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Psychology Applied to the Improvement of Control of the Pitch of the Voice in Singing

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PSYCHOLOGY APPLIED TO THE IMPROVEMENT OF CONTROL OF THE PITCH OF THE VOICE IN SINGING.

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The object of this research is to ascertain some of the elements in the acquisition of accuracy of pitch in singing. The study was divided into three divisions: (1) a preliminary series of five tests, in which no information was given the observer in regard to the accuracy of his singing; (2) a practice series of ten tests, during which the observer was informed of the error in pitch after each trial; and (3) a final series of five tests conducted in the same manner as the first. The object of the first test was to ascertain the accuracy of their singing without training; the second was the training series, the object of which was to correct the errors and to form new tonal concepts and voluntary control; and the object of the third series was to find out whether or not the observers had profited by the training in the second series and to what extent they carried it over into actual practice.

The tonoscope, a 256 v. d. tuning fork, and a resonator were used in this experiment. The observers, four men and eight women, were all interested in music, but none of them had had any special training in singing. The tones sung were the fundamental, third, fifth, and octave. The fundamental tone was obtained from the fork. As soon as the observer had the given tone clearly in mind, he sang that tone and immediately followed it by singing one of the intervals.

The tables below give the average errors in terms of vibrations and the per cent of gain in the second and third series over the first.

MEN.

	First series. Error.	Second series. Error.	Second series. Gain. Per cent.	Third series. Error.	Third series. Gain. Per cent.
Fundamental	1.9	.5	77	1.1	42
Third	2.4	.9	62	1.8	25
Fifth	3.1	1.1	64	2.4	23
Octave	2.3	1.2	47	1.9	22

WOMEN.

Fundamental	4.2	1.8	57	2.3	45
Third	5.2	1.9	63	3.8	27
Fifth	5.9	2.3	61	4.2	30
Octave	6.0	3.4	43	3.5	44

The records show that the natural tendency of the women was to sing sharp throughout. The men sang the intervals sharp but the fundamental flat. Very few persons sing in true pitch. The reason for this is that the ear is not keen enough to detect small errors in pitch and to act as a check in accuracy of singing. This was very evident in the first series where no information was given the observer in regard to his errors. In this series the observers sang in their usual manner. Although they all sang sharp or flat, they were apparently satisfied with their singing, for they made no attempt to correct themselves. Hence we find that no improvement was made in this series and the variation in the average error was small.

In the second series the errors were proportionally much smaller than those in the first. This clearly indicates that accurate checking of errors in pitch enhances the ability to strike a tone and to sing an interval. The decrease in error was so pronounced in the first test that there was very little improvement made during the rest of the series.

The errors in the third series were somewhat larger than those of the second but smaller than those of the first. This is significant, for it indicates that there was a transfer of gain from the training series to the final unaided series; or, in other words, voluntary control had been developed through accurate checking of errors.

This proves quite conclusively that training with accurate checking of errors develops accuracy of pitch in singing. What the exact nature of the development is, may be difficult to explain, but it is probably in the form of new tonal concepts, better muscle control, keener discriminative power, increased confidence, and ability to eliminate disturbing factors.

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