Face emotion processing deficits in schizophrenia: identification and remediation utilising visual scanpath technology

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STATEMENT OF ORIGINALITY

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library**, being made available for loan and photocopying subject to the provisions of the Copyright Act 1968.

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Dr Carmel Loughland

Date:


Campbell, LE; Cruickshank, L; Stevens, AF; Morris, RG; McCabe, KL; Murphy, DGM; Murphy, KC. (2011) Is theory of mind related to social dysfunction and emotional problems in 22q11.2 deletion syndrome (Velocardio-facial syndrome)? Journal of Neurodevelopmental Disorders. 3(2):152-161.


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SYNOPSIS

Social cognition deficits in schizophrenia are now widely accepted as both a core feature of the condition and an area lacking effective treatment regimes. The aim of this thesis was to explore novel strategies for the remediation of one aspect of social cognition, namely face emotion processing. We utilised visual scanpath technology to first characterise the nature and extent of face emotion processing dysfunction in a schizophrenia sample (Chapter 2). In this study we sought to determine whether the visual scanpath deficits observed to face emotion stimuli generalise to complex, socially relevant stimuli that are matched on component features and response dimensions. The data presented in Chapter 2 showed support for the generality of information processing dysfunction in schizophrenia to complex visual stimuli. After establishing the generality of higher order object recognition dysfunction, we examined in Chapter 3 whether generalised scanpath impairment is likely to be associated with other measures of basic visual processing. The findings from this investigation showed that measures of smooth pursuit eye movement (SPEM) and scanpath behaviour during recognition tasks were significantly associated. The findings from these empirical studies guided the development of a novel remediation strategy targeting face emotion recognition. The treatment utilised visual scanpath technology to provide biofeedback designed to enhance the quality and sampling of visual information. This strategy was compared to an existing face emotion remediation tool. The data from the study described in Chapter 4 provides preliminary evidence that computerised biofeedback-based
training markedly improves recognition and information processing functions associated with face emotion perception in schizophrenia. In conclusion, this thesis provides the first evidence of the utility of both “top-down” and “bottom-up” approaches to the remediation of social cognition deficits in schizophrenia.
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