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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Permalink

<https://escholarship.org/uc/item/3bp17382>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 36(36)

ISSN

1069-7977

Authors

Szary, Janelle

Chiu, Eric

Balasubramaniam, Ramesh

Publication Date

2014

Peer reviewed

Tap It Out: Exploring the Role of Crossmodal Feedback on Rhythmic Sequence Production

Janelle Szary

University of California, Merced

Eric Chiu

University of California, Merced

Ramesh Balasubramaniam

University of California, Merced

Abstract: Most everyday actions are guided by multisensory input, which bestows considerable behavioral advantages. For instance, when tapping in time to an external event (such as a metronome) one receives both tactile feedback, via contact of the effector with the contact surface, and auditory feedback, from the event itself. Previous findings demonstrate that if tactile feedback is removed when tapping in time to an external metronome, variance of timing error increases (Studenka, Zelaznik, & Balasubramaniam, 2012). The present study investigates the role of acoustic feedback on rhythmic sequence production. Participants move their dominant hand in the sagittal plane while their motion is recorded in 3D. They receive either auditory feedback, generated when their hand crosses a virtual surface, or receive no feedback. We discuss the effects of the absence of audio feedback on the variance of timing errors, and in the context of rhythmic coordination.