

**Seminar 5: Language, Attention and Memory
in Autism Spectrum Disorders**

Tuesday 12th September, 2006

Department of Psychology, Glasgow Caledonian University

George Moore Building, Rooms M 402 & M 404

- 09.15 Registration - Poster set-up
Room M-402
- 10.00 **Helen Tager-Flusberg**
Room M-404 *School of Medicine, Boston University*
A dual deficit model of language impairments in autism
- 10.45 **Gaia Scerif**
Dept. of Psychology, University of Nottingham
The attentional profile of infants and toddlers with Fragile X: Potential implications for autistic spectrum disorders
- 11.30 Coffee - Posters
Room M-402
- 12.00 **Catherine Ames**
Room M-404 *Dept. of Experimental Psychology, University of Bristol*
Mechanisms underpinning difficulties interpreting cues in ASD: A role for_ attention modulation __
- 12.45 **Melissa Allen Preissler**
Dept. of Psychology, University of Edinburgh
Symbolic representation of pictures and words in children with autism
- 13.30 Lunch - Posters
Room M-402
- 14.30 **Dermot Bowler**
Room M-404 *City University, London*
Memory in autism spectrum disorders: Enduring themes and prospects for the future
- 15.15 **Sally Bigham**
Dept. of Psychology, University of Warwick
Memory, language, and learning in low functioning autism
- 15.45 Coffee- Posters
Room M-402
- 16.15 **Discussant: Prof Jill Boucher**
University of Warwick
- 16.45 Close of seminar

POSTERS

Theory of mind, central coherence and perception of ambiguity in young people with additional learning support needs.

Cath Best, Eve Johnstone, Vivien Moffat

Intention Recognition in Autistic Spectrum Condition (ASC) using Video Recordings and their corresponding Animacy Displays.

Phil McAleer, Lawrie S. McKay, Judith Piggot, David R. Simmons, Frank E. Pollick

Biological Motion Processing in Autistic Spectrum Conditions: Perceptual and Social Factors.

Lawrie S. McKay, Jennifer Mackie, Judith Piggot, David R. Simmons, Frank E. Pollick

Musical Communication and Interaction with Children with Autism.

Baishali Mukherjee

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

A dual deficit model of language impairments in autism

Helen Tager-Flusberg

Boston University, School of Medicine

In this presentation I will review the characteristics of language disorder that are (a) universal and specific to ASD; and (b) more variable aspects of language impairment that do not define the syndrome. Universal impairments are found in pragmatics and communication. These are closely linked to social deficits and problems in understanding other minds. Language impairments define different subgroups within ASD. One subgroup has impairments that parallel those found in specific language impairment. The key features of this subgroup will be described including evidence from behavioral and neuroimaging studies. The influence of language impairments on theory of mind and executive functions in autism will be discussed.

**Disorders of known genetic origin:
Crucial developmental caveats and potential implications for autistic spectrum disorders**

Gaia Scerif
University of Nottingham

Developmental disorders of known genetic origin have been used as naturally-occurring models to link the function (and dysfunction) of genes with cognition. However, as more is learnt about the developmental cognitive neuroscience of such disorders, two key needs are becoming apparent: an understanding of the mechanisms underlying both relative strengths and weaknesses and an understanding of stability and change over developmental trajectories in these disorders.

Fragile X syndrome (FXS) is a genetically inherited disorder associated with the silencing of a single gene involved in experience-dependent changes at glutamatergic synapses. In adulthood, it is associated with core attentional difficulties, but the attentional profile of infants and toddlers has not been investigated and will be the focus of the current paper. I will report three experiments investigating endogenous and exogenous influences on attentional selection in infants and toddlers with fragile X syndrome. Empirical evidence suggests that, even in disorders associated with single genetic dysfunctions such as FXS, it is incorrect to assume a priori that genotype-cognitive phenotype relations are stable through the lifespan and that they result in selectively spared or impaired cognitive processes. Efforts should be dedicated instead to operationalising *how* early changes in neurocomputational properties may have differential domain-relevant effects on cognitive development.

Finally, the paper will explore questions and points for discussion for researchers investigating conditions of unknown genetic origin, such as autistic spectrum disorders.

**Mechanisms underpinning difficulties interpreting cues in ASD:
A role for attention modulation**

Catherine Ames
University of Bristol

Children with autism are sensitive to the directional information conveyed by eye-gaze and arrow cues; however they are less able to interpret them as sources from which additional information can be inferred. A series of experiments investigated the presence of interpretation difficulties in the use of both social and non-social cues. A set of putative mechanisms whose impairment may impact on the efficient use of cues will be described. Finally, one of these, attention, will be examined in more detail and the suggestion made that a deficit in the ability to modulate attention in complex environments could be implicated in the failure of children with autism to develop typical appreciation of social cues.

Symbolic representation of pictures and words in children with autism

Melissa Allen Preissler

University of Edinburgh, Department of Psychology

Understanding the symbolic capacity of pictures and words requires more than merely associating words and pictures with real world objects. By the time they are 2-years-old, normally developing children demonstrate symbolic understanding by knowing that pictures and words refer to a real world entity (“my cat, Sydney”) or conceptual class (“cats”), even with an absent referent. I will discuss how normally developing children begin to understand pictures as symbolic, and contrast this with how children with autism, who have established deficits in understanding intention, language acquisition, and social difficulties, fail to possess this same type of representational understanding. I will also discuss the link between naming and intention as cues for interpreting pictures as symbols, and such implications for individuals with ASD.

Memory in autism spectrum disorders: Enduring themes and prospects for the future

Dermot Bowler

City University, London

Although memory difficulties are not usually thought of as cardinal symptoms of autism spectrum disorders (ASD), these conditions present a fairly consistent pattern of spared and impaired memory processes. This patterning can help to provide some clues to underlying psychological difficulties in the autistic population and can also help us to understand the world from the point of view of a person with ASD.

Memory, language, and intellectual ability in low functioning autism

— Sally Bigham, Jill Boucher & Andrew Mayes

University of Warwick

Little attempt has been made to explain why language impairment and intellectual disability (ID) occur together in people with low functioning autism (LFA), and this is regrettable for both practical and theoretical reasons. In this paper we suggest that language impairment and ID occur together in people with LFA because both are caused at least in part by a combined impairment of episodic and semantic memory. This hypothesis leads to the predictions (a) that recognition will be impaired in people with LFA, reflecting an impairment of semantic memory additional to the episodic memory impairments that occur in high functioning as well as low functioning individuals; and (b) that recognition scores will correlate with measures of conceptual-linguistic knowledge, including measures of verbal intelligence, in individuals with LFA, but not in controls. We will present evidence relating to these predictions. If time, we will consider alternative or additional explanations of the language impairment in LFA, and suggest how our own theory relates to other possible causal factors.

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Organising Committee:

María Núñez & Clare Brogan
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