

*Scottish Autism Research Group Seminar Series*

**Connecting Neuro-cognitive, Diagnostic & Intervention  
Processes in Autism**

**Tuesday, 14<sup>th</sup> September, 2004**  
Glasgow Caledonian University  
**George Moore Building, Rooms M-404 &M-402**

- 09.30                      Registration/ Coffee  
*Room M402*                Posters set-up
- 10.00                      **Joanne McCann**  
*Room M404*                *Queen Margaret University College, Edinburgh*  
Prosody and its Relationship with Language in Children with High-Functioning Autism
- 10.30                      **Warren Jones** (Workshop leader)  
*Yale University*  
Eye tracking in Autism: A Window into Social Cognition
- 11.30                      Coffee break  
*Room M402*                Poster session –Neurocognitive Processes
- 12.00                      **Simon Webster**  
*Room M404*                *University of Dundee*  
The Development of Gaze Following in Autism
- 12.30 –13.00              Poster Session –Diagnostic Processes  
*Room M402*
- 13.00                      Lunch
- 13.30                      **Pam Heaton**  
*Room M404*                *Goldsmiths College, University of London*  
Music and Savant Abilities in Autism
- 14.30                      **Rita Jordan**  
*University of Birmingham*  
Intervention in Autism
- 15.30                      Coffee break  
*Room M402*                Poster Session – Intervention Processes
- 16.00                      Discussant: **Susan Leekam**  
*University of Durham*
- 16.30                      Closure of the seminar series  
Complimentary Wine & Nibbles
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## 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.

### **Prosody and its Relationship with Language in Children with High-Functioning Autism.**

Joanne McCann<sup>1</sup>, Sue Peppé<sup>1</sup>, Fiona Gibbon<sup>1</sup>, Anne O'Hare<sup>2&3</sup> and Marion Rutherford<sup>3</sup>.  
<sup>1</sup>Queen Margaret University College, <sup>2</sup>Royal Hospital for Sick Children, Edinburgh, <sup>3</sup>Edinburgh University.

In Kanner's original description of autism he noted disordered prosody as a common feature. Despite this, the area has received very little attention and those studies that have addressed prosody in autism have not addressed its relationship to other aspects of communication. This study assessed the prosody and language skills of 31 children with high-functioning autism (HFA) aged 6-13 years and a control group of 72 typically developing children matched for verbal mental age. The children with autism completed a battery of speech, language and non-verbal assessments and a new procedure (PEPS-C) for assessing receptive and expressive prosody.

The children with HFA performed significantly poorer on the assessment of prosody than verbal mental aged matched peers and prosody correlated highly with both receptive and expressive language. The language skills of the children with HFA were very heterogeneous but most of the children had major difficulties in this area. Contrary to previous research, this difficulty was particularly severe for expressive language. We will discuss both the language profiles of children with HFA and the relationship various aspects of language has with prosody. We will also make some suggestions about why prosody might be particularly vulnerable in children with autism by discussing a possible connection with theory

### **Eye-Tracking in Autism as a Window into Social Cognition**

Warren Jones  
*Yale Child Study Center, Yale University  
New Haven, CT USA*

Eye-tracking research can be used to characterize the social phenotype in autism by measuring how individuals with autism visually engage with the social world. The impairments in social interaction and communication that define the disorder are reflected in the way in which individuals with autism visually scan and fixate upon scenes of social interaction. This presentation will describe ongoing eye-tracking research with individuals with autism, beginning with adolescents and young adults, and extending downwards into work with young children and toddlers.

While watching video scenes of naturalistic social interaction, adolescents and young adults with autism exhibited increased fixations on mouth and body areas as well as on inanimate objects. These visual fixations were markedly different from those of typically-developing viewers, who focused preferentially on the eyes of characters. Similar increases in fixations on mouth and object areas were observed in toddlers with autism relative to their typically-developing peers. These analyses of visual fixations reveal basic differences in the manner in which individuals with autism visually engage with scenes of social interaction. At a more detailed level, analyses of visual scanning (of the precise timing and sequence in which an individual looks from one region-of-interest to another) offer a unique window into how individuals with autism search for meaning in the social world. Implications of these results for early diagnosis and for the development of social cognition will be discussed.

## **The development of gaze following in autism**

Simon Webster

*Department of Psychology, University of Dundee*

This presentation gives an overview of a work in progress (a PhD thesis due for submission in November). The presentation follows the structure of the thesis. ①: Gaze following development in autism is reviewed in relation to key issues defined by Leekam. Baron-Cohen's Mindblindness model, which incorporates gaze following, is reviewed in relation to these key issues. ② (and maybe ③): Experimental investigations of the Mindblindness model are reported which reveal that the model does not adequately describe gaze perception in autism. This limitation may reflect the model's inability to account for atypical, successful cognitive development in autism. ④: A neuroconstructivist model of gaze following development in autism is presented (the atypical modularisation model). This model predicts atypical, successful gaze following performance in autism. The model is developmental, with a focus on modularisation and on emotional learning. ⑤: The atypical modularisation model predicts that many children with autism will be competent in gaze following but will perform this skill less accurately than typically developing children. This hypothesis is tested experimentally and some evidence is found to support the hypothesis. Emotional learning is also investigated, but a novel emotional learning task fails to produce meaningful data. ⑥: The atypical modularisation model predicts that gaze following in autism will be developmentally deviant rather than developmentally delayed. Deviance and delay in this skill are investigated within a novel experimental paradigm. The results of this study are currently being analysed. ⑦: Discussion of findings. Any contributions to this discussion will be gratefully accepted!

## **Music and Savant Abilities in Autism**

Pam Heaton

*Goldsmiths College, University of London*

Although autism is diagnosed on the basis of deficits in reciprocal social behaviour, in language development and in the presence of repetitive/stereotypical behaviour, the existence of an uneven profile of abilities, with unusually good skills in some areas has long been noted.

Within the domain of music highly elaborated savant skills have been noted in individuals with autism and Kanner's early account makes reference to exceptional musical memory in some individuals. In this talk, the extent that deficit models of autism can explain the preservation or enhancement of musical skills will be explored.

## **Intervention in Autism**

Rita Jordan

*The School of Education, The University of Birmingham*

This paper looks at the influence of research and theory on interventions in autism from two perspectives: the theoretical and research rationale for interventions, and the research evidence for particular interventions. It starts from the premise that autism is itself a theoretical construct and how the theoretical stance in relation to the nature of autism has influenced both researchers and practitioners. The case is made that autism may suffer from 'premature theorisation' and suggests that more grounded approaches are needed at our current state of knowledge. The all-embracing theoretical explanations of the past are gradually giving way to more localised accounts of particular phenomenology, based in part on the findings of neuroscience but also in relation to more general psychological theories and research. The voice of the researched is also gaining prominence and affecting both the nature of the conceptualisation of autism and the kind of research that is being undertaken. Research in practice has also tended to focus on unanswerable questions and there is a need to see its relation to a broader psychological frame, contributing research as well as receiving and acting on research outcomes.

### **Acknowledgements:**

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