

## **Seminar 2: Mindreading and Emotion Processes in Autism**

Friday, 9<sup>th</sup> September, 2005

*Glasgow Caledonian University*

George Moore Building, Rooms M-404 & M-402

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09.30 Room M402	Registration/ Coffee. Posters set-up
10.00 Room M404	<b>Elisa Back</b> <i>University of Nottingham</i> Attributing mental states to animated faces in individuals with ASD
10.30 Room M404	<b>Prof. Declan Murphy</b> <i>Institute of Psychiatry, University of London.</i> Autism Spectrum Disorder, symptoms and causes
11.30 Room M402	Coffee break
12.00 –13.00 Room M404	<b>Dr. Sander Begeer</b> <i>Amsterdam Free University, The Netherlands</i> Social and emotional skills and understanding of children with ASD
13.00-14.00 Room 402	Lunch
14.00 Room M404	<b>Dr. Elisabeth Hill</b> <i>Goldsmiths College, University of London</i> Cognitive processing of own emotions in adults with autism and their relatives
15.00 Room M402	<b>Poster session</b>
15.30 Room M404	<u>Discussant:</u> <b>Prof. Peter Mitchell</b> <i>University of Nottingham</i>
16.00 Room 402	Closure of the seminar. Complimentary wine & nibbles

## **Selection of Abstracts**

Please note that these abstracts relate to seminar presentations, rather than to formal publications and, as such, should not be cited without the permission of the author

### **Attributing mental states to animated faces in individuals with autistic spectrum disorders**

Elisa Back

*University of Nottingham*

According to previous research, people with autistic spectrum disorders (ASD) have difficulty attributing mental states to facial expressions, especially when only the eyes are presented. Three experiments were conducted to determine whether it is easier to identify mental states from dynamic rather than static faces and to explore the importance of information from the eyes in 18 children with ASD and 18 matched controls. In Experiment 1 children gained higher accuracy rates when presented with a dynamic than a static face. Children with ASD performed above chance but not as well as matched controls. In Experiment 2 faces appeared on the screen in which certain regions were animated whilst other regions remained static. Importantly, children with ASD performed significantly better when information from the eye region was dynamic than when frozen. Experiment 3 presented the eyes (dynamic and static-apex) in isolation and in context of the whole face. Findings suggest that those with ASD were not inferior to typically developing children in interpreting mental states from the eyes. Evidently, children with ASD find it difficult to attribute mental states to other people's facial expressions, but this is not due to an inability to read information from the eyes.

### **Autism Spectrum Disorder, symptoms and causes**

Declan Murphy

*Institute of Psychiatry, University of London*

The symptoms of autistic spectrum disorder (ASD; including autism and Asperger syndrome) significantly impact on social outcome and health. However, the brain basis of ASD is unknown.

Some people with ASD are reported to have an increase in total brain volume. Also, abnormalities have also been reported in specific brain regions – particularly in frontal, limbic, basal ganglia, and cerebellar areas. However, many prior studies have not been replicated, probably because of the clinical heterogeneity and small samples studied. In addition, it is unlikely that abnormalities in a single brain region explain the whole phenotype of ASD. An alternative approach is to investigate the connectivity of brain *systems* which may underlie abnormal behaviours. Nevertheless very few studies have employed a 'systems' approach, related brain anatomy to symptoms, examined anatomical connectivity, or investigated large homogenous samples.

I will present new data acquired using volumetric MRI, DT-MRI, fMRI, MRS, and SPET. I will demonstrate that people with ASD have abnormalities in the anatomy, function, and connectivity of 'social brain' systems (frontal and limbic regions), and the basal ganglia and cerebellum. Further I will present evidence that these structural and functional differences underpin some of the clinical symptoms typical of the disorder, and that they arise from abnormalities in programmed cell death, and are associated with differences in both glutamatergic and serotonergic function.

## **Social and emotional skills and understanding of children with autism spectrum disorders**

Sander Begeer

*Vrije Universiteit, Amsterdam, The Netherlands*

Children with autism are commonly thought to show substantial deficits in social and emotional domains. In contrast to these stereotypical ideas, normally intelligent or 'high functioning' children with autism spectrum disorders (HFASD) often display a relatively adequate understanding of basic emotions and social-emotional interactions. They seem to be particularly aware of elementary principles and prototypical responses to emotions. In the present series of experiments we examined their more advanced and applied social and emotional abilities. We also looked at factors involved in the actual use of these abilities in daily life situations. Children with HFASD were found to show a surprising similarity to normally developing children in their reasoning about various advanced aspects of social and emotional interactions. However, this similarity may be superficial. Their responses were often more theoretical, while normally developing children relied more on their subjective experiences. Furthermore, their responses were also shown to depend relatively more on context factors. They were particularly triggered by enhancing their motivation, focusing them on the relevance of social emotional information and clarifying the context of such information. These findings refine the impairments of children with HFASD. Their advanced knowledge of various social and emotional situations may be adequate, but to actually behave accordingly, they need directions and support that clarify the context and trigger adequate response patterns.

## **Cognitive Processing of Own Emotions in Adults with Autism and their Relatives**

Elisabeth Hill

*Goldsmiths College, University of London*

Difficulties in the cognitive processing and regulation of emotions including difficulties identifying and describing feelings are assumed to be an integral part of autism spectrum disorder (ASD). Here I will discuss the findings of two studies that directly investigated this issue in adults with ASD and their relatives. In the first study, individuals with ASD were found to be significantly more depressed than those in the control group and their own relatives. Depression was associated with significantly higher levels of emotion dysregulation. In the second study, poor emotion regulation was found to be associated not only with depression, but also with levels of state and trait anxiety as well as with physical and social anhedonia. Clear difficulty in understanding emotions - as well as depression, anxiety and anhedonia - are significant issues for high-functioning adults with autism spectrum disorders. These findings have important implications for clinical research into, and treatment of, the disorder. They are also important for understanding the broader autism phenotype.

## Posters

**C.S. Ames & C. Jarrold,**

*University of Bristol*

A relationship between making inferences from cues and ASD symptomatology? Some preliminary results

**C. J. Ballantyne, M. Nunez & L. Riby**

*Glasgow Caledonian University*

A Cognitive Comparison of Visuo Spatial Abilities of Children with Fragile X Syndrome and Autism

**L. Carroll<sup>1</sup>, J. McCann<sup>1</sup>, S. Peppé<sup>1</sup>, F. Gibbon<sup>1</sup>, A. O'Hare<sup>2&3</sup> & M. Rutherford<sup>2</sup>**

<sup>1</sup>*Queen Margaret University College, Edinburgh,* <sup>2</sup>*Royal Hospital for Sick*

*Children, Edinburgh,* <sup>3</sup>*University of Edinburgh.*

Prosody and Language in Children with Autism

**A.D. Davis**

*University of Stirling*

Context sensitivity, digit ratio and cognitive style: Evidence for an association between cognitive disorganisation in schizophrenia and the autistic phenotype

**E. McGregor**

*University of Edinburgh*

Narrative fluency, theory of mind ability and other aspects of cognitive function in autism

**D.M. Riby, G. Doherty-Sneddon, & V. Bruce**

*University of Stirling*

Susceptibility to the Thatcher Illusion in Autism and Williams syndrome

**H. Stieglitz Ham<sup>a</sup>, M. Corley<sup>b</sup>, G. Rajendran<sup>c</sup>, J. Carletta<sup>d</sup>, A. Bartolo<sup>e</sup>, S.J. Swanson<sup>f</sup>**

*Departments of Psychology<sup>a,b</sup>, Education<sup>c</sup>, and Informatics<sup>d</sup>, University of Edinburgh; Department of Neuroscience, University of Modena and Reggio Emilia<sup>e</sup>; Department of Neurology, Medical College of Wisconsin<sup>f</sup>*

Imitation Deficits in Individuals with High-Functioning Autism: An Analysis of Disordered Gesture and Apraxia

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### **Organising Committee:**

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