

Singing vs. reading. Parameters of intonation in comparison

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ABSTRACT

The study presents an investigation of prosodic differences between singing and speaking and focuses on prosodic parameters of intonation, on its functional differences. It is based on the recordings of signals of three young singers who have read and have sung the same fragments from Russian popular songs. These singers (females) are professionally educated and are at the age 16-18.

The first stage of the experiment included only singing. The singers were required to sing some short fragments from Russian romances, folk songs and schlagers of today. WINCECIL programme's analysis has been used.

The second stage of experiment consisted of reading just the same fragments in the randomized order.

There were 180 examples under consideration : [30 (Singing) + 30 (Reading)]x 3 = 180.

Criterion 1. The Fo changing in fragments analysed.

The most preferable notation were marks: + and -. The + functioned as the sign of great changing, and the - as the sign of insignificant change.

Criterion 2. The movement of Intensity in the same fragment. The + here designated the sharp change in the intensity curve, the - signified the slow change in the I-movement.

Criterion 3. The coincidence (marked by YES) vs. uncoincidence (marked by NO) between Fo movement (changing) and Intensity curve at the same fragment.

Results and Data analysis

1. The Fo minimized number of variations by singing, it was nearly monotone. But by reading the melodic range was larger, as it used by active speech processes.

2. The intensity curves varied very much, equally both by singing, and by reading.

3. Yes/ No criterium demonstrated that the coincidence of I and Fo was observed to a greater degree by reading than by singing.

It might be that it is a common fault to consider Fo variations to be the dominant parameter in singing. As we see, Intensity plays its own role.

1. INTRODUCTION

Parameters of intonation in comparison

My study presents an investigation of prosodic differences between singing and speaking and focuses on prosodic parameters of intonation, on its functional

differences. It is based on the recordings of signals of three young singers who have read and have sung some fragments from Russian popular songs. These singers (females) are professionally educated and are at the age 16-18. One of the soloist (d.T) is a student of Central Music school. Two others (d.P. and d.R) are permanent participants of chorus at the Arts Lyceum (Moscow).

In the present study we set out to analyze the correlation between Fo and Intensity . It is of special interest because of common opinion that only the frequency determines melodic types in singing.

The first stage of the experiment included only singing. The singers were required to sing some short (no longer than three seconds duration) fragments from Russian romances, folk songs and schlagers of to-day. The recordings were done using microphone and fixed as special files. WINCECIL programme's analysis has used.

The second stage of experiment consisted of reading aloud just the same fragments in the randomized order.

Thus, there were 180 examples under consideration : [30 (Singing) + 30 (Reading)]x 3 = 180.

What data were of the main interest?

Criterion 1. The Fo changing in fragments analysed.

The most preferable notation were marks: + and -. The + as the sign of great changing, and the - as the sign of insignificant change.

Criterion 2. The movement of Intensity in the same fragment. The + here designates the sharp change in the intensity curve, the - signifies the slow change in the I-movement.

Criterion 3. The coincidence (marked by YES) vs. uncoincidence (marked by NO) between Fo movement (changing) and Intensity curve at the same fragment. What was the coincidence in our case? Two things. Firstly, it is visually similar to Fo movement line and the Intensity curve. Secondly, it marks just the same placement of Fo peaks and Intensity peaks.

We ought to remind that the diversity of singing styles was chosen deliberately in order to be independent from singing genre. All fragments such as singing and reading ones represented full sentence propositions, not snatches ones. For example, *Kust hrisantem paschel* (The bush of chrysanthemum is in the blossom) ; *Vo pole bereza stojala* (The birch was at the field) ; *Mal'chik hochet v Tambov* (The boy wants to go to Tambov);

Vaznej vsego pogoda v dome (The weather at home is the main thing) etc.

2. RESULTS

See Summary Table:

	Fo	I	Yes / No
D.P. Singing	+: 13%; -: 87%	+: 100%; -: 0%	Yes: 46%; No: 54%
D.P. Reading	+: 100%; -: 0%	+: 100%; -: 0%	Yes: 60%; No: 40%
D.R. Singing	+: 20%; -: 80%	+: 100%; -: 0%	Yes: 40%; No: 60%
D.R. Reading	+: 100%; -: 0%;	+: 100%; -: 0%	Yes: 80%; No: 20%
D.T. Singing	+: 0%; -: 100%	+: 100%; -: 0%	Yes: 20%; No: 80%
D.T. Reading	+: 100%; -: 0%	+: 100%; -: 0%	Yes: 75%; No: 25%

3. DATA ANALYSIS

1. The Fo had minimal number of variations by singing. Namely, it was nearly monotone by all singers.

But by reading the melodic range was larger -as it is usual by active speech processes.

2. The intensity curves varied very much - equally both by singing, and by reading.

3. *Yes/ No* criterium claimed to demonstrate an unexpectedly interesting result:

The coincidence of I and Fo was observed to a greater degree by reading than by singing.

4. A SORT OF INTERPRETATION

What sort of conclusions could we make from these pilot observations?

It might be that we are in fault to consider Fo variations to be the dominant parameter in singing. As we have noted, Intensity plays its own rather mysterious role.

And - finally - the obligatory question rises : what acoustic parameters correspond actually to our well-known music notation?