# The embodied experience of time: modulations of mindfulness meditation

### **ABSTRACT**:

Experienced meditators typically report that they experience time slowing down in meditation practice as well as in everyday life. Conceptually this phenomenon may be understood through functional states of mindfulness, i.e. by more efficient attention regulation and enhanced body awareness.

In this cross-sectional study, we investigated whether 42 experienced mindfulness meditators (on average 10 years of experience) showed differences in the experience of time as compared to 42 controls without any meditation experience. In a subgroup of 22 meditators and matched controls heart rate and skin conductance during duration reproduction tasks were assessed. Participants also performed in a heart-beat perception task.

While meditators experienced a significantly slower passage of time and felt that past time intervals were expanded, no differences in duration estimates in the psychophysical tasks were detected. Psychophysiological results revealed hardly any differences between meditators and controls with respect to psychophysiological correlates of duration reproduction performance. Correlational analyses revealed positive associations between heart-beat perception scores and the slope of the heart-rate with duration reproduction accuracy across all subjects.

Overall, although no intergroup differences in psychophysical tasks and hardly any in psychophysiological indices were detected, the reported findings demonstrate a close association between mindfulness meditation and the subjective feeling of the passage of time captured by psychometric instruments. Moreover, the results across all subjects support the notion that bodily processes and the experience of time are related.

#### **Keywords**

Time perception, mindfulness meditation, body awareness, heart-beat

# **Published Work:**

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