

Bryan A Strange MRCP MBBS PhD BSc(Hons) currently holds an I3 programme Professorship at the Universidad Politécnica de Madrid, where he has recently set up the Laboratory of Clinical Neuroscience. He began his neuroscience training as an undergraduate in the synaptic plasticity laboratory of Graham Collingridge. He holds a medical degree from University College London and did his PhD in cognitive neuroscience at the Wellcome Department of Cognitive Neurology, Institute of Neurology, London, under Ray Dolan and Karl Friston. His research interests focus on the functions of the human medial temporal lobe. In particular, he investigates how the hippocampus processes novel or unexpected events, and how this facilitates human memory. He also works on the role of the amygdala in mediating enhanced memory for emotional stimuli. He uses a multi-disciplinary approach to study human memory, combining functional brain imaging techniques with patient lesion data, pharmacology, genetics and human intracranial recordings.

Selected publications:

Strange BA, Hurlmann R, Dolan RJ (2003) An emotion-induced retrograde amnesia in humans is amygdala- and beta-adrenergic-dependent. *Proceedings National Academy of Science USA* 100:13626-13631.

Strange BA, Dolan RJ (2004) Beta-adrenergic modulation of emotional memory-evoked human amygdala and hippocampal responses. *Proceedings National Academy of Science USA* 101:11454-11458.

Moratti S, Saugar C, **Strange BA (2011)** Prefrontal-occipitoparietal coupling underlies late latency human neuronal responses to emotion. *Journal of Neuroscience* 31:17278-86.

Strange BA, Gartmann N, Brenninkmeyer J, Haaker J, Reif A, Kalisch R, Büchel C (2013) Dopamine receptor 4 promoter polymorphism modulates memory and neuronal responses to salience. *Neuroimage* 84C:922-931.

Kroes MCW, Tendolkar I, van Wingen GA, van Waarde JA, **Strange B, Fernández G (2014)** An electroconvulsive therapy procedure impairs reconsolidation of episodic memories in humans. *Nature Neuroscience* (in press).

Marijn Kroes obtained a bachelor degree in psychonomics from the University of Amsterdam, a masters degree in neuroscience and cognition from Utrecht University, and completed his PhD cum laude at the Donders Institute for Brain, Cognition, and Behaviour at the Radboud University Nijmegen in the Netherlands in the Group of Guillen Fernandez. His PhD work focused on the ability to alter memories for emotional experiences and included studies with healthy- and patient population, neuroimaging, pharmacological, genetic, and psychophysiological methods. He completed a post-doc in the lab of Francesco Battaglia investigating the neural networks of memory using multi-unit recordings in rodents first at the University of Amsterdam and subsequently at the Radboud University, and is now a post-doctoral fellow at the CTB in the group of Bryan Strange working on intracranial spike recordings from patients.

Selected publications:

Kroes MCW, Tendolkar I, van Wingen GA, van Waarde JA, Strange B, Fernández G An electroconvulsive therapy procedure impairs reconsolidation of episodic memories in humans. *Nature Neuroscience* (in press).

Genzel L, **Kroes MCW**, Dresler M, Battaglia Light sleep versus slow wave sleep in memory consolidation: a question of local versus global processes? *Trends in Neuroscience* (in press).

Kroes MCW, van Wingen GA, Wittwer J, Mohajeri MH, Kloek J, Fernández G Food can lift mood by affecting mood-regulating neurocircuits via a serotonergic mechanism. *Neuroimage* (in press).

Whalley MG, **Kroes MCW**, Huntley Z, Rugg MD, Davis SW, Brewin CR (2013) An fMRI investigation of posttraumatic flashbacks. *Brain and Cognition* 31(1):151-59.

Kroes MCW, Fernández G (2012) Dynamic neural systems enable adaptive, flexible memories. *Neuroscience and Biobehavioural Reviews* 36(7):1646-66.

Kroes MCW, Strange B, Dolan RJ (2010) Beta-adrenergic blockade during memory retrieval in humans evokes a sustained reduction of declarative emotional memory enhancement. An electroconvulsive therapy procedure impairs reconsolidation of episodic memories in humans. *Journal of Neuroscience* 30(11):3959-63.

Ana Galarza is a Psychologist, specialized in Clinical Psychology by University Complutense of Madrid (2009). She holds a Master's degree in Cognitive Behavioural Therapy (2011), and a Master's degree in Psychopharmacology and drug abuse, University Complutense, Madrid (2011). Her main field of knowledge is Neuropsychology and currently working on clinical neuropsychology for cognitive rehabilitation. She is now a PhD student at the laboratory of Clinical Neuroscience at the Technical Biomedical Centre, Polytechnic University of Madrid (2013) conducting her researching on the therapeutic benefits of deep-brain stimulation of the human nucleus accumbens in OCD patients. Future lines of research include pharmacology effects on memory in humans.

Fernando López Sosa is currently holding a CONACyT pre-doctoral grant from México to research in the Laboratory of Clinical Neuroscience. He began his training as an engineer working with medical equipment in the General Hospital of Chihuahua. He holds an engineering degree from the University of La Salle and a Master's degree in Biomedical Engineering from the Universidad Politécnica de Madrid. His current work is aimed at the dynamic cortical and nucleus accumbens (Nacc) networks in humans, combining intracranial, MEG/EEG recordings and deep brain stimulation (DBS) addressing subcortical neurophysiology in OCD

patients and investigating the electrophysiological basis of emotional memory, reward-based learning and the mechanistic basis for the therapeutic benefit of DBS.

Constantino Méndez Bertolo main field of knowledge is Affective Neuroscience. Constantino Méndez Bertolo has previously done research on the relationship between Emotion, Language Perception and Memory processes, focusing mainly on written words and priming mechanisms. Currently, his thesis project involves disentangling the processing of emotional cues in visual scenes as a function of its main spatial frequency components. The technical approach comprehends techniques from EEG/MEG to fMRI, including intracranial recordings and clinical population evaluations. His current objective is to describe the visual processing of threat/approach related cues at medial and cortical areas of the brain, and how these mechanisms could be modulated in mood disorders.

Mar Yebra currently holds a research contract with Hospital Nacional de Paraplégicos de Toledo collaborating with "Laboratory of Clinical Neuroscience". She holds a telecommunication engineering degree and a master's degree in Biomedical Engineering from the Universidad Politécnica de Madrid. Her training began in the Artificial Intelligent department of Universidad Nacional a Distancia as a researcher intern in Bayesian Networks. She is collaborating with Hospital Nacional de Paraplégicos de Toledo developing an online platform for neuroimaging analysis. Her main research interests are aimed at describing the role and coupling between different key brain structures such as Hippocampus and Amygdala during memory formation by means of intracranial recordings from the human brain and fMRI.

Dr. Stephan Moratti is a Doctor in Clinical Psychology (PhD; 2005 at the University of Konstanz, Germany). Thereafter, he was a research fellow at the University of Konstanz (2005). With a research grant from the German Research Foundation he joined the Center of Magnetoencephalography at the Complutense University of Madrid, Spain (2006-2008) as a post doc. Later, he was a post doc at the Biomedical Technology Centre of the Polytechnic University of Madrid (2008-2009) funded by the Comunidad de Madrid (MADR.IB). Currently he is a Ramón y Cajal Research Fellow at the Complutense University of Madrid (2010) at the Department of Basic Psychology.

He investigated how emotional processes influence neuronal oscillatory brain activity in healthy and depressive subjects [1-3]. Further, Dr. Stephan Moratti investigated basic fear learning processes [4-6] and feedback coupling to early visual cortex [7]. Dr. Stephan Moratti has been reviewer for some high impact journals of the fields (e. g. Biological Psychiatry, The Journal of American Psychiatry, and PLoS One). He is associate editor of the journal Psychophysiology.

Dr. Stephan Moratti has been principal investigator of two projects, (MO-1043/2-1, German Research Foundation, years 2006-2008; PSI2009-12702, Spanish Ministry of Science, years 2010-2013) and collaborator in numerous other projects in Germany and Spain.

Selected publications

1. Moratti, S., A. Keil, and M. Stolarova. *Neuroimage*, 2004. 21(3): p. 954-64.
2. Moratti, S., C. Saugar, and B.A. Strange. *J Neurosci*, 2011. 31(47): p. 17278-86.
3. Moratti, S., et al. *Arch Gen Psychiatry*, 2008. 65(5): p. 532-41.
4. Moratti, S. and A. Keil. *Brain Res Cogn Brain Res*, 2005. 25(2): p. 459-71.
5. Moratti, S., A. Keil, and G.A. Miller. *Psychophysiology*, 2006. 43(2): p. 216-26.
6. Moratti, S. and A. Keil. *Cereb Cortex*, 2009. 19(12): p. 2803-9.
7. Moratti, S., et al. *Neuroimage*, 2013. <http://dx.doi.org/10.1016/j.neuroimage.2013.10.037>

Javier González Rosa is currently a Marie Curie Fellow at the Technical University of Madrid (CTB-UPM). He began his neuroscience training as an undergraduate, and later as a PhD student in the Department of Experimental Psychology, at University of Seville, where he also did his PhD in psychophysiology and cognitive neuroscience, and became Assistant Professor of Psychobiology. From 2008 to 2012, and under the supervision of Letizia Leocani and Giancalo Comi, he has been working in the Institute of Experimental Neurology (San Raffaele Scientific Institute) in Milan, thanks to the Marie Curie Postdoctoral Fellowship.

He has focussed his research on the multimodal integration of high-resolution EEG, fMRI, and TMS imaging data obtained during performance of motor and cognitive tasks, with a particular interest in assessment of attentional function in healthy subjects and different neurological diseases. His current work is aimed to advance in understanding of subcortical structures functioning and their interaction with cortical areas by deep brain stimulation protocols and simultaneous intracranial (icEEG) and EEG recordings in neurological and psychiatric patients. Additionally, he is highly involved in the use of novel and non-invasive neuromodulation techniques (tSMS) for assessment of the functional state of the human cerebral cortex.

Recent Publications:

Gonzalez-Rosa JJ, Inuggi A, Cursi M, Blasi V, Falini A, Silva AM, Annovazzi P, Comi G, Leocani L (2013). Response competition and response inhibition during different choice-discrimination tasks: evidence from source analysis during simultaneous EEG-fMRI. *International Journal of Psychophysiology*, 89(1):37-47.

Spagnolo F, Coppi E, Chieffo R, Straffi L, Fichera M, Nuara A, **Gonzalez-Rosa JJ**, Martinelli V, Comi G, Volontè MA, Leocani L (2013). Interhemispheric Balance in Parkinson's Disease: A Transcranial Magnetic Stimulation Study. *Brain Stimulation*, (in press).

Vazquez-Marrufo M, **Gonzalez-Rosa JJ**, Galvao-Carmona A, Hidalgo-Muñoz A, Borges M, Ruiz-Peña JL, Izquierdo G (2013). Retest reliability of individual P3 topography assessed by high density electroencephalography. *PLoS One*, e62523: 1-8.

Chieffo R, Inuggi A, Straffi L, Coppi E, **Gonzalez-Rosa JJ**, Spagnolo F, Poggi A, Comi G, Comola M, Leocani L Mapping early changes of cortical motor output after subcortical stroke: A transcranial magnetic stimulation study. *Brain Stimulation*, 2012; 6(3):322-9.