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THOUGHT DISORDER: A LEFT LATERALISED BREAKDOWN OF THE LANGUAGE NETWORK

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Introduction: Structural and functional deviations in schizophrenic patients with formal thought disorder (FTD) point towards a dysfunction within left sided language network.

Objectives: Independent component analysis (ICA), a new approach to fMRI analysis, enables to target the question of a network dysfunction directly. Using this method in healthy controls it was possible to identify the language networks separately for the left and the right hemispheres. In the present study we use ICA analysis to examine changes of the language network separate for each hemisphere in relation to the severity of FTD.

Aims: We hypothesize increasing disintegration with increasing severity of FTD only in the left sided language network while the right language network should remain unaffected.

Methods: We investigated 16 schizophrenic patients with different severity of FTD and matched healthy controls using ICA decomposition of the BOLD signal. The spatial similarity of the individual language networks was correlated to the severity of FTD.

Results: The integrity of the left language network decrease with increasing severity of FTD ($r = -0.79$, $p < 0.01$), while the integrity of the right language network show no significant correlation to the severity of FTD.

Conclusion: For the first time the isolated breakdown of the left sided language network was linked specifically to schizophrenic FTD. This result unites older mainly left hemispheric findings of structural and functional abnormalities in schizophrenic FTD.