

The Embodied Effect of Facial Expressions on Pianists' Performance Interpretation

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ABSTRACT

Background

The notion that body gestures and facial expressions could influence thinking and emotions has gained consistent empirical and theoretical support (McNeill, 2005, Neidenthal, 2007). Yet, growing interest in embodied music cognition notwithstanding, few studies have examined such effects in a musical context. In particular, while performers' facial expressions have been shown to reliably convey aspects of musical expression and structure to listeners (Thompson et al, 2005, 2007), no research has yet examined how performers' interpretation *itself* is influenced by their own facial expressions.

Aims

We investigate whether performers' facial expressions - in particular, a facilitated or inhibited smile - affect performance parameters (e.g., tempo, dynamics, articulation) and perceived performance expression.

Method

This experiment adapts a well-known embodied cognition paradigm to a musical setting (Strack, Martin, & Stepper, 1988). In a 2x2x3 within-participant design held in two sessions, 16 professional pianists played two musical miniatures lasting approximately 20 seconds each, composed specifically for this study. Each piece was played in a Major and Minor version. The pieces were conventionally notated, but lacked tempo, dynamics and articulation markings; performers were instructed to make use of these expressive dimensions as they wished. In two embodied conditions, participants (who were told the aim of the experiment is the development of a prototype of a portable, mouth-held physiological monitoring device for musicians), were asked to hold a wooden stick in their mouth in ways that either facilitated or inhibited smile-like expression. In the control condition, participants played with nothing in their mouth. Performances were audio recorded and analyzed, focusing on quantifiable parameters associated with valence or intensity in music, such as tempo (mean, SD), note duration (articulation), and intensity (mean, SD). Both participants and 15 independent referees rated performances on evaluative and expressive scales. A distracter task was given between performances.

Results

Data collection and analysis is still underway. Results will be presented at the conference. We hypothesize that the embodied conditions will affect both performance and its evaluation, such that the "smiling" condition, for instance, will be associated with faster tempi and staccato articulations, and evaluated by both participants and referees as happier and more likeable.

Conclusions

This is the first empirical examination of the effects of facial expression on musical performance. The bodily and emotional aspects of performance are suggested to influence each other bi-directionally. Furthermore, by examining whether the embodied effect is transitive (i.e., conveyed from performer to listener), this study sheds light on the complex performer-performance-audience relationship, thus investigating basic aspects of musicking shared by different musical activities such as listening and performance.

Keywords

Embodiment, performance expression, tempo, dynamics, articulation, facial expression

REFERENCES

- McNeill, D. (2005). *Gesture and Thought*. Chicago: University of Chicago Press.
- Niedenthal, P.M. (May 18, 2007). Embodying emotion. *Science*, 316, 1002-1005
- Strack, F., Martin, L. & Stepper, S. (1988). Inhibiting and facilitating conditions of the human smile: A nonobtrusive test of the facial feedback hypothesis. *Journal of Personality and Social Psychology*, 54, 768-777.
- Thompson, W. F., Graham, P., & Russo, F. A. (2005). Seeing music performance: Visual influences on perception and experience. *Semiotica*, 156, 203-227.
- Thompson, W. F., Russo, F. A. (2007). Facing the Music. *Psychological Science September 2007 vol. 18 no. 9, 756-757*.