



Bupropion and Theory of Mind in FTD: case series

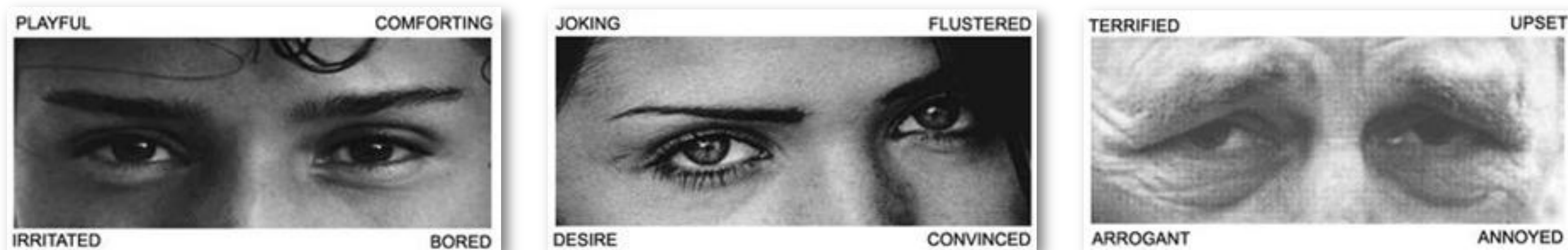


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Introduction: “**Theory of Mind**” (ToM), is a specific cognitive ability to understand others as intentional agents, that is, to interpret their thought processes in terms of theoretical concepts of intentional states such as beliefs and desires. Its neural basis are only partly understood, however the “orbitofrontal” and “cingulate” frontostriatal loops and the mesolimbic **dopaminergic system** that modulates their function have been implicated in theory of mind (ToM) in different studies ¹. A possible role of the dopaminergic system in theory of mind has also been suggested by genetic studies showing a contribution of DA related COMT gene on ToM performance ², however to date direct pharmacological evidence of a role for dopamine in ToM is lacking.



Methods: in this proof-of-concept pilot study, a convenience sample of patients with frontotemporal dementia (n=10) and ToM deficit (score in reading the mind in the eyes task (RMET) below 2 std compared to normative data), were recruited and randomized to Escitalopram 20 mg (n=5) and to Bupropion 300 mg (n=5). Patients were assessed at baseline, weeks 12 and weeks 24 and the treatment groups switched at week 12. All subjects also completed the Frontal Assessment Battery (FAB) at all time points.

Results: All FTD subjects treated with Bupropion showed an increase at least of 0.5 standard deviations in RMET scores, while there was no effect of Escitalopram therapy on ToM skills. There was no difference in RMET scores between baseline and week 24 among those subjects which were switched from Bupropion to Escitalopram at week 12. There were no significant changes in FAB scores

Discussion: this proof-of-concept study suggest that ToM skills are modulated by the noradrenergic and dopaminergic systems in FTD. Future studies are needed to confirm these findings in a larger cohort to disentangle noradrenergic and dopaminergic contributions.

References: 1. Péron J et al, Neuropsychologia. 2009 Jan;47(2):406-14.
2. Haiwei Xia et al, PLOS ONE 2012