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Experimental investigation of intonation in kazakh quasi-spontaneous and spontaneous speech

In this article the authors examine the intonation of interrogative, exclamatory sentences in a quasi-spontaneous and spontaneous speech of the Kazakh language. The authors highlight the theoretical data on the research of the Kazakh intonation, as well as the results of an experimental study of intonation in the Kazakh spontaneous speech.

Key words: intonation, melody, speech, experimental method, phonetics, spontaneous speech.

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Квази-еркін және еркін сөйлеуде қазақ тілінің интонациясын тәжірибелік зерттеу

Бұл мақаланы авторлар квази-еркін және еркін сөйлеуде қазақ тілінің сұраулы және лепті айтылымдарының интонациясын зерттеуге бағыттайды. Мақала авторлары қазақ тілі интонациясының теориялық зерттеулеріне шолу жасау отырып, квази-еркін және еркін сөйлеудеқазақ тілі интонациясының тәжірибелік зерттеуінің нәтижелерін баяндайды.

Түйін сөздер: интонация; мелодия; сөз; сөйлеу; тәжірибелік әдіс; фонетика; еркін сөйлеу.

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Экспериментальное исследование интонации в казахской квази-спонтанной и спонтанной речи

В этой статье авторы исследуют интонацию вопросительных, восклицательных высказываний в квази-спонтанной и спонтанной речи казахского языка. Авторы статьи освещают теоретические данные по исследованиям казахской интонации, а также результаты экспериментального исследования интонации в казахской спонтанной речи. Для анализа типов высказываний, были выбраны квази-спонтанные и спонтанные записи речи.

Ключевые слова: интонация, мелодия, речь, экспериментальный метод, фонетика, спонтанная речь.

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EXPERIMENTAL INVESTIGATION OF INTONATION IN KAZAKH QUASI-SPONTANEOUS AND SPONTANEOUS SPEECH

Introduction

Intonation of the Kazakh language was studied theoretically and experimentally in line with the main tendencies of the general intonology, thus intonation was defined and successfully described mainly as multi-component unity of certain sound means. In the modern Kazakh intonology quite wide experience of the theoretical description of intonation is stored, nevertheless the exact quantity of intonation constructions isn’t still established: basing on the unique methodical principles N. Turkbenbayev described 10 types of interrogative sentences, Z.M. Bazarbayeva – 8 intones of the Kazakh language; B. M. Murzalina put into linguistic circulation the description of 5 types of intonational constructions and etc. Observed distinctions are caused first of all by that different authors’ base on various methods of their description, generating argumentativeness of interpretation of the Kazakh intonation and its units.

The phenomenon of intonation has also other tradition of description. There are phonetic schools in which expanded interpretation of intonation is considered ‘impractical’ and intonation is defined only as speech melody (occasionally intensity, duration and timbre are included). The Dutch school (Collier, Cohen, 1990; Keysper 1995), actively using experimental methods with application of computer programs belongs to such schools limiting intonation with speech melody (voice-frequency accent). Melody is considered a leading and the most important component of intonation as distinctions in melodic forming of the statement in most cases define its perception and interpretation: speaker allocates the necessary fragments of the statement (word, syntagm) to transfer communicatively important information, for example, by means of certain rising/falling of the height of tone, realising thereby so-called voice-frequency accent.

C.Ode, considering the definition of pitch accent of D. Bolinger, pays attention to that ‘special realization of pitch accent doesn’t not only distinguish the word from words surrounding it, but also creates speech melody’ (Ode 2005).

C. Ode also highlights that ‘intonation is a change of height of tone in a flow of speech (statement). Variations of pitch are movements of tone, such as ascending, descending, flat, jump up or down

in the range of tone height and such similar changes of tone. The certain movement of tone, or configuration of pitch movement, can give to a syllable in the word a perceptual prominence. In that case when the prominence is caused by tone height, this syllable, it is usually a syllable with a verbal accent, receives so-called pitch accent (Ode 2001).

Research Methodology

Selection of speakers and listeners for the implementation of experiments

The selection of speakers is one of the highlights of the organization and conducting of the experiment on phonetics, which is carried out in accordance with the general requirements described in the works of experimental phonetics (Artemov 1956; Artemov 1974; Ceplitis 1974). In accordance with the requirements described in most studies, the speaker: should possess perfect command of pronouncing the correct pronunciation of the target language; have a habit of speaking into a microphone; should not to have organic and functional defects of pronunciation; be between 20 and 50 years old; should not have false teeth.

In addition to these basic requirements, in the selection of speakers we took into account the following points: higher (philological or journalistic) education; skills of public speech (speakers – professors, associate professors, doctoral students who have worked between two and 25 years as a teacher at the University, employees of television and singers); representation by age and sex (here the frequency range of the male voice from 100-200 Hz, a female voice from 200-300 Hz was taken into account); representation by place of birth: the town – the village, and other factors.

The next point of the experiment was the selection of listeners, which was no less important factor in the success of the experimental part of the research. We proceeded from the fact that the listener, which produces 'acoustic features of speech analysis, perceived and understood by ear, in the conventional pronouncing or recording' should have normal hearing (both ears); have a high level of intelligibility of hearing; to be successful in teaching listening; maintain auditory focus; possess a high degree of concentration and distribution of attention; be able to predict the semantic content and the deployment of the language of the audited message; possess analytical and synthetic relation to the audited material and etc.

We have tried to take into account the general requirements for the selection of listeners among students, undergraduates, doctoral PhD of Kazakh National University named after Al-Farabi, studying on the specialty 'Kazakh language and literature', 'Linguistics', 'Applied Linguistics', as well as teachers of the Kazakh Philology and practical Kazakh language of the Philological faculty of KazNU named after Al-Farabi and researchers of the Institute of Linguistics named after A.Baitursynov.

All the selected listeners, who have participated in the experiments, are the native speakers of the Kazakh literary language and represent three age groups (from 20 to 30, from 30 to 40, and from 40 to 50). In total, to the experiments were attracted 70 listeners.

Procedure and results of recording Kazakh quasi-spontaneous and spontaneous speech

The recording of Kazakh quasi-spontaneous and spontaneous speech was carried out during 2006- 2007 in the city of Almaty. However, it is not a reflection of the speech of urban Kazakhs living in Almaty. Only four speakers are the natives of the city of Almaty, the remaining speakers live in Almaty on average from 2 to 20 years.

In the process of collection of the material the special importance is given to the preparation for recording and drawing up guidelines for speakers. The recording conditions were to provide unambiguous results. It was recommended to equalize all the conditions except the intentionally selected research parameter, which deliberately varied, respectively the research problem (Ceplitis 1974). All speakers were in equal conditions, the silence and the absence of background noise and the impact of others was provided.

On the stage of preparation of speakers for the recording, they were instructed with a detailed explanation of the objectives, tasks and the recording conditions. In order to record a quasi-spontaneous speech the excerpts from fiction and periodicals, interpreted by the speaker alone and recorded in conditions that best meet the requirements of the recording were proposed: in total 888 statements of quasi-spontaneous Kazakh language were recorded. The recording of spontaneous statements was carried in the amount of monologues and mini-dialogues (which were invented independently by a predetermined speakers or any chosen topic and consisted of 4-5 sentences, from which later were retrieved 139.

Results and Discussion

Perceptual-auditory experiment on the perception of Kazakh quasi-spontaneous and spontaneous speech

The methodological validity of the chosen method supports the view of theoretical and experimental analysis of the practice of intonation. «Learning a language through the analysis of oral speech has found very wide application as sounding speech is rightly considered an indicator of language system, able to represent unknown unit of linguistics and language rules. This study relies heavily on the acoustic analysis of speech (Artemov 1974). Native speaker, perceiving sounding speech is able to recognize the objective features of intonation, including its physical, grammatical and semantic properties. However, the perception of intonation to some extent depends on the language skills and experience of the auditory work.

Therefore the researcher has no right to, and should not look for a simple overlay of the listener's indications (in connection to the movement of pitch, tone, volume and accent division of phrase) on the physical features of intonation: the number of oscillations, the overtones, the vibration amplitude, time and physical pause (Artemov 1974).

However, in any perception of speech intonation stands as the main and the secondary is simultaneously obscured .... The firstly perceived is brighter than it actually looks, and the second as it recedes into the background and appears paler than it really is. The words and syntagmas allocated by their semantic content in the phrase (as opposed to non-highlighted words) are heard very clearly spoken, bearing the primary (logical) accent. They are pronounced on a markedly elevated or reduced tone (Artemov 1974).

Taking into account the mentioned above, in accordance with the task of perceptual experiment instructions the steps of listening process were drawn up for the listeners.

For the next step of the experiment, the participants and tasks were divided into two groups: the task for the experimenter and tasks for each participant in the experiment.

The experimenter must carry out the preparations for the experiment, the experiment itself, as well as processing and analysis of experimental results.

In the work of the experimenter is included preparatory phase: a) providing a sound and text (quasi-spontaneous and spontaneous speech) of the material for the auditory analysis (recording of audio material and drawing up guidelines for listeners-informants); b) the preparation of a text (written) recorded version of quasi-spontaneous and spontaneous statements.

Considering the preparatory work for the implementation of experiments in detail it should be noted that for the preparation of the audio material has been carried out the processing of the statements from the computer to the recorder; statements were recorded on tape in a random order; dictaphone record was repeatedly auditioned for determining the duration of the experiment. A written text was prepared on the basis of the sound material; written text of the recorded audio material was compiled without punctuation, capital letters, intervals; an instruction for the speakers was drawn up.

After reading the instructions, the listeners were given a written text, and a recording of statements for listening. The task for the listeners consisted in listening to the recorded statements and determination of the naturalness of sounding intonation.

For the assessment of the listeners' responses the following scale was used:

1) complete naturalness: when 100% of the listeners perceive the intonation as a natural;

2) incomplete, but natural enough: when 70% to 95% of the listeners perceives as a natural tone of the statements;

3) unnatural: when 65% of the listeners, or less perceived the intonation of the statements as natural.

The text of the material was written from the computer to the recorder. Then the text was auditioned by the experimenter and subjected to primary processing (checking playing time).

The experiment lasted for 15 minutes. The experiment was attended by 20 listeners. Instruction for the listeners (in Kazakh) was presented as follows:

You participate in the experiment on the perception of speech.
The experiment lasts for 15 minutes.

Your task is to listen to the statements, it is necessary to put the punctuation marks (to determine the nature of the statements: question, exclamation).

Surname: ……..
Age: 20-30, 30-40, 40-50 (underline the correct option)
Education: ……..
Place of Birth: ……
Kazakh language – is it your native language? Yes, No (underline the correct option)

Figure 1 – Instruction for the listener-participants of perceptual-auditory experiment

The experiment included 117 statements from 250 statements of the original recording. 106 out of 117 were interrogative sentences, while 11 were exclamation statements.

The results of the first part of the experiment on the perception of the 106 communicative types of interrogative sentences are shown in Figure 1.

Figure 1 shows the quantitative data on the perception of the communicative type of question statements: 55 statements were almost unanimously identified by the listeners (20 and 19 listeners) as questions, i.e. 90-100%; 24 statements were identified by 13 listeners as questions (65%), while the remaining 37 statements were assessed as questions by over half of experts (from 14 to 18 listeners, 70-85%).

The data allowed to include into the further analysis 82 (106-24) statements that received perceptually-auditory assessment as questions, 24 statements were excluded from the further study.

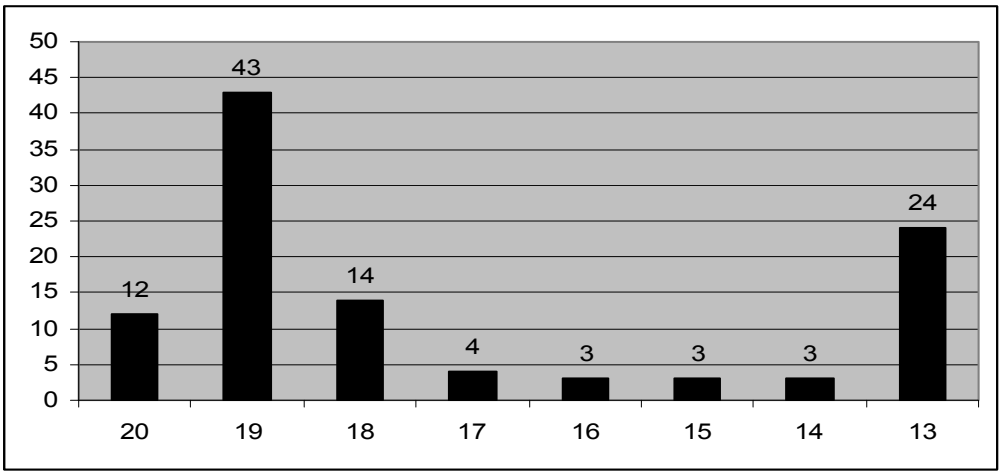

Figure 2 – The results of the experiment on the perception of the communicative type of interrogative sentences. Horizontal indicates the number of listeners, the vertical – the number of statements.

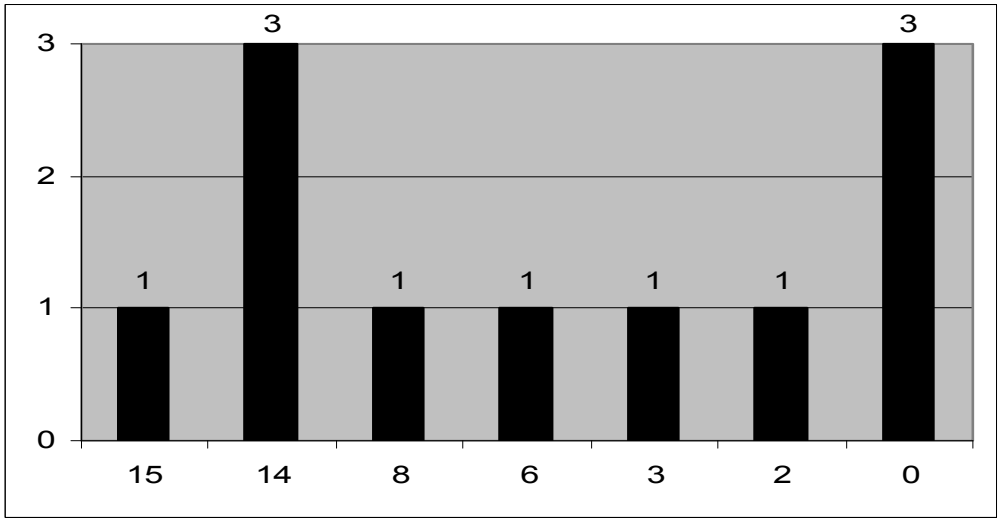

Figure 3 – The results of the experiment on the perception of the communicative type of exclamatory statements. Horizontal indicates the number of listeners, vertical – the number of statements.

As mentioned above, the experiment included 11 statements with exclamation. The results of this part of the experiment are recorded in figure 2. The experimental results show that out of the 11 exclamatory statements, only 4 statements were qualified an exclamatory. The rest of the statements were es-

timated as communicative undefined and were excluded from further analysis.

Conclusion

The experiment on the perception of the communicative type of question and exclamation sentences in Kazakh quasi-spontaneous and spontaneous speech allowed validating the correctness of its instrumental processing. The experimentally-phonetic approach and the results of studies of perceptual-auditory analysis have shown that the vast majority of the statements emphasized bythe listeners are natural, communicative types of utterances.

References

1 Artemov V.A.The method of structural and functional study of speech intonation. The manual for the course on phonetics and psychology of speech for the students of pedagogical faculties.– Moscow: MGPIIYA im. M. Toreza, 1974.– P.160.

2 Baytursynuly A. The writings.– Almaty: ZHazushy, 1989.– P. 320.

3 Bolinger D. Intonation and its Parts: melody in spoken English. – London: Edward Arnold, 1986. – P. 421.

4 Bryzgunova E.A. The Grammar of the Russian Language.– Moscow: Nauka, 1982. – T. 2. – P.709.

5 Ceplitis L.K. Analysis of speech intonation. – Riga: Zinatne, 1974.– P. 272.

6 Darkulova K.N. The main directions of researches on prosody and intonation of the Kazakh language // KAZGU Bullettin. Philology Series. – 2002. – No. 2. – P. 34-37.

7 Keysper K. About the semantic bases of the description of the Russian intonation. –1995.

8 Bryzgunova E.A. Problems of phonetics. Chap. 2 Intonation. The Grammar of the Russian Language. – Moscow: Nauka, 1980.– P. 216-227.

9 Khasenov A. Linguistics.– Almaty: Almaty,1996.– P. 215.

10 Kovtunova I.I. The Contemporary Russian Language. – Moscow: Prosveshchenie, 1976. – P. 239.

11 Ode C. The experimental and phonetic analysis of tones in Papuan language / Materials of the International conference. 100 years Experimental phonetics in Russia. – St. Petersburg, 2001. – P. 137-140.

12 Ode C. What is pitch accent? Life of language and language in life Coll. articles, devoted to anniversary d.ph.sc., prof. Suleymenova E.D.: Authors. Shaimerdenova N.Z., Sabitov Z.K., Altynbekova O.B., Akberdi M.I.; Under the general edition of Shaimerdenova N.Z. – Almaty: Kazak universiteti, 2005. – P. 76-85.

13 Syzdyk R. The Music of Speech (The rules of pronunciation). Additional manual. – Almaty: Sanat, 1995. – P.120.

14 Torsueva I.G. Intonation and meaning of utterances. – Moscow: Nauka, 1979. – P.111.

15 Hart J.T., Collier R., Cohen A. A perceptual study of intonation: an experimental-phonetic approach to speech melody. – Cambridge: Cambridge University Press,1990. – P. 212.

16 Zhubanov K. Kazakh Language Studies. – Almaty: Gylym, 1966.– P. 361.