Construction of a Scale for Evaluating the Impression Sedative and Uplifting of Music

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Previous research has found that music may be capable of influencing the mood and physiology of listeners. And the influence differs depending on the type or characteristic of music. In recent years, studies about the influence of BGM (Back Ground Music) on performance of task have been becoming a popular topic. But results of them are different because characteristics of subjects and types of tasks are different. There can be a positive influence, and there can be a negative influence or no influence. The music researchers are using is another important reason. If researchers want to get an expected result, they need to choose suitable music. They need to know what characteristics the music exhibits before they choose it. They need a scale. But the fact is that most researchers just use music that they think suitable. There is the affective value scale of music proposed by Tanikuchi in 1995, which measures the affective value of some aspects of music, not intended to classify music as a particular type. Many studies, however, need to use music of particular type, such as happy or sad.

The purpose of this study is to propose a scale to measure the impression sedative or uplifting of music and classify it as sedative music or uplifting music. We focus on sedative and uplifting because this scale is proposed for BGM studies most are about the sedative or uplifting influence of music.

This scale is intended to measure characteristics about the sedative and uplifting of music, not intended to measure listeners' feeling after they have listened to the music.

A preliminary experiment was carried out to select adjectives to express sedative or

uplifting for music to establish a scale. A questionnaire was firstly made to decide which adjectives express sedative or uplifting. There were 101 words. There were 10 subjects. The result was that 30 sedative adjectives and 30 uplifting adjectives were selected. Another experiment was carried out for which another 12 subjects were employed to listen to 8 pieces of classic music and evaluate the impression sedative and uplifting of them using those 60 adjectives. A factor analysis yielded 5 major factors, and 43 items with high loading on these 5 factors were selected to construct 5 subscales for the scale for evaluating the impression sedative and uplifting of music. These subscales were called uplifting-positive, uplifting-strong, sedative-negative, sedative-weak, sedative-grave. Most adjectives of uplifting-positive expressed positive emotion, however, most adjectives of sedative-negative expressed negative emotion. Most adjectives of uplifting-strong expressed sharp and exciting, however, most adjectives of sedative-weak expressed clam and stable. Adjectives of sedative-grave expressed solemn.

In the main experiment, 9 subjects listened to the same 8 pieces of classic music and answered the scale and the multiple mood scale (MMS) proposed by Terazaki et al.in 1992. MMS is intended to measure listeners'feeling after they have listened to the music. Same with the preliminary experiment, 5 subscales were constructed. IRT (Item Response Theory) was used to analyze them. The discrimination power and difficulty of each item were calculated and 5 items were deleted of the scale because their discrimination power was low. IRT analysis showed that this scale's discrimination power and difficulty were high, and it would work if it was used to evaluate music, that is what has remarkable characteristic of sedative or uplifting. For testing the reliability of the scale, Cronbach's coefficient alpha was calculated. 5 subscales' Cronbach's alpha coefficient were high, from 0.842 to 0.987. But the retest reliability coefficient of the subscale sedative-grave was low, which meaned more adjectives should be added. For testing the validity of the scale, the correlation coefficient between subscales of the scale and MMS was calculated. It showed that there were significant relations between subscales of the scale and MMS and proved that the scale had a high validity. According to the score of each subscale included in the scale and MMS, 8 pieces of music were classified, which also showed that the music was more favoured when it was more uplifting-positive or sedative-weak and subjects were in a positive mood because of the music. On the other hand , the music was less favoured when it was more sedative-negative and subjects felt tired because of the music.

The scale for evaluating the impression sedative and uplifting of music was constructed, which has 5 subscales and 38 items. It has high reliability and validity, although the subscale sedative-grave needs more adjectives. In future work, the study will be developed to improve

the scale, by adding adjectives, increasing the number of subjects, using it to evaluate other items music. It also will be developed to clarify the relationship between the taste in music, the impression of music, and the emotional response to music by studying on the difference of subjects.