

Interpersonal influence of nonverbal body-movement interaction in an ensemble situation

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ABSTRACT

Background

Enhancing interpersonal relationships is considered to be an important function of musical communication, especially with regard to collective musical activity such as ensemble performances. While this interpersonal effect that observed within collective musical activity has been taken up in the field of ethnomusicology, it seems that little psychological study has focused on it.

Music may serve this function by affording participants the opportunity to interact nonverbally, as well as by its acoustical properties. If so, the nature of the nonverbal channels contributing to the development of interpersonal relationships, often observed in everyday life, may be one of the factors underpinning relationship-enhancing function of music mentioned above.

Aim

The present study aimed to investigate whether nonverbal communication has interpersonal effectiveness in an ensemble situation. The influence of nonverbal interaction on the development of dyadic rapport was examined through an isochronous interpersonal synchronization task as a quite simple ensemble situation. Specifically, body movement was addressed, since it is a typical nonverbal channel used in ensemble performance. Two participants executed a synchronization task under a situation in which all visual cues other than body movement were excluded in order to eliminate their confounding. Ensemble coordination, body movement during the task, and self-report of rapport rating scale were measured, and the relationships among them were analyzed by means of structural equation modeling (SEM).

Method

Eight unacquainted pairs of participants played isochronous patterns together on the electronic drums, synchronizing them as well as possible. Participants could see only each other's physical movements, by means of a point-light display in real-time. Five trials were completed; each trial lasted one minute. The following three measurements were carried out: a) ensemble coordination, computed in terms of tapping asynchronies based on audio data; b) explicitness and synchrony of body movements in dyads, measured from time-serial body-movement data analyzed by video-based motion-analysis software, since these features of movement were considered an important interactional pattern for the interpersonal function of this nonverbal channel; and c) participants' interaction rating, measured with a modified version of the rapport scale used by Bernieri, et al. (1996). The rapport scale used in this study consisted of original 18 items

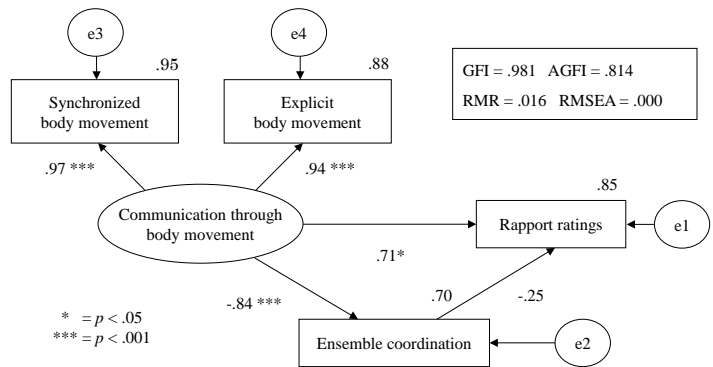


Figure 1. SEM model of effects of communication through body movement in ensemble dyads.

and additional 2 items that were considered to characterize the experience through collective musical activity (“sense of oneness” and “mutual feeling”).

Results

SEM results are shown in Figure 1. Results revealed that degree of communication through body movement that increased explicit and synchronized movement of dyads contributed to ensemble coordination. Ensemble coordination had no significant effect on interaction rapport rating. Most remarkable of all the results, the degree of communication through body movement showed a positive direct effect on the interaction ratings.

Conclusions

The results obtained in this study suggest that the degree of communication through body movement directly influences the rapport of participants in an ensemble music activity, measured in terms of interaction ratings. It may not be easy to generalize these findings, due to the simplified ensemble condition; however, it is significant that the possibility was empirically demonstrated that nonverbal communication in a musical ensemble situation may have an interpersonal function similar to its function in everyday life.

Keywords

Musical communication, Ensemble performance, Nonverbal communication, Body movement, Interpersonal effects

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