IN SEARCH FOR OBJECTIVE EVALUATION OF SELECTED FACTORS PREDICTING SUCCESS IN MUSICAL PERFORMANCE – A PILOT STUDY

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Background

When evaluating students' progress, music teachers frequently refer to behavioural aspects of musical performance, hoping that correct usage of playing apparatus is a necessary condition for proficient musical production. Thus extended experimental foundations for diagnosing breathing disturbances in singers and musicians playing wind instruments would help teachers in evaluating a student proficiency level as well as in planning cure exercises.

Aims

A pilot study was administered to verify possible ways of correlation teachers' evaluations of vocal and wind instrumental performance with registered breathing and pulse rate irregularity.

Method

Performances of songs by Mieczyslaw Karlowicz (N=5), and items 7, 8 and 9 taken from the *Watkins-Farnum Performance Scale* (N=5) were audio recorded, and the parameters of two breathing factors (chest and diaphragm movements) and blood pulsation were registered on a computer disc. Music recordings were evaluated by groups of music teachers (N = 12 and 16 for songs; N = 6 and 5 for wind music). The teachers marked beats in printed music on which they observed specified errors, which included shortcomings in (1) *appoggio*, (2) *passaggio*, (3) *legato*, (4) text delivery, and (5) music related breathing for songs, and (1) sound quality, (2) passing to another register, (3) sound attack, and (4) breathing for winds. These evaluations were projected against plots representing an acoustical form of the performance (sampled SPL), movements of chest and diaphragm, and the pulse. All dimensions were co-ordinated on the level of a musical beat. The inter-judge consistency was estimated, and clusters of error markings were examined against the behavioural parameters by a team of music educators and a medical doctor.

Results

Depending on the composition, 39 to 56 percent of errors marked in songs formed clusters of marks given by three or more teachers. In wind music 47 to 85 percent of errors clustered at particular beats of music. Remaining error markings dispersed over compositions forming no clear patterns. Breathing disorders depended upon the subject's musical advancement. Most commonly, a lack of synchronisation between the chest

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inhalation phase and diaphragmatic movements was diagnosed, frequently accompanied by a paradoxical diaphragmatic movements. Blood pulsation changes were less frequent. In several cases clusters of musical errors coincided with the breathing irregularity. However, no patterns have been disclosed suggesting that breathing disturbances generate musical errors.

Conclusions

The method of paralleled observations seems to be promising but still needing elaboration. Particularly, a set of correct breathing graphs should be collected and classified to serve as the reference for various incorrect instances. Thus examination of performances by professional musicians is planned at the next stage of the study.

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