Brains of frequent dance spectators exhibit motor mirroring while watching familiar dance

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Experienced ballet spectators with no physical expertise in ballet showed enhanced muscle-specific motor responses when watching live ballet, according to a Mar. 21 report in the open access journal *PLoS ONE*.

This result when watching such a formal dance as ballet is striking in comparison to the similar enhanced response the authors found in empathic observers when watching an Indian dance rich in hand gestures . This is important because it shows that motor expertise in the movements observed is not required to have enhanced neural motor responses when just watching dance performances.

The authors suggest that spectators covertly simulate the dance movements for styles that they regularly watch, causing the increased corticospinal excitability.

The researchers, led by Corinne Jola of the University of Surrey, as part of the Watching Dance Project funded by the UK Arts and Humanities Research Council, found that the enhanced neural response required a precise match between the type of dance a viewer knew well and the type currently being viewed. Specifically, frequent ballet spectators responded most strongly to ballet, and Indian spectators to Indian dance specific movements, if they scored high on cognitive empathy (tendency to fantasize). None of the study participants had received any dance training, so it was significant that their neural motor responses were

modulated just by their viewing experience.

More information: Jola C, Abedian-Amiri A, Kuppuswamy A, Pollick FE, Grosbras M-H (2012) Motor Simulation without Motor Expertise: Enhanced Corticospinal Excitability in Visually Experienced Dance Spectators. *PLoS ONE* 7(3): e33343. doi:10.1371/journal.pone.0033343