

SELF-MONITORING AND NEURAL CORRELATED BRAIN STRUCTURES

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Abstract

OBJECTIVE: Self-monitoring is a crucial component of human empathy with regard to the formation and repair of social relations. Several studies have brought to light possible neural substrates associated with self-monitoring but the information that they have provided is inconclusive. We therefore studied a large group of demented patients to assess the crucial brain structures for the self-monitoring function.

METHODS: We screened 77 patients with dementia of various types by means of Voxel-based Morphometry (VBM) analysis to assess possible volume reduction in the brain structures and by means of subscales of the Revised Self-Monitoring Scale (RSMS) to estimate the decrease of socio-emotional expressiveness and modification of self-presentation. Regression analysis is employed to investigate the correlation between gray matter (GM) loss and lack of self-monitoring.

RESULTS: The socio-emotional expressiveness score was associated with decreased grey matter volume in the right olfactory cortex and right insula while self-presentation scores associated with grey matter volume reduction in the olfactory cortex bilaterally, right insula, right temporal pole, right inferior frontal gyrus, left superior frontal gyrus and left rectus gyrus.

CONCLUSIONS: Our results suggest that demented patients present decreased ability of self-monitoring process probably due to impaired insula and OFC and their disconnection from structures of the salience network.