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THE RELATIVE IMPORTANCE OF INTENSITY AND TIME STRESS IN SINGING

HAROLD SEASHORE

The factors that enter into the production and perception of rhythm in singing are so varied and complex that they almost defy clarification. In discussing rhythm of the singer, musicians have confined themselves almost entirely to one general term: stress, with its loose synonyms, accent and emphasis. These terms are not well-defined, although generally the context implies that stress, accent, and emphasis mean an increase in dynamics, a "push" in intensity. It is the purpose of this paper to attempt to clarify the nature of vocal rhythm by discussing some studies of two major factors that are involved: time stress and intensity stress.

To indicate that these are but two factors in a hierarchy of factors involved in rhythmic expression, we present an inventory of rhythmic variables in Table 1. It is seen that there are over two dozen rather independent variables in the whole tonal pattern that enter into the rhythmic performance. This inventory moreover may not be complete. These variables are grouped under the four physical attributes of the sound waves by which the singer conveys his expression: time, intensity, frequency and wave-form.

Table 1 — An Inventory of Factors in Rhythmic Expression in Singing

I. DURATION (Time)

1. *Composition*

- a. Note and rest values: the note pattern¹
- b. Meter: the measure pattern
- c. Phrase: the verse pattern
- d. Tempo: the song pattern
- e. Words: meter, phrasing, synchronization
- f. Accompaniment: coordination with melody

2. *Performance*

- a. Time stress: over- and under-held tones
- b. Progressive shifts: rubato, accelerando
- c. Special effects: arhythm, syncopations
- d. Words: scansion, phrasing, synchronization
- e. Accompaniment: synchronization, tempo

¹Items after the colon are examples. In most instances others could be added.

II. INTENSITY (Intensity)

1. *Composition*a. Symbols: *pp*, *ff*, *cresc.*, *sfz*2. *Performance*a. Intertonal dynamics: stress, *cresc.*, phrase

b. Intratonal dynamics: contour within tones

c. Words: scansion by intensity stress

d. Accompaniment: augmentation of voice stress

III. PITCH (Frequency)

1. *Composition*

a. Melody: tones favoring accent

b. Phrase: cadence, repetition, contour

c. Words: speech-singing melody coordination

d. Accompaniment: melody, arpeggio, chords

2. *Performance*

a. Ornaments: vibrato, grace notes, figures

b. Transitions: attack, release, portamento

c. Words: effect upon pitch accuracy, transition

IV. TONE QUALITY (Wave-form)

1. *Composition*

a. Words: mood, meaning, "color," alliteration

b. Accompaniment: piano, orchestra, organ

2. *Performance*

a. Vowel: inter- and intratonal quality

b. Articulation: consonants, pauses, clarity

In the analysis, we find that rhythmic expression is not governed entirely by the whims and artistry of the singer. His basic performance is prescribed by the composition which he is interpreting. In artistic speech, the speaker's use of pitch, time, intensity and tone quality is governed only by the poetry or prose which he is interpreting. In singing, the performer is governed not only by the text, but also by a set melody and time pattern, although he, too, has rather free range of dynamics and quality. Essentially the singer's task is to perform the musical composition with fidelity and to make his deviations from the score as artistic as he knows how.

With the complexity of rhythm in mind, we shall try to point out the operation of only two aspects of it which essentially are performance variables and not compositional factors.

A tone is said to have received time stress when it is overheld with respect to the tones on both sides of it. This is not to be confused with the sheer fact that a quarter note is supposed to be twice the duration of an eighth note. Rather we are concerned with the overholding or underholding of either of these with respect to strict time. All the tones in a song are equated to some unit

length, usually an eighth note. Thus the actual duration in performance of a quarter note is divided by two, of a five-eighths note by five, and so on. This gives a table of data showing the relative over- and underholding of all the tones on a comparable basis.

A tone is said to have received intensity stress when its peak intensity is greater than that of its adjacent tones. For the present we shall neglect the distribution of intensity within the longer tones.

(In the figures presented before the Academy in Des Moines, there were two essential curves, one of the time stresses, one of the intensity stresses. Both were plotted synchronously with the melody and time pattern of the score. From these graphs we were able to study the roles of the two forms of stress.)

To date, we have studied four singers: two local singers, a tenor and a basso; and two artists of note, Crooks and Tibbett. The four songs were legato in style with rather subdued and simple rhythm. On the basis of these analyses, the statistical treatment of which is omitted here, we can point out the following observations:

1. Intensity stress is not a consistent method of gaining rhythm since the crescendo and decrescendo of the whole phrase usually masks the dynamical peaks of single tones. Stress on individual notes is secondary to the phrasal contour.

2. Time stress seems to be more important than we have heretofore thought. While not all the beat positions of the measures receive time stress, time stress appears more often and more consistently than does intensity stress.

3. Analysis of these two factors accentuates the importance of studying still other factors, especially melody, actual time pattern, articulation, transitions and the lyric.

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