Psych-Talks

Department of Psychology & Salzburger Gesellschaft für Psychologie

Talk on Tuesday, 7. March 2023
in HS 424
Start: 10:15 c.t. (till 11.30)
The talk will be presented in English

Challenges of embodied decision making – Movement variability as a window into developmental changes of motor cognition

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In everyday life situations, motor actions usually have to be planned and performed under uncertain conditions e.g., with regard to the probability with which the different options will be successful or with limited availability of sensory information1. Previous research has provided empirical evidence that the human motor system accounts for this uncertainty by coordinating the abundant effector degrees of freedom to allow flexibility in movement execution (e.g., to adjust movement plans) but also to grant stability in the movement outcome2,3. Consequently, observed changes in movement coordination, quantified by analyzing the time course of movement variability, have previously been explained as adjustments of the sensorimotor system to uncertain planning conditions4. In this context, empirical evidence also suggests different movement coordination patterns in older than younger adults5. A theoretical explanation for this observation is still missing. The developmental theory of embodied decision-making, however, would potentially offer such a framework6,7.

In this talk I will present recent research on the topic, including studies targeting questions, such as: Do strategic changes in movement coordination, assessed through the analysis of movement variability, reflect dynamics during the embodied decision-making processes? As well as, can age-related differences in movement coordination be explained by age-related decline in cognitive functioning affecting embodied decision-making?

Advancing research in this direction becomes of potential relevance when changes in movement coordination in decreased outcome-stability, in the worst case resulting in the failure of the motor action, with potential effects on the self-dependency of living and with significant consequences especially for older adults.

References:

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