Exaggeration or expressiveness:

An empirical study on the effect of musicians' facial expressions on listeners' perceived emotions

Research proposal

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Introduction

There is substantial scientific evidence and everyday experiences that confirm the strong relationship between music and emotions. More importantly, studies have suggested that music is able to elicit many kinds of emotions, both basic and complex emotions, including happiness, sadness, nostalgia, calmness, etc. Emotions are not only crucial in music listening experiences, but they also play an irreplaceable role in performing music, because communicating emotions is one of the most important goals of performing musicians. Performers achieve the expressiveness of the music mainly through the effects of musical elements such as dynamics, tempo, and articulation. When musicians are performing, many of them also use their body movements to communicate the intended emotions.

With the development of technology, people can watch performance videos online. Interestingly, people tend to like performances where the musicians with more body movements. Therefore, the present research would investigate the relationship between the body movements of performers and the emotions perceived by the listeners. The results will have some implications on whether it's necessary to have body movements in order to be musically expressive. To study this, a laboratory experiment will be conducted.

Background and Significance

Previous research has provided a large amount of evidence in the field of both music and emotions and expressive performances. However, only a few studies focused on both listeners' perceived emotions and expressive performance. The present study will be focusing on the facial expressions of professional pianists because the facial expressions of pianists are easier to capture

compared to other instruments. Therefore, the purpose of the research is to investigate the effect of pianists' facial expressions on listeners' perceived emotions. The key question to answer is "does more facial expressions of the pianists evoke higher intensity of listeners' perceived emotions?". Previous studies have suggested that listeners are able to identify emotions in music and rate the intensity of the emotions and that musicians can convey specific emotions using body movements. Therefore, a positive correlation between pianists' facial expressions and the perceived intensity of emotions is expected.

Review of Prior Studies and Literature

Music and emotion have been a popular topic in the field of music cognition and confirmed that music is able to elicit emotions both cognitively and physiologically (Krumhansl, 1997). She presented six excerpts from classical music. One group of participants indicated the degree of sadness, fear, happiness, and tension they were experiencing as they listened. The other group listened to the same pieces while their physiological responses were recorded. The results showed that not only the listeners' reports of emotional responses to music are consistent, but music also produces physiological changes that correspond to the type of musical emotion. In other words, music does seem to be inducing the actual experience of emotion. In Sloboda (1992), an empirical study of autobiographical memories of musical events was cited. This study asked adults to recall any memories from the first 10 years of their lives that involved music in any way. The results turned out that there were many memories involved emotional experiences (Sloboda, 1989a), indicating that listening to music can evoke emotions and be stored in memory for a long time.

Dahl and Friberg (2007) investigated the visual perception of expressiveness in musicians'

body movements and conducted two experiments. In the experiments, one percussionist, one soprano saxophonist, and one bassoonist performed music with different emotional intentions. There were four viewing conditions so that participants can see one part of the performers' bodies. The results indicate that it is possible for a musician to convey specific emotions using body movements only, and the identification of the intended emotion was only slightly influenced by the viewing condition, although in some cases the head was important. The fact that the researchers replicated the study with different instruments and participants makes the results of the study valid and reliable. However, the instrument choice lowers the generalizability of the results. For people who don't have musical training, these instruments are unfamiliar, and would be possible that they were not able to identify the emotions through body movements only. Therefore, the present study chooses the piano as the target instrument. Thompson et al. (2005) examined the extent to which visual and aural aspects of music are integrated into the musical experience. The study consists of three parts: proposing a model of conception and experience of music, analysis of two performances, and reporting empirical findings on 'multimedial' and 'multimodal' musical experiences. The results suggest that visual aspects of performance reliably affect perceptions of musical structure and affective interpretations of music. Both studies on performers have shown that body movements can communicate emotions through music.

Research measuring the emotion when listening to music usually has two main approaches, either by collecting free responses or conducting lab experiments. In the present study, conducting lab experiments is selected because the intensity of performers' facial expressions, as an independent variable, is manipulated, and random group assignment will also be involved. The

design of the experiment will be simpler than previous studies but maintain the level of effectiveness.

Aims and Research Questions

The purpose of this present study is to determine whether pianists' facial expressions when performing would affect the intensity of the listener's perceived emotions. In order to test if there is a difference in recording and live performance, two separate experiments will be conducted. The experiments also aim to test the difference between musicians and non-musicians, because there is a strong association between formal musical training with altered cognitive and affective processing of musically expressed emotions (Park et al., 2014). Therefore, there will be musicians and non-musicians in both experiments.

Research Design & Methods

Participants

The study will recruit 40 volunteer participants from Oberlin College and Conservatory. By using the convenience sampling technique, both non-musicians and musicians will be easily found. We expect the age of the participants is around 20. For musicians, they should have at least five years of formal classical music training (i.e. taking private lessons on musical instruments or vocal singers). Participants with no formal music training are classified as non-musicians.

Experiment 1: Video recording condition

a) Stimuli

The Chopin Etude op. 25 no. 12 is chosen as the musical stimuli because of its short length and strong emotional passages. One professional pianist will be invited to record the video

in one of the recital halls in the Oberlin Conservatory. The pianist will be asked to play the music twice, one with more facial expressions, and one with fewer facial expressions. The camera will be primarily filming the pianist's face and normal angles like hands and a full scene.

b) Procedure

20 participants, both musicians and non-musicians, will watch and listen to the recordings. To eliminate the order-effect bias, some participants will watch the more expressions video first, then the fewer expressions video. The order is reversed for other participants. After watching videos, they will listen to one of the recordings with only the audio to act as a control condition. After each video, participants will be asked to rate the intensity of emotional arousal on a Likert scale ranging from 1 (not emotional) to 5 (extremely emotional).

Experiment 2: Live performance condition

a) Stimuli

The same piece of music is used in this condition. The recording setting is also the same as Experiment 1. During the experiment sessions, the pianist will play the piece twice, one with more facial expressions, and one with fewer facial expressions.

b) Procedure

The other 20 participants will listen to the recital together. They will be asked to rate the intensity of emotional arousal on a Likert scale ranging from 1 (not emotional) to 5 (extremely emotional).

Implications and Contribution to Knowledge

The results of the present study will give insight into the effect of pianists' facial expressions on listeners' emotional responses. Overall, we expect that participants would have a higher intensity of perceived emotion when watching the performance with more facial expressions. In the same condition, participants with musical training are able to perceive the emotions more accurately than the participants without musical training. The ratings from Experiment 1 are expected to be more accurate than the ratings from Experiment 2 because participants can see the facial expressions more clearly from the video recording compared to the live performances. Since there are fewer manipulations over the variables in Experiment 2, future studies need to avoid the possible influences of extraneous variables. Moreover, since emotions in music tend to be short-lived (Thompson et al., 2005), future studies should record participants' moment-to-moment emotional responses to the music.

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