

ABSTRACT FOR POSTER PRESENTATION

Title: Medial prefrontal cortex – dorsal anterior cingulate cortex connectivity during behavior selection without an objective correct answer

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Abstract: Life choices (e.g. occupational choice) often include situations with two or more possible correct answers, thereby putting us in a situation of conflict. Recent reports have described that the evaluation of conflict might be crucially mediated by neural activity in the dorsal anterior cingulate cortex (dACC), although the reduction of conflict might rather be associated with neural activity in the medial prefrontal cortex (MPFC). What remains unclear is whether these regions mutually interact, thereby raising the question of their functional connectivity during conflict situations. Using psychophysiological interaction (PPI) analyses of functional magnetic resonance imaging (fMRI) data, this study shows that the dACC co-varied significantly higher with the MPFC during an occupational choice task with two possible correct answers when compared to the control task: a word-length task with one possible correct answer (Figure 1). This result suggests that the MPFC has a functional relation with dACC, especially in conflict situations where there is no objective correct answer. Taken together, this lends support to the assumption that the MPFC might be crucial in biasing the decision, thereby reducing conflict.

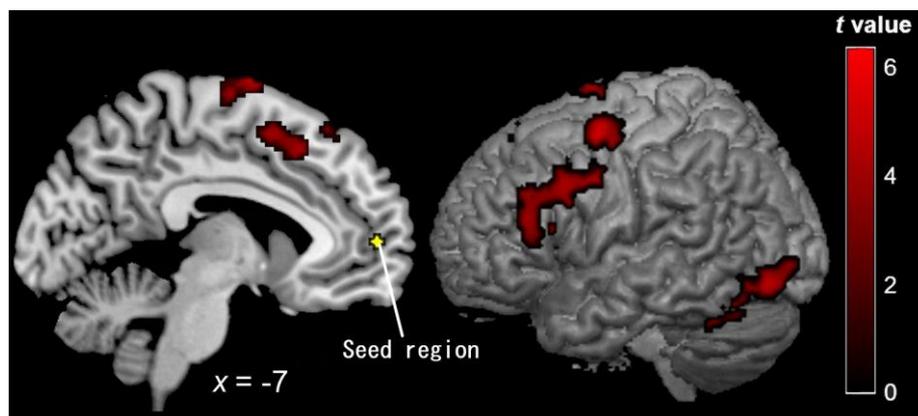


Figure 1. Regions showing increased connectivity with the medial prefrontal cortex (MPFC) during occupational choice (results of psychophysiological interaction (PPI) analysis) and the seed region within MPFC.

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