

Friday, August 6<sup>th</sup>, 11:00 – 12:00

## Two Types of Anticipation in Synchronization Tapping

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The time perception mechanism in anticipatory timing control was investigated in a synchronization tapping task. An especially negative asynchrony phenomenon in which the tap onset precedes the stimulus onset was used as an anticipatory response. In this experiment, to clarify the effects of higher brain functions, such as attention, a dual-task method was applied and a word memory task was used as a secondary task. The results revealed two types of anticipatory mechanisms from the standpoint of attentional resources involved in time perception. One is the anticipatory tapping that is influenced by attention and seen in the interstimulus-onset interval (ISI) range of 1800 to 3600 ms. In this region, the magnitude of synchronization error (SE) between tap onset and stimulus onset was scaled by the ISI. The other is the automatic anticipation that is not affected by attention and is seen in the 450 to 1500 ms range. SE in this region was constant and independent of the ISI. Accordingly, this anticipatory timing mechanism in synchronous tapping is thought to be a dual process including the attention processing of temporal information and the embodied automatic anticipation.

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