

**Investigation of Voice Stage Support: Subjective Preference Test  
Using an Auralization System for Self-Voice**

by  
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## ABSTRACT

The human voice plays an integral role in dramatic art. The performance of singers and actors, who perceive their voice through their ears as well as bone conduction through their jaw and skull, is highly related to the acoustic environment they are in. Due to the proximity of the sound source and the spectral difference in the transmission through the skull as compared to air, a support condition different from that for musical instrumentalists is needed. This thesis aims to initiate a standardization of methodology in subjective-preference testing for voice stage support in order to collect more data for statistical analysis. A proposal for an acquisition/auralization system for self-voice and a set of subjective test procedures are presented. The subjective evaluation of the system is compared to previous designs reported in the literature, and the implementation is validated. A small playhouse has been measured and auralized using the system described, and subjective-preference tests have been conducted with 13 professionally trained actors. Their preferred stage-acoustic conditions (in relation to locations on stage and head orientations) are reported. The results show potential directions for further investigations and identify the necessary concerns in developing an objective parameter for voice stage support.