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TIMBRE CHARACTERISTICS OF THE INTERJECTION "YEAH"

Summary. The timbre pecularities of using interjections, especially the structure of formant analysis are found out in the article. The author accents attention on illustration the structure of formant analysis for both sexes using multifunctional computer programme Praat.

The article is related to the structure of formants, quantitative distribution of speakers between different genders, the formants' depending on it. The indexes of quantative distribution of the speakers, influence of gender on prevailing the formants in the speech of speakers, quantative distribution of using separate interjections are visually represented.

Timbre coloring of expressive speech is discussed in this article. The author describes masculine and feminine timbre and acoustic characteristics of the interjection YEAH with the help of the modern multifunctional program PRAAT. The main attention is focused on an illustration of spectral pictures of the interjection YEAH spoken by different genders of people in addition to the experimental analysis of the multipurpose computer programme PRAAT. The analysis of a timbre as a prosody component by means of which it is visually shown the strengthenings of sounding in defined formant, values of frequency vibration, the sounding which are measured in hertz. The author of the article points to quantitative distribution of the interjection YEAH by means of formant structure analysis.

Key words: formant, gender group, interjection, expressive speech, sounding, spectral picture, timber.

Introduction. Spontaneous speech shows a variety of timbre coloring and determines the conditional distribution of emotional and non-emotional content in speech. Timbre – sound coloring –gives speech certain emotional and expressive shades. The timbre of speech is very diverse and serves as a means of individual identification of a speaker, and it also reflects a wide range of emotional shades of speech. The timbre is an element of prosody, perceived from the first moment of pronouncing a word, in this case an interjection, and it also conveys the most minimal shades of the emotional content of that interjection [1].

It should be noted that any features of the interjection's usage to express the emotions of a linguistic personality should not be considered as absolute markers of male or female speech [2, p. 50]. The obtained data confirm the existence of male and female priorities in the use of certain units of the lexical level. We can state the existence of gender preferences in the usage of interjections in spontaneous communication. Studying the differences in the preferences of women and men in the use of interjections, we have drawn our attention to the frequency of the fundamental tone, as well as to the formant structure of the sound of interjections [3, p. 499].

The subject of this study was the spontaneous speech of men and women.

The aim of the study was to determine the tonal characteristics of interjections of the two gender groups.

The relevance of the article is due to the need to study the timbral characteristics of interjections of expressive speech of men and women.

Methods. In our theoretical background of the research complex methods were applied which include analytical, general, especially method of linguistic supervision, analysis, synthesis and the experiment. During the experimental part of our research the following methods were established: special method (*descriptive*), experimentally-phonetic method (*acoustic using multifunctional computer programme Praat*). We analyzed the interjection Yeah in a speech signal using *Praat software* [4].

The comparative method and method of data correlation were applied. The elements of mathematical statistics and counting of results were used. With the help of authentic material the methodology of the experiment provides the detailed analysis of timbral characteristics of the interjection "YEAH" and the influence of social status on it.

The material for the study was phrases including interjections from feature films in English Little Man, Mad Money, Meet Joe Black, The Nutty Professor. During the experiment, the dependence of timbral characteristics on the speaker's gender was analyzed.

The experimental part is a corpus of spontaneous sentences that contain the interjection "YEAH" written in a digital format. The fragments were taken from the feature films which demonstrate gender influence on timbral characteristics of the interjection "YEAH", the range of fundamental frequency, intensity and formant's structure.

In particular, for the interjection "YEAH", the dependence of timbral characteristics on gender is presented in Table 1 [5].

From the table it can be concluded that the tonal characteristics for the interjection "YEAH" depend on the gender characteristics of the speakers. So, for men, amplification of sound occurs in the fifth formant, while for women – in the fourth.

For men, the maximum FO value is less than for women by about 10 points (a graphic image is shown in Fig. 1 and Fig. 2).

The minimum FO value for men is approximately 18 points lower (a graphic image is shown in Fig. 3 and Fig. 4). The interval

Table 1

Dependence of timbral and gender characteristicsof the interjection "YEAH"

YEAH		
	Men	**Women**
Quantity	149	61
Average max FO (Fundamental Frequency) value, Hz	229,84	279,11
Average min FO value, Hz	165,42	205,47
FO range,%	38,9	35,8
Absolute max. FO value, Hz	490,0	500,0
Absolute min. FO value, Hz	40,8	58,9
Average value of the formant, ff	5	4

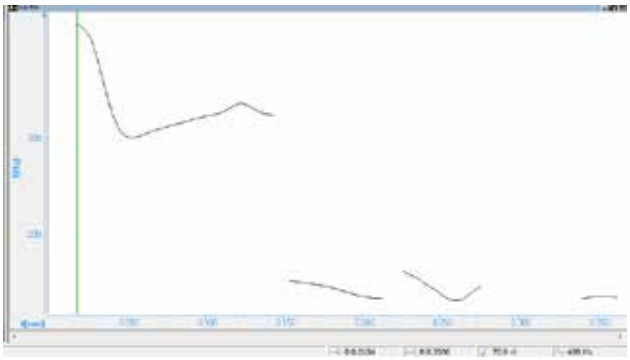

Fig. 1. Graphical representation of the Pitch curve for the interjection "YEAH" with an absolute maximum FO value for men

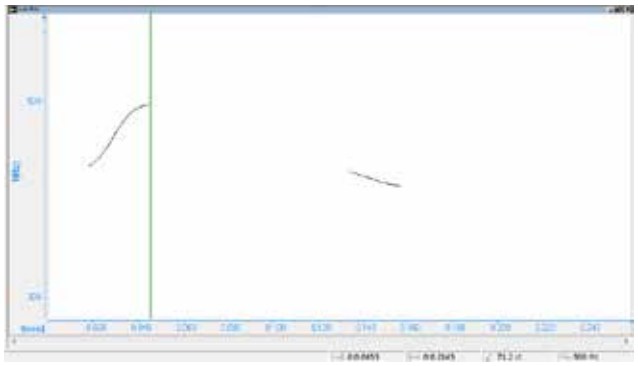

Fig. 2. Graphical representation of the Pitch curve for the interjection "YEAH" with an absolute maximum FO value for women

between the minimum and maximum values of FO for men and women almost coincide.

Below we illustrate the most characteristic spectral patterns of formants for the interjection "YEAH" observed in a group of men.

The analysis of the interjection "YEAH" in men's speech indicates that sound amplification occurs in the fifth formant with a probability of 88.6%, which means that in 88.6% of sound amplification implementations occurs in the fifth formant, and for the remaining interjections (11.4%) sound amplification is already happening in the fourth formant. The frequency value ranges from 40.8 Hz to 490.0 Hz.

Let us illustrate the most characteristic spectral patterns of formants for the interjection "YEAH" observed in a group of women.

Sound amplification occurs in the fourth formant with a probability of 59%. The analysis of the interjection "YEAH" in women's speech indicates that the amplification of sound occurs in the fourth formant with a probability of 59%, i.e. in 59% of implementations, sound amplification occurs in the fourth formant, and in 41% sound amplification occurs in the fifth formant. Frequency values range from 58.9 Hz to 500 Hz.

After the conducted analysis of the interjection "YEAH", it should be noted that the strengthening of sounding takes place in

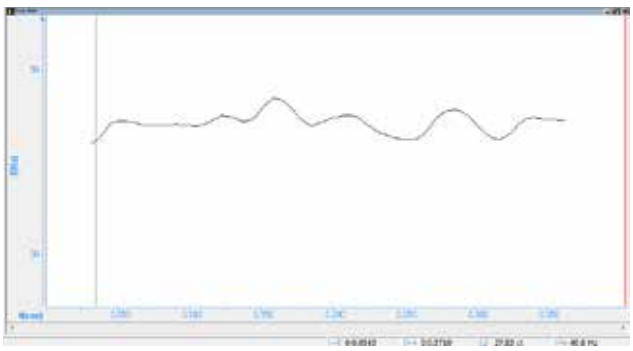

Fig. 3. Graphical representation of the Pitch curve for the interjection "YEAH" with an absolute minimum FO value for men

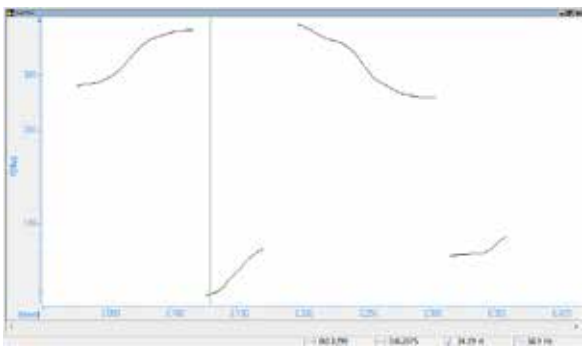

Fig. 4. Graphical representation of the Pitch curve for the interjection "YEAH" with an absolute minimum FO value for women

each fourth formant. Quantitative usage of the interjection YEAH and its quantitative distribution according to formant's structure is represented in Table. 2.

Table 2

Quantitative usage of the interjection "YEAH"

YEAH	
Formants	
f4	f5
6	4

After our experimental study, we can note that the gender factor affects the choice of various interjections, and the frequency of using interjections for men is higher than for women. The tonal characteristics of 43.5% of the interjections studied do not depend on the gender of the speakers, and 56.5% are dependent. Most announcers, both in the group of men and in the group of women, pronounce interjections in an even voice, and the amplification of sound in both groups of speakers occurs in the fifth formant.

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Бабчук Ю. Й., Драч О. І. Ембральні характеристики вигуку «YEAH»

Анотація. У статті з'ясовано тембральні особливості вживання вигуку YEAH, особливості формантного аналізу. Автор акцентує увагу на ілюстрації структури формантного аналізу для обох статей за допомогою багатофункціональної комп'ютерної програми PRAAT.

У статті розглядається будова формантів, кількісний розподіл мовців за статтю, залежність формантів від гендерної приналежності. Наочно представлено показники кількісного розподілу мовців, вплив статі на переважання формантів у мовленні мовців, кількісний розподіл використання вигука YEAH.

В статті автором розглядається тембральне забарвлення експресивного мовлення. За допомогою сучасної багатофункціональної комп'ютерної програми PRAAT автор описує чоловічі та жіночі темброво-акустичні характеристики вигука YEAH. Основна увага зосереджена на ілюстрації спектральних картинок вигуку YEAH, що вимовляється мовцями різної статі, на додаток до експериментального аналізу багатофункціональної комп'ютерної програми PRAAT. Аналіз тембру як складової просодії, за допомогою якого наочно демонструються посилення звучання у визначеній форманті, значення частотної вібрації, звучання яких вимірюється в герцах. Автор статті вказує на кількісний розподіл вигука YEAH за допомогою аналізу формантної структури звучання.

Ключові слова: форманта, гендерна група, вигук, експресивне мовлення, звучання, спектральна картина, тембр.