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A New Scientific Musical Staff

Carl E. Seashore
State University of Iowa

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BASIC DIFFERENCES IN PITCH, INTENSITY, AND
TIME BETWEEN GOOD AND POOR
VOICES DURING SPEECH

ELWOOD MURRAY AND JOSEPH TIFFIN

This investigation involves the photography of pitch, intensity, and duration changes in about 80 poor speaking voices and 60 good speaking voices to ascertain basic differences that will indicate procedures for remedial purposes. The voices studied were the best and the poorest among 970 freshmen at the University of Iowa as rated and described by speech pathologists of the university staff. By means of a procedure worked out by Tiffin and others, a synonymous intensity, a pitch, and duration record of each syllable is photographed on a single strip of sensitized paper six inches wide.

The results indicate that the good voices have a larger total pitch range for both men and women; the pitch range within syllables is also greater for the good voices; there is little difference in the average pitch level; the proportion of voiced time to entire speech time is about 10 per cent greater for the good voices; generally, there appears to be relatively greater changes of intensity between syllables, a larger number of fluctuations of intensity within syllables, of slightly greater extent and duration, for the good voices. Analysis of the poor voices is now proceeding with indications of further differences becoming apparent.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

A NEW SCIENTIFIC MUSICAL STAFF

CARL E. SEASHORE

The psychological laboratory in the University of Iowa is conducting a number of studies in the psychology of music, laying scientific foundations for the theory and practice of the art. To make these scientific findings in the interpretation of vocal and instrumental music as actually rendered, it has been necessary to design a scientific type of musical score. This has been built as closely as possible in musical terminology but is so designed as to show in great detail how the notes are actually sung and played. For example, instead of indicating the note "C" by the usual musical notation, a graph is substituted showing exactly how the

tone was rendered. Parallel with this is a method of showing changes in loudness and stress in the rhythm and another notation to indicate the tone quality.

For all these three, the time value is indicated in hundredths of a second. In this new notation, the laboratory is publishing complete musical numbers showing for every note its value in the four respects of pitch, intensity, time and timbre. All possible variations in musical tones can be represented in these four terms. The notation has already been used in publication of a volume on Negro songs which was collected by the camera photographing the sound waves, and is now being used in publishing interpretation of artistic singing and playing.

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AN ARTISTIC "PIANOGRAM"

LAILA SKINNER

This paper consists of a discussion of factors in artistic piano playing, studied from photographs made while an artist plays.

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AN APPRAISAL OF PSYCHO-PHYSICAL CAPACITIES AND ABILITIES SIGNIFICANT FOR SUCCESS IN ART

HILDEGARD DREPS

The nature of art talent has been a problem of considerable research in the last decade. A careful survey was made of all available data in regard to selecting tests which were best adapted for the appraisal of certain capacities and abilities that function in the various artistic performances and 18 tests were selected. These were given to 27 subjects divided into three groups: a superior artistic group, an average group of art students with very little training, and a group of non-art people. Each subject reported individually for the tests and the amount of time required from each was from 12 to 16 hours. Correlations were made between the various tests and the ability and capacity of each group was compared with that of the others.

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