

# FACTORS WHICH MAY AFFECT MUSICIANS' ABILITY TO SYNCHRONIZE THEIR PERFORMANCE WITH CONDUCTORS' TEMPORAL GESTURES

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## Background

In order to achieve a temporally coherent performance, musicians playing under a conductor's direction each have to coordinate their individual performance with the physical motions produced by the conductor. This involves being able to recognize which features of these motions convey the pulse of the music, and synchronize their actions as accurately as possible. Previous research suggests that people are able to achieve a high level of synchronization between their movements and those of another person, but that the consistency of this synchronization depends upon a number of factors, such as the physical characteristics of the movements, and an individual's experience at such a task.

## Aims

The aims of this paper are as follows. Firstly, to investigate how accurately different groups of people are able to synchronize with a variety of conductors' temporal gestures. And secondly, to look at how differences in synchronization consistency between these groups might be explained.

## Method

Participants watched point-light representations of conductors' time-beating gestures, and were required to tap in time with the perceived pulse. The conductor was viewed either from the front, from the side, or rotated 90 degrees about the z axis to create a novel stimulus. Participants also completed a questionnaire designed to elicit relevant background information that was used to classify them into different groups, and from which a number of independent measures were generated.

## Results

Results, based on a number of statistical procedures, will be presented which show that synchronization consistency depends upon factors such as an individual's musical training and experience, and the characteristics of the different gestures.

## Conclusions

Conductors might benefit from taking into consideration the physical characteristics of the gestures they use, the experience-related characteristics of the ensemble being conducted, and the position of members within that ensemble, when determining the response that their gestures will produce.