

# BPPS NEWS

*The Newsletter of the British Psychophysiological Society*

Issue 3: Spring/Summer 2004

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## THE 2004 CONFERENCE



### It's Time to Book:

This year's annual scientific meeting of the BPPS will be held from 13-15th September in the University of Manchester, Dalton-Ellis Halls of Residence,

- More details – pages 2-5

The meeting will last 2.5 days, starting at lunchtime on the Monday.

## MANCHESTER 2004



This year's conference boasts three exciting symposia covering the following subjects:

- TMS
- Cross-modal Interactions
- Auditory perception

With top-notch keynote speakers including Einat Liebenthal, John Rothwell & Charles Spence (see page 4 for a brief profile of the speakers).

There will also be plenty of opportunity for free platform presentations and we particularly encourage the participation of post-graduates, here and through poster presentations.

The deadline for the submission of abstracts is June 1<sup>st</sup> 2004.

Full details for submission and bookings, accommodation etc can be found on the conference web-site at:

<http://www.hop.man.ac.uk/BPPS/>

Accommodation is extremely handily available in the conference venue itself – The Dalton Ellis Hall (see photo above left). Rates are £35 ensuite, £25 single. For those of you who are familiar with Manchester, it is in the Victoria Park area of the city.



## MANCHESTER 2004

Symposia topics will include Transcranial Magnetic Stimulation (TMS), Crossmodal Interactions and Auditory Perception.

### **Crossmodal symposium:**

"Crossmodal Interactions: Evidence from human behavioural and imaging studies"

Convenor: Dr Donna Lloyd (University of Liverpool).

Keynote lecture: Dr Charles Spence (Dept of Experimental Psychology, University of Oxford),

**"Crossmodal attention and multisensory integration"**.

Symposium speakers:

Dr Salvadore Soto-Faraco (University of Barcelona),

**"Eye-gaze orienting to auditory and tactile targets"**.

Dr India Morisson (University of North Wales, Bangor),

**"The role of crossmodal processing in intersubjective pain perception"**.

Dr Donna Lloyd (University of Liverpool),

**"Visuo-tactile Multisensory Interactions and fMRI"**.

Dr Jose Van Velzen (Birkbeck College, London), **"ERP Studies of Crossmodal Attention"**.

### **TMS symposium:**

Convenor: Dr Vince Walsh (Institute of Cognitive Neuroscience, UCL).

Keynote lecture: Prof. John Rothwell (Sobell Department of Motor Neuroscience and Movement Disorders, Institute of Neurology, London),

**"Rapid adaptive plasticity of the brain explored with TMS"**

Symposium speakers:

Dr Sven Bestmann (Sobell Department of Motor Neuroscience and Movement Disorders, Institute of Neurology, London),

**"Combining TMS and fMRI in behavioural experiments"**.

Dr Matthew Rushworth (Experimental Psychology, Oxford),

"Magnetic stimulation studies of attention and action".

Prof. Stephen Jackson (School of Psychology, University of Nottingham),

**"Remapping of space in the parietal cortex"**

Dr Shaheen Hamdy (Dept. of Gastrointestinal Sciences, Hope Hospital, Salford),

**"Gut and the human motor cortex: studies with TMS"**

Please see next page for the Auditory symposium.

# Manchester 2004

## Auditory symposium:

Convenor: Dr Caroline Witton (University of Aston).

Keynote lecturer: Dr Einat Liebenthal (Medical College of Wisconsin, Milwaukee), “**Neural substrates of auditory and phonetic perception**”.

Symposium speakers:

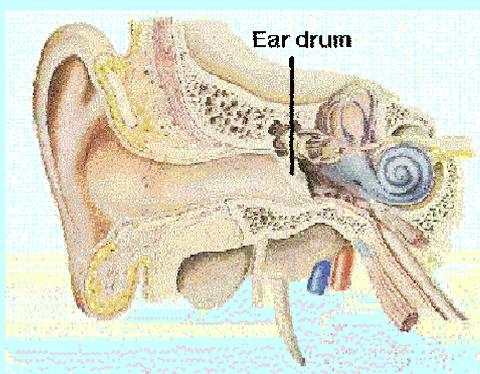
Prof. Gary Green (York Neuroimaging Centre), “**Functional connectivity estimated from neuronal dynamics**”.

Dr Michael Simpson (University of Aston), “**An MEG study of how the brain processes moving sounds**”.

Dr Sophie Scott (UCL), “**The neural basis of speech perception – the role of streams of processing and hemispheric asymmetries**”.

Dr Adrian Rees (University of Newcastle upon Tyne) – TBA.

Two more speakers to be announced.



## CONFERENCE SCHEDULE

(at a glance)

### Monday 13<sup>th</sup> September

10.30 – 12.00	Registration Poster preparation
12.00 – 13.00	Lunch
13.15 – 13.30	Welcome
13.30 – 15.30	Symposium: Crossmodal
15.30 – 16.00	Tea & Coffee
16.00 – 17.00	Keynote speaker: Charles Spence
17.00 – 18.30	Poster session
18.30 – 19.30	Committee

### Tuesday 14<sup>th</sup> September

9.30 – 10.30	Free platform
10.30 – 11.00	Tea & Coffee
11.00 – 12.00	Free platform
12.00 – 13.00	AGM
13.00 – 14.00	Lunch
14.00 – 16.00	Symposium: TMS
16.00 – 16.30	Tea & Coffee
16.30 – 17.30	Keynote speaker: John Rothwell
19.30	Conference dinner

### Wednesday 15<sup>th</sup> September

9.30 – 10.30	Keynote speaker: Einat Liebenthal
10.30 – 11.00	Tea & Coffee
11.00 – 12.30	Symposium: Auditory
12.30 – 13.30	Lunch
13.30 – 15.00	Symposium contd
15.00 – 15.30	Tea & Coffee
15.30 – 16.30	Free platform
16.30 – 17.00	Final discussion

# Manchester 2004

## THE KEYNOTE DOSSIER

For your information and general titillation we have included a brief profile of each of our keynote speakers – just to whet our appetites...

### **Einat Liebenthal**

Professor Liebenthal is co-director of the Language Imaging Laboratory in the Department of Neurology at the Medical College of Wisconsin. The main aims of the lab, in their own words, are as follows,

*“Our main focus is on using functional MRI to study the neurophysiological correlates of language processes. Though our interests range widely, the chief focus is on left temporal lobe systems associated with perceptual processes and memory stores underlying language behavior, particularly single word recognition. A second major focus of our laboratory is on development and testing of methods for presurgical functional localization of language and episodic memory systems. Our aim is to use the basic knowledge gained from fMRI studies of normal language processing to predict and prevent neuropsychological deficits in patients who must undergo surgery in sensitive brain areas”.*

One particular project that Einat is involved in aims to investigate ‘The Neurophysiological Basis of Speech Perception’

*“The long-term objectives of this project are to identify the brain areas and describe the neurophysiological processes underlying speech perception. In this project, the neurophysiological processes underlying categorical perception of speech and*

*speech-like sounds are investigated. Categorical perception is described as a poor ability to discriminate between members of the same category and a very good ability to discriminate between members of different categories. A specific hypothesis is that the pattern of left-hemispheric dominance observed for speech sounds is related to their categorical perception, a prominent feature of the analysis of speech sounds. It is suggested that the left hemisphere is specialized for categorical perception of sounds, whereas the right hemisphere is specialized for continuous sound perception. The dichotomy between the left and the right hemisphere in auditory perception is supported by evidence for functional specialization of the left hemisphere for the processing of sounds with dynamic spectrotemporal variations and specialization of the right hemisphere for the processing of sounds with fine variations in the spectral domain and evidence for anatomical differentiation between auditory areas in the left and the right temporal lobes. Some evidence exists in the visual system for hemispheric specialization for categorical and continuous perception but this hypothesis has not been tested in the auditory system”.*

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### **John Rothwell**

Professor Rothwell is Head of the Sobell Department of Motor Neuroscience and Movement in the Institute of Neurology, UCL.

*“The laboratory specialises in devising new techniques to study the physiology of the human motor system in intact, awake volunteers. Our interest is fuelled by the need to use non-invasive techniques to examine pathological changes in neurological*

John Rothwell (continued)

*disease, not only for the purposes of identifying pathology but also of charting the compensatory changes that occur in parts of the system unaffected by the disease process. The work extends from the study of spinal or brainstem reflex systems to basal ganglia and cerebral cortex.*

*The work has provided insight into the mechanisms of action of deep brain stimulation for the treatment of Parkinson's disease and dystonia and the disorganisation of cortical and brainstem circuitry in different forms of myoclonus. In addition the lab has a long experience in the use of transcranial magnetic stimulation (TMS) and has pioneered its use to study cortical connectivity, as a virtual lesion technique and as a method for provoking long-term changes in the excitability of cortical synapses”.*

One of the projects John is involved in with particular relevance to his lecture in Manchester is: TMS investigations of connectivity and plasticity of motor and premotor cortex –

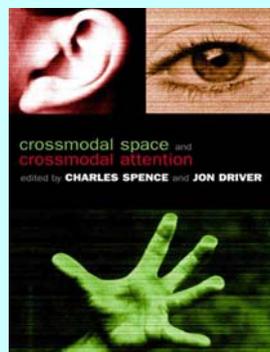
*“These investigations complement those of Prof Lemons group in primates. We have already shown that it is possible to study the connectivity between premotor and motor cortex by using one TMS pulse to activate premotor cortex and another to test excitability in motor cortex. It turns out that repetitive stimulation of premotor areas (1000 pulses at 1Hz) can produce long lasting changes in the physiology of the motor cortex and also produce behavioural effects on reaction times. We are now using a similar technique to explore connections to motor areas from cerebellum and midline motor areas”.*

## Charles Spence

Professor Spence is head of the Crossmodal Research Group in the Department of Experimental Psychology at Oxford.

*“Traditionally, the five classic senses of vision, hearing, touch, smell and taste have been studied in isolation by psychological and neuroscientific researchers. However, in the last few years, numerous examples of auditory-visual, visual-tactile, and auditory-tactile perceptual and attentional interactions have been documented. This research has emphatically shown that even early sensory processing within a single sense is modulated by information in and attention towards the other senses.*

*We are studying the integration of information across the traditional sense modalities (i.e. crossmodal) using a variety of paradigms and techniques, including psychophysics, functional magnetic resonance imaging (fMRI), electroencephalography (EEG), and transcranial magnetic stimulation (TMS). This exciting area of research is changing the way we view our five senses, and contributing important new insights to the understanding of the brain”.*



Charles Spence & Jon Driver have recently co-edited a new book on the subject entitled:

**“Crossmodal Space & Crossmodal Attention (Oxford University Press, 2003).**

# ANNOUNCEMENT

## *Psychophysiology in Ergonomics 5<sup>th</sup>*

Biannual Meeting, New Orleans, Louisiana,  
USA, September 19, 2004

Further information is available at  
<http://www2.uni-wuppertal.de/FB3/psychologie/physio/pie.htm>

Program Organizer:

Dr. Gabriele Freude

E-mail: [freude.gabriele@baua.bund.de](mailto:freude.gabriele@baua.bund.de)

Fax: +49 30 51548-4171

Tel: +49 30 51548-4411

Federal Institut for Occupational Safety and Health  
Noeldnerstrasse 40-42  
10317 Berlin  
Germany

### SUGGESTIONS

If you have any suggestions for things to include in forthcoming editions of the BPPS newsletter, or if you have any comments, criticisms or messages, please feel free to contact:

Nick Cooper (Newsletter Editor)  
[n.cooper@imperial.ac.uk](mailto:n.cooper@imperial.ac.uk)

*In particular, we are hoping to include in a future newsletter a history of the society, its creation and the early characters – so any information or even plain old (good natured!) gossip will be gratefully received!*

I look forward to hearing from you.

### STUDENT BURSARIES

Bursaries are available from the society for post-graduates to attend conferences both in the UK and abroad. The maximum amount per person is £200. They are typically available to help students with the costs associated with presenting at a conference.

Details of how to apply for these bursaries are available from the society president:

[a.burgess@imperial.ac.uk](mailto:a.burgess@imperial.ac.uk)

Information should include name, institution, purpose of funding and associated work (e.g. an abstract).

# CAREER OPPORTUNITIES

## A PhD in Neuroimaging and Memory

A PhD research Studentship is available for the coming academic year within the Psychological Imaging Laboratory at Stirling University, Scotland. The successful candidate will be working with Dr David Donaldson to investigate the functional and neural basis of executive control in episodic memory. The project uses neuropsychological assessment and brain imaging (event-related brain potentials) to augment traditional behavioural studies of memory. The project would suit students who are interested in the Cognitive Neuroscience approach to Psychology.

### OVERVIEW OF THE PROJECT:

Human behaviour is astonishingly adaptable; the use of high-level executive functions allows basic psychological abilities such as memory and attention to be engaged to meet a wide variety of environmental demands and to realize an endless set of goals. One of the most difficult questions raised by modern cognitive science is how, exactly, the myriad abilities of the human cognitive system are organised and controlled in such a coherent and flexible manner. Ironically, investigations of executive processes often study the breakdown of functioning, from examining patients with executive disorders, to studying the kinds of slips and lapses of control that occur in everyday life. Here, however, an alternative approach is employed; namely to examine the strategic use of control processes in a memory context - to study how executive functions are used to support a relatively well-understood ability. The aim of the current proposal is to use the study of memory retrieval to investigate high-level executive processing in humans, elucidating the underlying psychological mechanisms that allow memory to be flexibly controlled in the pursuit of changing task demands.

### REFERENCE:

Donaldson, D.I., Allan, K.A., & Wilding, E. (2002). Electrophysiological investigations of explicit memory retrieval. In *The Cognitive Neurosciences*, E. Wilding A. Parker and T. Bussey (Eds.) Psychology Press.

**THE GRANT:** The PhD project is supported by a grant from the BBSRC (stipend of £10,500 in 2004/5 and £12,000 in 2005/6). In addition, the BBSRC has provided a stipend enhancement of £2,000.

**Contact Dr David I Donaldson, Tel: 01786 467641,  
e-mail: [did1@stir.ac.uk](mailto:did1@stir.ac.uk)**

The closing date for applications is 25th June 2004

# BPPS MEMBERSHIP

As ever, the hunt for new members continues unabated...

Please encourage your students and colleagues to join this society and to participate in its friendly, scientific and (dare I say) fun activities; most notably of course, the annual conference – which in case you hadn't noticed, is this year in Manchester – so get booking! – We look forward to seeing you all there.

Full membership	£35
Affiliate membership	£15
Subscribers	£15
Student membership	£25

Membership enquiries should be forwarded to

Dr Deborah Bentley  
Human Pain Research Group  
University of Manchester Rheumatic Disease Centre  
Hope Hospital  
Eccles Old Road  
Salford  
M6 8HD  
United Kingdom

Tel: 0161 206 4528  
E-mail: [deborah.bentley@man.ac.uk](mailto:deborah.bentley@man.ac.uk)