



Datum: 18.12.2013

Ort: Binzmühlestrasse 14, Raum BIN 3.D.27

Uhrzeit: 12.30 –13.30Uhr

Titel: Does brain-training make you smarter? Evidence from working memory training studies

Referentin: Claudia von Bastian

Abstract:

Can cognitive abilities such as reasoning be improved through cognitive training? This question is still highly controversial, with prior studies providing contradictory findings. We conducted a series of working memory (WM) training studies to investigate factors potentially influencing the mechanisms of transfer and thus the success of training interventions. In Study 1, we could show that training different functional aspects of WM yields distinct transfer effects. Following the rationale that transfer is driven by functional overlap between training and transfer tasks, training multiple functional aspects at once could, however, lead to even broader transfer. This hypothesis was investigated in Study 2 within an age-comparative setting including younger and older adults. Notwithstanding observing large training effects, there was still no transfer to reasoning in neither age group. Another factor potentially contributing to training and transfer effects is to the challenging nature of the training regimen. In Study 3, we tested the common assumption that, in order to be most effective, training should be adaptive (i.e., task difficulty is adjusted automatically to individual performance). Surprisingly, neither training nor transfer effects were modulated by the training procedure, indicating that the role of adaptivity might have been overestimated in previous training research. Yet, we also observed no transfer to reasoning in this study. We therefore conclude that although WM performance can be improved to a great extent, it still remains unclear whether these improvements are due to mere enhancement of efficiency or truly reflect expansion of capacity.