

Martin M. Monti, Ph.D.

GENERAL INFORMATION

Medical Research Council
Cognition & Brain Sciences Unit
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Cambridge CB2 7EF
United Kingdom

Citizenship: Italian, US
DoB: 24th of May 1978
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RESEARCH INTERESTS

- Cognitive Neuroscience
- Consciousness, Vegetative State, Coma, Brain-Computer Interfaces
- Language & Thought, Syntax, Human Reasoning, Mental Arithmetic
- fMRI Methods & Statistical Analysis

EMPLOYMENT

University of California, Los Angeles, Los Angeles, CA, USA **Starting Jan 2011**
Assistant Professor, Department of Psychology

MRC Cognition & Brain Sciences Unit, Cambridge, UK **Sep 2007 - Dec 2010**
Post-Doctoral Scientist (Career Development Fellowship)

- Advisor: Adrian M. Owen

EDUCATION

Princeton University, Dept. of Psychology, Princeton NJ, USA **Sep 2003 - Jun 2007**

Ph.D. Psychology & Neuroscience, June 2007
M.A. Psychology & Neuroscience, December 2005

- Advisor: Daniel N. Osherson; Co-Advisor: James V. Haxby
- Dissertation: “Neural Basis of Human Reasoning”
- M.A. Specialty Paper: “Statistical Analysis of fMRI Time-Series: A Critical Evaluation of the GLM Approach”

Università L. Bocconi, Milan, Italy **Sep 1998 - Jun 2002**
Laurea, Discipline Economiche e Sociali (“Economics”), June 2002
Graduation grade: 110/110 *Cum Laude*

GRANTS

EU-FP7 ICT 2009 (*co-applicant*): Deployment of Brain-Computer Interfaces for the Detection of Consciousness in Non-Responsive Patients (EUR 3,932,864.⁰⁰).

AWARDS AND FELLOWSHIPS

Teaching Award, for Excellence in Undergraduate Teaching, Association of Princeton Graduate Alumni (APGA) (2005/6) (yearly award, elected by faculty and students.)

MRC Career Development Fellowship (2007/11)
Mathey College Graduate Fellow (2006/7)
Princeton Graduate School Summer Fellowship (2004)
Princeton University Graduate Fellowship (2003/4)
Lodieska Stockbridge Vaughan Fellowship (2002/3)
Rice University Graduate Fellowship (2002/3)
Brain Travel Grant (2008)
Organization for Human Brain Mapping Travel Award (2008)

PUBLICATIONS

- Monti M.M. (under review)** Statistical Analysis of fMRI Time-Series: A Critical Evaluation of the GLM Approach.
- Fernández-Espejo D., Bekinschtein T., **Monti M.M.**, Pickard J.D., Junque C., Owen A.M., Coleman M.R. (*in press*) Diffusion weighted imaging distinguishes the vegetative state from the minimally conscious state, *NeuroImage*.
- Monti M.M.**, Laureys S., Owen A.M. (2010) The Vegetative State, *BMJ* 341:c3765:292-296.
- Monti M.M.**, Vanhaudenhuyse A., Coleman M.R., Boly M., Pickard J., Tshibanda, J-F., Owen, A.M., Laureys, S. (2010) Willful modulation of brain activity in disorders of consciousness, *New England Journal of Medicine* 362:579-589.
- Hampshire A., Chamberlain S., **Monti M.M.**, Duncan J., Owen A.M. (2010) The Role of the Right Inferior Frontal Gyrus: Inhibition and Attentional Control, *NeuroImage* 50(3):1313-9.
- Monti M.M.**, Owen A.M. (2010) Looking for consciousness, the aware mind in the motionless body, *The Psychologist* 23(6):478-481.
- Monti M.M.**, Owen A.M. (2010) Behavior in the brain: using functional neuroimaging to assess residual cognition and awareness after severe brain injury, *Journal of Psychophysiology*, 24(2).
- Monti M.M.**, Parsons L.M., Osherson D.N. (2009) The Boundaries of Language and Thought in Deductive Inference, *Proceedings of the National Academy of Sciences* 106:12554-12559.
- Monti M.M.**, Coleman M.R., Owen A.M. (2009) fMRI and the Vegetative State: Solving the Behavioral Dilemma? *Annals of the New York Academy of Sciences* 1157:81-89.
- Monti M.M.**, Coleman M.R., Owen A.M. (2009) Executive Functions in the Absence of Behavior: Functional Imaging of the Minimally Conscious State, *Progress in Brain Research* 117:249-260.
- Monti M.M.**, Vanhaudenhuyse A., Coleman M.R., Boly M., Owen, A.M., Laureys, S. (2009) Using fMRI to diagnose disorders of consciousness in the absence of behavior, *Society for Neuroscience Abstracts*, 804.4.
- Coleman M.R., Bekinschtein T., **Monti M.M.**, Owen A.M., Pickard J.D. (2009) A Multi-Modal Approach to the Assessment of Patients with Disorders of Consciousness, *Progress in Brain Research* 177:231-248.
- Parsons L.M., Osherson D.N., **Monti M.M.** (2009) Language and thought: Neural basis of arithmetic and linguistic inference, *Society for Neuroscience Abstracts*, 217.6.
- Monti M.M.**, Parsons L.M., Martinez M.J., Osherson D.N. (2007) Functional Neuroanatomy of Deductive Inference: A Language-Independent Distributed Network, *NeuroImage* 37:1005-1016.
- Monti M.M.**, Parsons L.M., Osherson D.N. (2007) The Role of Language in Deductive Reasoning. *Society for Neuroscience Abstracts*, 126.1.
- Monti M.M.**, Mura G. (2007) Gli effetti delle emozioni nelle interazioni negoziali. In Diamantini D. & Oliverio N. (Eds.) *Clienti, controparti e amici*. Guerrini e associati: Milan, Italy, 51-75.
- Parsons L.M., **Monti M.M.**, Osherson D.N. (2006) Functional Neuroanatomy of Deductive Reasoning, *Society for Neuroscience Abstracts*, 310.1.
- Monti M.M.**, Grant S., Osherson D.N. (2005) A Note on Concave Utility Functions, *Mind & Society*, 4(1):85-96.
- Parsons L.M., **Monti M.M.**, Martinez M.J., Osherson D.N. (2004) Brain Basis of Deduction: Effects of Argument Validity and Content, *Society for Neuroscience Abstracts*, 372.4.
- Diamantini D., **Monti M.M.**, Pietroni D. (2002) L'impatto delle emozioni nelle interazioni negoziali. In Bellelli, G. & Curci, A. (Eds.) *Emozioni: Cultura, Comunicazione, Benessere*. Progedit: Bari, Italy, 237-42.

IN PREPARATION

- Monti M.M.**, Coleman M.R., Owen A.M. (*in preparation*) Visual Cognition in Disorders of Consciousness: from V1 to top-down attention with fMRI.
- Monti M.M.**, Parsons L.M., Osherson D.N. (*in preparation*) Thought beyond language: dissociating linguistic from arithmetic syntax.
- Monti M.M.**, Coleman M.R., Owen A.M. (*in preparation*) Communicating thoughts with Real-Time fMRI.

SELECTED
ORAL
PRESENTATIONS

- Monti M.M.** Consciousness and the Vegetative State. *The Brain Forum*, Rome, Italy, April 2010.
- Monti M.M.** The aware mind in the motionless body: fMRI of the vegetative state. *Cambridge Science Festival – Exploring the Brain*, Cambridge UK, March 2010.
- Monti M.M.** Disentangling the automatic from the conscious brain: fMRI of the vegetative state. *Consciousness and its Descriptors*, Limassol, Cyprus, December 2009.
- Parsons L.M., Osherson D.N., **Monti M.M.** (Presenting) Language and thought: Neural basis of arithmetic and linguistic inference. *SFN Annual Meeting*, Chicago, IL, November 2009.
- Monti M.M.**, Vanhaudenhuyse A., Coleman M.R., Boly M., Owen, A.M., Laureys, S. Using fMRI to diagnose disorders of consciousness in the absence of behavior. *SFN Annual Meeting*, Chicago, IL, November 2009.
- Monti M.M.**, Coleman M.R., Owen A.M. Disentangling the automatic from the conscious brain. *Annual Meeting of the Association for the Scientific Study of Consciousness*, Berlin, Germany, June 2009.
- Monti M.M.**, Coleman M.R., Owen A.M. ‘Brain Reading’ with Real-Time fMRI: Communication via detection of brain states in the absence of motor response. *OHBM Annual Meeting*, Melbourne, AU, June 2008.
- Monti M.M.** Language, Logic and the Brain. *Defining Thoughts: Interdisciplinary Workshop on the Notion of Thought*. IBZ, Ruhr-Universität Bochum, Germany, June 2008.
- Parsons, L.M., **Monti M.M.** (Presenting), Osherson, D.N. Functional Neuroanatomy of Deductive Reasoning. *SFN Annual Meeting*, Atlanta GA, October 2006.
- Monti M.M.** Neural Correlates of Deductive Inference, Cognitive Brown Bag Series, Psychology Department, University of British Columbia.
- Monti M.M.** A Neural Similarity Approach to Cortical Representations in Deductive Reasoning, Center for Study of Brain Mind and Behavior, Princeton, NJ, March 2006.
- Monti M.M.** Language and Thought, *Princeton-Penn Graduate Student Symposium*. November 2005.
- Monti M.M.** Logic, Language and the Brain, *Harvard University, Mind, Brain, Behavior (CBB) Graduate Conference on “The Nature of Thought”*. May, 2005.
- Monti M.M.** “A Look into the Brain of Preference Reversals”, Center for Study of Brain Mind and Behavior (CSBMB), Princeton, NJ, November 2004.
- Monti M.M.**, Grant S., Osherson D.N. ‘Wanna bet?’ An Experimental Perspective on Rationality, Risk Aversion and Gambling Behavior, Cognitive Tea Series, Rice University. 26th February 2003.

SELECTED
POSTER
PRESENTATIONS

- Monti M.M.**, Vanhaudenhuyse A., Laureys S., Owen A.M. Speak to me: Communicating thoughts with fMRI in disorders of consciousness, *OHBM Annual Meeting*, Barcelona, Spain, June 2010.
- Monti M.M.**, Coleman M.R., Owen A.M. Executive Function in the Absence of Behavior? Working Memory in the Minimally Conscious State, *OHBM Annual Meeting*, San Francisco, CA, June 2009.
- Monti M.M.**, Parsons L.M., Osherson D.N. The Effects of Content on Deduction: A Multi-Voxel Pattern Analysis of Neural Similarity. *OHBM Annual Meeting*, Chicago, IL, June 2007.
- Monti M.M.**, Parsons L.M., Martinez M.J., Osherson, D.N. Functional Neuroanatomy of Deductive Reasoning. *NIH/NIMH Pre-Doctoral Research Festival*. Bethesda, MD, May 2006.
- Monti M.M.**, Parsons L.M., Osherson D.N. An fMRI Investigation of Deduction Based on Lexical Meaning. *CNS Annual Meeting*, San Francisco, CA, April 2006.
- Monti M.M.**, Parsons L.M., Martinez M.J., Osherson D.N. Neural correlates of deductive inference: A language-independent distributed network. *CNS Annual Meeting*, New York, NY, April 2005.

TEACHING
EXPERIENCE

- Instructor* **Spring 2010**
- “Language and Thought” module, at Anglia Ruskin University, Cambridge, UK.
- Quantitative Methods Advisor for Undergraduate Research* **Sep 2005 - Jun 2007**
- Teaching Assistant (at Princeton University)* **Sep 2004 - Jun 2007**
- PSY259b - Introduction to Cognitive Neurosciences (Instr. S. Kastner).
 - PSY258 - Foundations of Neuroscience (Instr. M. Graziano).
 - PSY251 - Quantitative Methods (Instr. A. Conway).

- PSY258 - Foundations of Neuroscience (Instr. M. Graziano).
- PSY255 - Cognitive Psychology (Instr. D. Osherson).
- PSY258 - Foundations of Neuroscience (Instr. B. Hoebel).

Mathematics Tutor

Sep 1999 - Jun 2000

- Tutor for children with learning disabilities at Associazione Giorgetti, Milan, Italy.

AD HOC
REVIEWS

- *Cerebral Cortex, Journal of Cognitive Neuroscience, Human Brain Mapping, Neuropsychologia, Clinical Neurophysiology, Brain Research, Brain Research Bulletin, Cortex.*

TECHNICAL
SKILLS

- Princeton CSBMB certified fMRI machine operator (3T Siemens Allegra, Syngo MR software).
- Data Analysis Software: FSL, AFNI, Brain Voyager, Stata 8.0, SPSS.
- Computer Programming Skills: Matlab, UNIX TCSH/SH Shell, Visual Basic, E-Prime.

LANGUAGES

Italian (native); English (native); French (fluent)