

Exploratory analyses of emotion recognition difficulties in children with acquired brain injury

TRAINEE NAME: **Caroline Shinner**

SUPERVISORS:
PRIMARY: **Prof. Huw Williams (University of Exeter)**

FIELD COLLABORATOR: **Dr Ingram Wright (Consultant Paediatric Neuropsychologist)**

TARGET JOURNAL: ***Journal of the International Neuropsychological Society***

WORD COUNT: **7999 (manuscript)**
3285 (appendices)

DATE OF SUBMISSION: **6 May 2011**

Work has been submitted in partial fulfilment of requirements for the Doctorate in Clinical and Community Psychology degree.

CONTENTS

ABSTRACT	3
INTRODUCTION	4
METHOD	9
PARTICIPANTS.....	9
PROCEDURE	11
MEASURES.....	12
RESULTS	15
DEMOGRAPHIC COMPARISONS	16
ABI AND NON-ABI GROUP COMPARISONS OF TASK PERFORMANCE	16
EFFECT OF TIMING OF ABI ON TASK PERFORMANCE	19
FOCAL ABI AND DIFFUSE/MULTI-FOCAL ABI GROUP COMPARISONS OF TASK PERFORMANCE	20
PREDICTORS OF SOCIO-EMOTIONAL BEHAVIOUR DIFFICULTIES IN CHILDREN WITH ABI	22
DISCUSSION	24
REFERENCES	29
APPENDICES	34
APPENDIX 1: EXPANDED INTRODUCTION.....	34
<i>Appendix 1a: Further information regarding emotion recognition difficulties in adults with ABI</i>	34
<i>Appendix 1b: Further information regarding model of dissociable empathy systems</i>	35
<i>Appendix 1c: Further information regarding normal development of emotion recognition skills</i>	36
<i>Appendix 1d: Further information regarding TBI and emotion recognition</i>	37
<i>Appendix 1e: Further information regarding impact of cranio-spinal radiation therapy</i>	38
<i>Appendix 1f: Further information regarding emotion recognition related to epilepsy</i>	39
APPENDIX 2: EXPANDED METHOD.....	40
<i>Appendix 2a: Further details of power analysis</i>	40
<i>Appendix 2b: NHS Trust Audit Department application form</i>	42
<i>Appendix 2c: NHS Trust Audit Department agreement</i>	48
<i>Appendix 2d: Letter of ethical approval from University of Exeter</i>	49
<i>Appendix 2e: Consent form</i>	50
<i>Appendix 2f: Participant information sheet</i>	51
<i>Appendix 2g: Participant data collection form</i>	52
<i>Appendix 2h: Parent-report SDQ</i>	54
<i>Appendix 2i: FAB Identity Discrimination task – sample stimuli</i>	55
<i>Appendix 2j: FAB Select Affect task – sample stimuli</i>	56
<i>Appendix 2k: RMET sample stimuli</i>	57
APPENDIX 3: EXPANDED RESULTS.....	58
<i>Appendix 3a: Tests of normality and homogeneity of variance</i>	58
<i>Appendix 3b: Group demographic comparisons</i>	60
<i>Appendix 3c: ABI v non-ABI comparisons of emotion recognition task performance</i>	62
<i>Appendix 3d: ABI v non-ABI comparisons of cognitive task performance</i>	64
<i>Appendix 3e: ANCOVA for ABI v non-ABI group comparisons</i>	65
<i>Appendix 3f: Regression analyses (cognitive predictors of ABI group performance)</i>	66
<i>Appendix 3g: Correlational analyses of emotion recognition performance</i>	68
<i>Appendix 3h: Early v late ABI group comparisons</i>	69
<i>Appendix 3i: Focal v diffuse/multi-focal group comparisons</i>	70
<i>Appendix 3j: Regression analyses (predictors of SDQ outcomes in ABI group)</i>	72
APPENDIX 4: DISSEMINATION STATEMENT	77
APPENDIX 5: JOURNAL OF THE INTERNATIONAL NEUROPSYCHOLOGICAL SOCIETY INSTRUCTIONS FOR AUTHORS	78

Abstract

Socio-emotional behaviour problems are common in children following acquired brain injury (ABI), and have been linked to an underlying impairment in the ability to recognise emotional expression from other peoples' faces and eyes. This study aimed to extend previous research by exploring the relationships between emotion recognition, cognitive functioning, and nature of neurological injury. As previous research has typically focussed on children with traumatic brain injury, this study included a more representative sample of the types of focal and diffuse/multi-focal ABI seen in routine clinical practice. Exploratory analyses were conducted on the performance of 14 children with ABI compared with 67 non-ABI controls on measures of emotion recognition from faces and eyes. Children with ABI performed significantly worse than children without ABI on both measures. This deficit remained when controlling for cognitive functioning on the faces task, but not on the eyes task. There was no predictive relationship between emotion recognition performance and scores on a measure of socio-emotional behaviour in the ABI group, although relationships between performance on some cognitive measures and socio-emotional outcomes were found. No significant relationships were found between timing or type (focal or diffuse/multi-focal) of ABI, and emotion recognition performance. The findings highlight the presence of emotion recognition difficulties in a group of children not pre-selected for emotion recognition or socio-emotional difficulties, suggesting that emotion recognition difficulties may be more prevalent than previously anticipated. Further research with a larger ABI sample and longitudinal design would be beneficial in clarifying the potential developmental emergence of predictive relationships between emotion recognition and socio-emotional outcomes.

Keywords: Emotion recognition; child; brain injury; social cognition; theory of mind