

Marta Bortoletto – Curriculum vitae

IRCCS Centro San Giovanni di Dio Fatebenefratelli

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Date of Birth: 05/11/1979

Place of Birth: Brescia, Italy

Current position:

Researcher at the Cognitive Neuroscience Unit. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, Italy (from 01/2013).

Coordinator of a full research line 2016-2018 “Development of new markers from cortical reactivity and connectivity”

Higher education:

2007 PhD in Psychobiology, University of Padova

2005 Psychology professional qualification, University of Padova.

2003 MSc in Psychology, with honours, University of Padova.

Research activity:

My main research activity is focused on the study of effective connectivity, both in the motor system and in higher order-cognitive networks, and its functional correlates. I have always employed neurophysiological techniques, e.g. event-related potential (ERP), transcranial magnetic stimulation (TMS), electroencephalographic (EEG) and electromiographic (EMG) activity and part of my research has been directed to the implementation of new methods, e.g. TMS-EEG coregistration, for the study of cortical excitability and connectivity.

2012-15 **Coordinator** of a full research line at IRCCS Centro San Giovanni di Dio Fatebenefratelli.: “Cortical Plasticity and connectivity: induction and monitoring through non invasive brain stimulation”.

2010-12 **Research Associate**, Cognitive Neuroscience Unit at the IRCCS Centro San Giovanni di Dio Fatebenefratelli.

2012 **Visiting Academic**, Cognitive Neuroscience Group at the School of Psychology and Queensland Brain Institute, University of Queensland, Australia.

2008-10 **Post-doctoral fellow**, Cognitive Neuroscience Group at the School of Psychology and Queensland Brain Institute, University of Queensland, Australia.

2007-08 **Post-doctoral fellow**, Cognitive Neuroscience Unit at the IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia.

2004-07 **PhD student**, Psychophysiology Laboratory, University of Padova.

2006 **Visiting student**, Howard Florey Institute at the University of Melbourne, Australia.

2004 **Graduate student**, Institute of Cognitive Neuroscience, University College London, UK.

2003 **Graduate student**, Psychophysiology Laboratory, University of Padova.

Funding support:

Italian Ministry of Health GR-2018-12368250 – **co-PI**. Targeting default mode network dysfunction in persons at risk of Alzheimer's disease with noninvasive techniques.

Bial Foundation, Grants for scientific research 2018 – **PI**. The motor roots of acting together: A psychophysiological investigation.

Italian Ministry of Health GR-2016-02364132 – **PI**. Cortico-cortical signal transmission and brain connectivity alterations at prodromal stage and during the progression of Alzheimer's disease: a multimodal approach of TMS-EEG and advanced MRI.

Italian Multiple Sclerosis Foundation 2016 – **co-PI**. Temporal and spatial features of interhemispheric information transfer in multiple sclerosis: a multimodal approach of TMS-EEG coregistration, MRI and motor learning.

ASM Foundation (2012) – **PI**. New interventions aiming at the promotion of healthy aging.

Honors and Awards:

- Italian Society of Experimental Psychology - “Young researcher” Award (September 2007).
- Centenario Rotary Club Brescia Nord - “Excellence” Award for PhD projects (March 2005).
- Erasmus travel grant from the University of Padova

National and international collaborations:

- Prof Risto Ilmoniemi, Department of Neuroscience and Biomedical Engineering, Aalto University
- Prof Ross Cunnington and prof Jason B. Mattingley, School of Psychology and Queensland Brain Institute, University of Queensland, AU
- Prof Pedro Miranda, Institute of Biophysics & Biomedic Engineering, University of Lisbon, PT
- Prof Corrado Sinigaglia, Department of Philosophy, University of Milan, IT
- Prof Marco Bove, Department of Biomedical Engineering, University of Genova, IT
- Prof Gregor Thut and Dr Domenica Veniero, Centre for Cognitive Neuroimaging, Institute of Neuroscience and Psychology, University of Glasgow, UK.

Review activity:

Editorial board member of: Scientific Reports, Frontiers in Integrative Neuroscience

Ad-hoc reviewer for international scientific journals: Biological Psychology, Brain & Cognition, Brain Stimulation, Brain Structure and Function, Brain Topography, Cerebral Cortex, Clinical Neurology and Neurosurgery, Clinical Psychophysiology, Cortex, Experimental Brain Research, Frontiers in Aging Neuroscience, Frontiers in Human Neuroscience, J. Biomechanics, J. Clinical Neurophysiology, J. Motor Behavior, J. Neurophysiology, J. Neuroscience, Neuroimage, Neuropsychological Rehabilitation, Neuroscience Letters, Perceptual & Motor Skills, Plos One, Psychophysiology, Social Cognitive and Affective Neuroscience,

Ad-hoc grant reviewer: European Research Council Executive Agency (ERCEA), Agence Nationale de la recherche (ANR) - French call for proposal AEP-IIA, Research Executive Agency (REA) - FET-PROACT call, Alzheimer's Association, Weston Brain Institute, Quality of Scientific Research for the Italian Ministry of Education, Universities and Research (VQR 2011-2014).

“Peer reviewed” publications:

Zazio A, **Bortoletto M**, Ruzzoli M, Miniussi C, Veniero D (2019). Perceptual and Physiological Consequences of Dark Adaptation: A TMS-EEG Study. *Brain Topography*: <https://doi.org/10.1007/s10548-019-00715-x>.

Bagattini C, Mutanen T, Fracassi C, Manenti R, Cotelli M, Ilmoniemi R, Miniussi C, **Bortoletto M** (2019). Predicting Alzheimer's disease severity by means of TMS-EEG coregistration. *Neurobiology of Aging*, 80: 38-45.

Belardinelli P, et al (2019). Reproducibility in TMS-EEG studies: A call for data sharing, standard procedures and effective experimental control. *Brain Stimulation*, 12(3): 787-790.

Perini R, **Bortoletto M**, Capogrosso M, Fertoni A, Miniussi C (2016). Acute effects of aerobic exercise promote learning. *Scientific Reports*, 5(6):25440.

Bortoletto M, Rodella C, Salvador R, Miranda PC, Miniussi C (2016). Reduced Current Spread by Concentric Electrodes in Transcranial Electrical Stimulation (tES). *Brain Stimulation* 9(4):525-8.

Pellicciari MC, Miniussi C, Ferrari C, Koch G, **Bortoletto M** (2016). Ongoing cumulative effects of single TMS pulses on corticospinal excitability: an intra- and inter-block investigation *Clinical Neurophysiology*, 127(1):621-8.

Bortoletto M, Veniero D, Thut G, Miniussi C (2015). The contribution of TMS-EEG coregistration in the exploration of the human cortical connectome. *Neuroscience and Biobehavioral Reviews*, 49: 114-124.

Bortoletto M, Pellicciari MC, Rodella C, Miniussi C (2014). The Interaction With Task-induced Activity is More Important Than Polarization: A tDCS Study. *Brain Stimulation*, 8 (2): 269-276.

Veniero D, **Bortoletto M**, Miniussi C (2014). On the challenge of measuring direct cortical reactivity by TMS-EEG. *Brain Stimulation*, 7(5): 759-760.

Bortoletto M, Baker SK, Mattingley JB, Cunnington R (2013). Visual-Motor Interactions during Action Observation Are Shaped by Cognitive Context. *Journal of Cognitive Neuroscience*, 25(11): 1794-806.

Bortoletto M, Mattingley JB, Cunnington R (2013). Effects of context on visuomotor interference depends on the perspective of observed actions. *PlosOne*, 8(1): e53248.

Veniero D, **Bortoletto M**, Miniussi C (2013). Cortical modulation of short-latency TMS-evoked potentials: evidence for cortical origin. *Frontiers in Human Neuroscience*, 6: 352.

Bortoletto M, Mattingley JB, Cunnington R (2011). Intention to act modulates visual perception during action observation. *Neuropsychologia*, 49: 2097-2104.

Bortoletto M, Lemonis, M, Cunnington R (2011). The role of arousal in the preparation for voluntary movement. *Biological Psychology*, 87: 372-378.

Bortoletto M, De Min Tona G, Scozzari S, Sarasso S, Stegagno L (2011). Effects of sleep deprivation on auditory change detection: a N1-Mismatch Negativity study. *International Journal of Psychophysiology* 81: 312-316.

Bortoletto M, Cook, A, Cunnington R (2011). Motor timing and the preparation for sequential actions. *Brain and Cognition*, 75(2): 196-204.

Brignani D, **Bortoletto M**, Miniussi C and Maioli C (2010). The when and where of spatial storage in memory-guided saccades. *Neuroimage*, 52(4): 1611-20.

Bortoletto M, Cunnington R (2010). Motor timing and motor sequencing contribute differently to the preparation for voluntary movement. *Neuroimage*, 49(4): 3338-48.

Veniero D, **Bortoletto M**, Miniussi C (2009). TMS-EEG co-registration: on TMS-induced artifact. *Clinical Neurophysiology* 120: 1392-1399.

Poli S, Sarlo M, **Bortoletto M**, Buodo G, Palomba D (2007). Stimulus-Preceding Negativity and Heart Rate Changes in Anticipation of Affective Pictures. *International Journal of Psychophysiology* 65(1): 32-9.

Bortoletto M, Sarlo M, Poli S, Stegagno L (2006). Pre-Motion Positivity during self-paced movements of finger and mouth. *Neuroreport* 17(9): 883-6.

Book chapters:

Miniussi C, **Bortoletto M**, Thut G, Veniero D (2012). Assessing cortical connectivity using TMS – EEG. In: *Cortical Connectivity: Brain Stimulation for Assessing and Modulating Cortical Connectivity and Function*. Section I: Methods to assess and modulate cortical connectivity and functions. Robert Chen and John Rothwell (eds.). Springer-Verlag, Berlin Heidelberg chapter 5.

Talks in congresses:

TMS-EEG coregistration in the exploration of the human effective connectome. *Congress of the Italian Society of Psychophysiology*, Lucca, 19-21 November 2015.

State-dependency of tDCS effects on motor learning. *Congress of the Italian Society of Experimental Psychology*, Rome, 16-18 September, 2013.

Plasticity and homeostatic regulation in the motor system: effects of transcranial electrical stimulation. *Italian Society for Neurological Rehabilitation – SIRN*, Bari, 18-20 April, 2013.

Do Motor Plans Influence Visual Processing? *17th Congress of the Italian Society of Psychophysiology*, Siena, 28-31 October, 2009.

Does action preparation modulate perception? *HCSNet Perception and Action Workshop*, Brisbane, 8-9 August, 2009.

Effects of arousal state on readiness potential. *18th Australasian Psychophysiology Conference and general annual meeting of the society*, Hobart, 27-29 November, 2008.

Effects of attention to motor timing on movement-related brain activity. *Congress of the Italian Society of Experimental Psychology*, Como, 17-19 September, 2007.

Invited talks and seminars:

05 Oct 2016 Brain networks underlying intelligence, consciousness and brain disorders. Brescia.

01 Oct 2016 Theoretical and technical aspects to consider when using transcranial direct current stimulation. Workshop on: Transcranial electrical stimulation in individual rehabilitation after ictus. Monza.

25 Jan 2016 TMS-EEG: A novel technique to study cortico-cortical connectivity. University of Milan.

18 Nov 2015 Tracking cortico-cortical connectivity with TMS and EEG. Pre-conference Workshop of the Italian Society of Psychophysiology, Lucca.

30 Apr 2014 Three challenges in the neuroscience: the free will, the mirror neurons and the connectome. Brescia.

27 Jan 2014 Brain processes underlying sensory-motor interference during action observation. University of Padova.

28 Jun 2010 From Action to Perception: How the motor system can influence visual perception of actions. Brescia.

05 Jun 2007 Effect of attention on temporal production. II Workshop Cognitive Neuroscience Unit, Brescia.

- 11 Aug 2006 Role of the supplementary motor area in self-initiated movement preparation. Neuroimaging and Neuroinformatics group meeting. Melbourne.
- 12 Jul 2005 Early components of Event-related Potentials. University of Padova.
- 02 Feb 2004 Vision modulates somatosensory cortical processing. University of Padova.

Scientific organization of the following national and international symposia/workshops:

Symposia (2016): TMS-EEG and connectivity. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, 05 February.

Symposia (2013): Multimodal approach in the study of cortical connectivity. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, 1 July.

Workshop (2013): Non-invasive Electrical Brain Stimulation (tDCS, tACS, tRNS): Basic and Applied research. IRCCS Centro San Giovanni di Dio Fatebenefratelli, Brescia, 30 September.

Young investigators symposia (2012): The interface between executive control and automatic behavior. *XX Congress of the Italian Society of Psychophysiology*, Venice, 22-24 November.