Music and Movement Synchronization in People with Dementia

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Sensorimotor synchronization to music in patients with dementia (PWD) seems to induce pleasure and nonverbal communication. This effect could explain the efficacy of music-based interventions on well-being and emotional state. However, very little is known about the impact of auditory and human contexts on synchronization in PWD. For this purpose, tapping in synchronization to music and metronomic sequences in interaction with an experimenter who was either physically or virtually (video) present was recorded in a group of 34 PWD. As predicted, responses were more accurate and consistent with metronomic than with music sequences and in presence of a real rather than of a virtual person. Moreover, there was an interaction between auditory and human variables. Whereas the manipulation of human context did not affect synchronization to metronomic sequences, synchronization to music improved in presence of a real as compared to a virtual person. These findings suggest that the physical presence of another person is more efficient than a video presentation to boost synchronization to music highlighting the importance of inter-personal communication during musical interventions in PWD.