

A relation between characteristics and subjective evaluation for tremolo played with the Mandolin

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Abstract

Background to the research or performance/installation

The tremolo is one of the popular styles of playing the Mandolin. Though past studies have been clarified acoustic characteristics of the Mandolin, few studies have been achieved for clarifying characteristics of tremolo played by experts.

Interdisciplinary issues

Though there is almost no agreement concerning physical characteristic of tremolo played by experts, we have obtained subjective criteria from practical players, who point out that (1) the intensity of sound in each plucking should be constant, (2) style of plucking should not have varieties, and (3) fluctuation feeling for tremolo should be small. Although these criteria are in some senses acceptable, physical characteristics of tremolo have not been actually investigated, so objective criteria for tremolo have not been found out yet.

The issue/hypothesis under investigation

The "Fluctuation Strength (FS)" was suggested as an evaluation index of hearing sensation concerning modulated sounds of low frequency. Past studies had been clarified that FS for amplitude-modulated pure tone (AM SIN) with a modulation frequency within 4-8 Hz is large compared to the range outside of 4-8 Hz. We assumed that the characteristics of tremolo are somewhat similar to AM SIN of slow speed. Therefore, we construct the following hypothesis: "The fluctuation components extracted from a tremolo influences the fluctuation feeling, or an aesthetic evaluation".

Findings/description

Fitch, W. T., Hauser, M. D., & Chomsky, N. (2005). The evolution of the language faculty: Clarifications

Conclusions/future directions

It is confirmed that tremolo evaluated as good has relatively a small amount of physical FS. Future works are to compare experts with beginner and clarify a relation between irregularity of tremolo and subjective evaluations of performance proficiency.