

Combining eye-tracking and motion capture to study human bodily micromotion in music perception

In order to understand how we perceive music, we should always consider that this process starts in our bodies being exposed to sound. Thus, the cognitive processing of sound cannot be treated as separate from the functioning of the body. During the last decades there has been a growing focus on embodied music cognition, and the role of the human body in both perception and production of music has been widely studied. However, not much research has been devoted to what we might call “micromotion” of the human body in the musical context – the tiniest, often involuntary and unconscious movements that occur during music listening. The human body is never completely still as there are many physiological processes that induce small-scale movement. The question, then, is whether such micromotion is altered when we are exposed to music? Here I would like to present my design of a set of small experiments that will shed some light on how human micromotion is influenced by musical sound. Methodologically, I will use a combination of motion capture and portable eye-tracking glasses. Each experiment will be designed to test a different subject, such as the differences between listening to music via headphones and via loudspeakers or the importance of the low-frequency region (bass sound) in inducing body movement. The aim of these small and exploratory studies will be to understand more about the effects of musical sound on human micromotion in particular and music cognition in general.