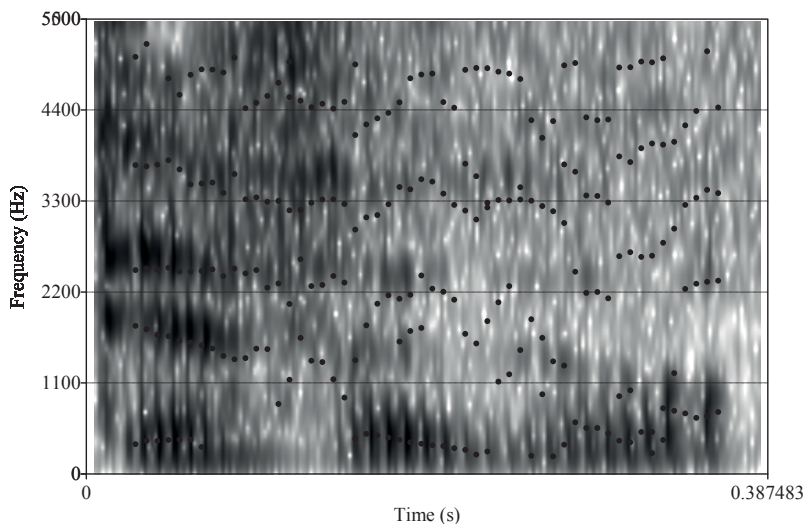


Figure 4. – Spectrogram of the word *difficult*

The analysis of variability of consonants in the business dialogic speech shows that not all consonants are equally subject to modifications. Some consonants are characterized by the stability of articulation and do not undergo the process of modification. This can be explained by functional importance of consonants in phonemic structure of the word.

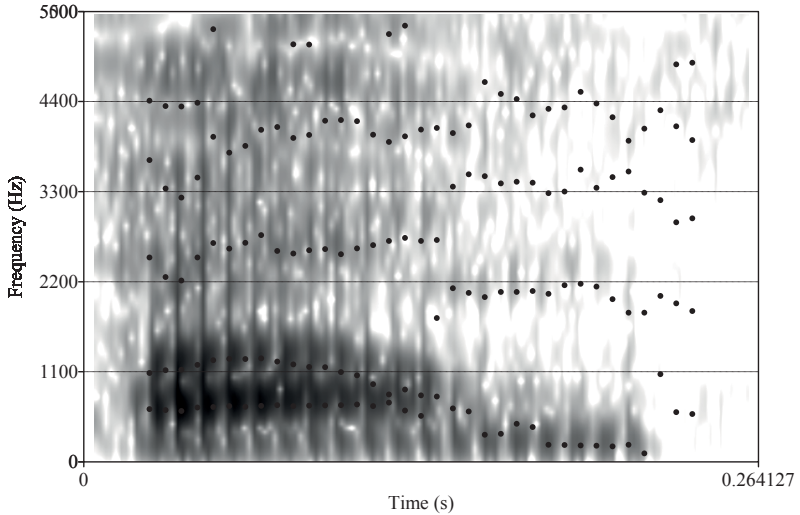


Figure 5. – Spectrogram of the word *pound*

The auditory and acoustic analysis of consonant variability leads to the conclusion that in the oral business discourse there are certain tendencies in the consonant modifications, namely the analysed consonants are characterized by the loss of some articulatory features. The group of voiced plosive consonants is the most flexible for modifications, and tend to articulatory weakening under the influence of the rapid pace of speech and thus to the fricativization. The relative stability of affricates can be explained by their complex articulation that provides greater period of time for their pronunciation. Thus, the consonant sound modifications include labialization of interdental consonants, voicing or devoicing of the consonant, fricativization of plosives, affricativization of plosive and fricative consonants, weakening and elision of consonants.

The research has shown that a great bulk of actual and potential tasks are still to be done, as far as the researched issues are rather sensitive and contradictory and, therefore, open to the further exploration and discussion. Therefore, the dynamics of consonant variation in continuous business discourse is of utmost topicality in modern language studies.

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