P02-324

INCREASED VISUAL-VENTRAL PREFRONTAL CORTICAL COUPLING DURING FACIAL AFFECT RECOGNITION

D. Dima[1], K.E. Stephan[2,3], J.P. Roiser[4], S. Frangou[1]
[1]Department of Psychosis Studies, Institute of Psychiatry, King's College London, London, UK, [2]Laboratory for Social and Neural Systems Research, Institute for Empirical Research in Economics, University of Zurich, Zurich, Switzerland, [3]Wellcome Trust Centre for Neuroimaging, Institute of Neurology, University College London, [4]Institute of Cognitive Neuroscience, University College London, London, UK

Introduction: Emotional regulation is a crucial aspect of adaptive behaviour and social interaction, and is often disrupted in a range of psychiatric disorders.
Objectives: In the past decade, neuroimaging studies have identified key components of the neural networks that underpin emotional processing during facial affect recognition. Although these networks are extremely interconnected, current evidence points to the ventral prefrontal cortex (VPFC) as having a pivotal role in emotional regulation.
Aims: We were particularly interested in specifying the functional interrelationships of VPFC with component network regions and in exploring potential modulation by the valence of the facial affect.
Methods: Functional magnetic resonance imaging (fMRI) data were obtained from 40 healthy individuals during a facial affect recognition task involving fearful, sad and angry facial expressions. Within the networks engaged by the task, we used Dynamic Causal Modelling (DCM) to measure effective connectivity followed by Bayesian Model Selection to identify the model best model fitting our data and Bayesian Model Averaging to analyze the endogenous connections and the modulatory influence of affect.
Results: Processing of all three facial expressions engaged the visual cortex, fusiform gyrus, amygdala and VPFC. DCM analysis showed that the connection between the visual cortex and the VPFC plays a more important role in the recognition of facial emotions than other regions.
Conclusions: We provide evidence for the central role of a valence independent increase in visual cortical and VPFC coupling during the processing of facial affect.

https://doi.org/10.1016/S0924-9338(11)72625-6 Published online by Cambridge University Press