James J. Bonaiuto

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Academic Appointments

2017-	*Postdoctoral Researcher*, CNRS UMR 5220, Institut des Sciences Cognitives – Marc Jeannerod, Lyon, France
2017-	*Honorary Research Associate*, Department for Movement and Clinical Neurosciences, University College London, London, UK
2013-2017	*Research Associate*, Department for Movement and Clinical Neurosciences / Wellcome Trust Centre for Neuroimaging, University College London, London, UK
2010-2013	*Postdoctoral Fellow*, California Institute of Technology, Pasadena, CA

Education

2010	PhD	Neuroscience, University of Southern California, Los Angeles, USA
2004	BSc	Computer Science, Drexel University, Philadelphia, USA

Funding

2019-	PI	European Research Council Consolidator Grant	2M EUR
2019-	Collaborator	French ANR	500K EUR

Honors and Awards

2019	Young Researcher Award, Institute of Cognitive Science, CNRS
2017	Best Poster Award, NYC Neuromodulation, NYC
2010-2012	Swartz Foundation Fellowship, Sloan-Swartz Center for Theoretical Neurobiology, California Institute of Technology
2008-2009	Neuroscience Graduate Program Fellowship, Univ. of Southern California
2009	Poster competition, 2nd place, Neuroscience Department Retreat, Univ. of Southern California
2009	Outstanding Service Award, Neuroscience Graduate Program, Univ. of Southern California
2008	Outstanding Teaching Assistant Award, Biology Department, Univ. of Southern California
2004-2006	Joint Initiative Graduate Merit Fellowship, Univ. of Southern California
2004	Upsilon Pi Epsilon, Honor Society for Computing and Information Disciplines, Drexel Univ.
2000-2004	Drexel Univ. Dean's List
1999-2004	A.J. Drexel Scholarship, Drexel Univ.

Mentoring & (Co-)supervision

Doctoral Students	Awarded:	**Masters Students**	Awarded:	**Interns**
Sebastien Kircherr	in progress	Jeff Inglis	2017	Marco de Luca
Alice Massera	in progress	Isabella Varsavsky	2017	Anita Maria Rominto
Toan Nong	in progress	Lindsay Chemet	2018	Raymundo Ramirez Pedraza

Academic Service

Editorial boards

2013- Review Editor, Frontiers in Evolutionary Neuroscience
2011 Program Committee, Conference on Artificial General Intelligence, Mountain View, CA

Ad hoc reviewer

Review statistics available at: https://publons.com/researcher/435256/james-bonaiuto/peer-review/
eLife, *NeuroImage*, *Neuroscience & Biobehavioral Reviews*, *Scientific Reports*, *Journal of Neurophysiology*, *PLOS One*, *Neuropsychologia, European Journal of Neuroscience*, *Journal of Neural Engineering*, *Frontiers in Neuroscience*, *Frontiers in Integrative Neuroscience*, *Interaction Studies*, *Neural Networks*, *Psychological Review*, *Cortex, Frontiers in Psychology*, *Artificial Life*, *Cognitive Processing*, *Frontiers in Evolutionary Neuroscience*, *Current Zoology*, *Journal of Experimental Psychology*, *Neuroscience Research*, *Cerebral Cortex*, *IEEE International Conference on Development and Learning and on Epigenetic Robotics*

Elected representative

2008-2009 Student member of Neuroscience Graduate Program curriculum, executive and advisement committees, Univ. of Southern California
2008-2009 President of the Neuroscience Graduate Organization, Univ. of Southern California

Memberships

Organizations

2011- Society of Neuroscience
2016 International Congress of Infant Studies
2009 Organization of Computational Neuroscience

Advisory boards

2017- Scientific Advisory Board, BrainBox Initiative

Teaching Experience

2019	Organizer and Lecturer	tDCS Foundation Workshop, Institut des Sciences Cognitives / BrainBox Initiative
2019	Organizer and Lecturer	Markerless Kinematic Tracking from Video using DeepLabCut, Institut des Sciences Cognitives
2018	Lecturer	SPM M/EEG, University College London
2017	Lecturer	Cognitive Neuroscience and Cognitive Neuropsychology, Birbeck University of London
2009	Lecturer	Transcranial Magnetic Stimulation Course, University of Southern California
2009	Lecturer	Neural Models of Visually Guided Behavior, University of Southern California
2009	Lecturer	Brain Theory and Artificial Intelligence, University of Southern California
2009	Teaching Assistant	Organismal Biology and Evolution, University of Southern California
2008	Teaching Assistant	Cell Biology and Physiology, University of Southern California
2007	Co-Instructor	Matlab Programming, University of Southern California
2006-2007	Teaching Assistant	Neurobiology, University of Southern California

Presentations

Conferences and workshops

2018	Invited talk	BrainBox Initiative Conference
2017	Conference symposium	MEG UK
2017	Workshop	tDCS Foundation Workshop
2016	Conference symposium	Neuroinformatics
2016	Conference symposium	MEG UK
2016	Invited talk	BrainBox Initiative Conference
2016	Workshop	tDCS Foundation Workshop
2014	Workshop	Motor control and rehabilitation
2012	Invited talk	Neuromorphic Engineering Summer School
2011	Nanosymposium	Neural Control of Movement
2010	Workshop	Sloan-Swartz Centers for Theoretical Neurobiology Meeting
2009	Workshop	IJCMM Workshop on Neurodynamics
2009	Workshop	Modeling Spatial Cognition Workshop
2006	Conference symposium	Evolution of Language (EVOLANG)
2006	Invited talk	Embodied Communication II: An Integrated Perspective
2006	Invited talk	Embodied Communication, Joint Action, Social Understanding
2005	Workshop	International Workshop on Attention and Performance in Computer Vision (WAPCV'05)

Invited talks

Institut de Neurosciences de la Timone (Marseille), Instituto Tecnológico Autónomo de México (Mexico City), Tohoku University (Sendai), Universita di Parma, German Primate Center (DPZ), Grenoble Institute of Technology, University of Bielefeld, University of Queensland

Publications

Statistics *(retrieved using Google Scholar on 08/12/2019)*
h-index: 17
i10-index: 26
Total citations: 996
Average citations per article: 32.13

Journal Articles

A full list of my journal publications can be found at
https://scholar.google.com/citations?hl=en&user=MInHANgAAAAJ
** indicates shared first author*

1. **Bonaiuto JJ,** Afdideh F, Ferez M, Wagstyl K, Mattout J, Bonnefond M, Barnes GR, Bestmann S (under review) Estimates of cortical column orientation improve MEG source inversion. bioRxiv doi: https://doi.org/10.1101/810267/.
2. Bunday KL, Betti S, **Bonaiuto JJ**, Lemon RN, Orban G, Davare M. (under review) Mapping connectivity between the premotor cortex and contralateral primary motor cortex. bioRxiv doi: https://doi.org/10.1101/743351.
3. Little* S, **Bonaiuto* J**, Barnes G, Bestmann S. (2019) Human motor cortical beta bursts relate to movement planning and response errors. bioRxiv doi: https://doi.org/10.1101/384370, *PloS Biology*, 17(10): e3000479.
4. Tzovara A, Meyer SS, **Bonaiuto JJ**, Abivardi A, Dolan RJ, Barnes GR, Bach DR (2019) High-precision magnetoencephalography for reconstructing amygdalar and hippocampal oscillations during prediction of safety and threat. *Human Brain Mapping*, 40(14): 4114-4129.
5. Rayson H, **Bonaiuto JJ**, Ferrari PF, Chakrabarti B, Murray L (2019) Building blocks of joint attention: Sensitivity to having one's own gaze followed in early infancy. *Developmental Cognitive Neuroscience,* 37: 100631.

6. Coudé G, Toschi G, Festante F, Bimbi M, **Bonaiuto JJ**, Ferrari PF (2019) Grasping neurons in the ventral premotor cortex of macaques are modulated by social goals. *Journal of Cognitive Neuroscience,* 31(2): 299-313.
7. **Bonaiuto JJ**, Meyer SS, Little SJ, Rossiter HE, Callaghan MF, Dick F, Barnes GR, Bestmann S (2018) Lamina-specific cortical dynamics in human visual and sensorimotor cortices. bioRxiv doi: https://doi.org/10.1101/226274, *eLife,* e33977.
8. Little SJ, **Bonaiuto JJ**, Meyer SS, Lopez J, Bestmann S, Barnes GR (2018) Quantifying the performance of MEG source reconstruction using resting state data. bioRxiv doi: https://doi.org/10.1101/248252, *NeuroImage,* 181(1): 453-460.
9. **Bonaiuto JJ**, Rossiter H, Meyer SS, Adams N, Little SJ, Callaghan MF, Dick F, Bestmann S, Barnes GR (2018) Non-invasive laminar inference with MEG: Comparison of methods and source inversion algorithms. bioRxiv doi: https://doi.org/10.1101/147215, *NeuroImage,* 167: 372-383.
10. Rayson H, **Bonaiuto JJ**, Ferrari PF, Murray L (2017) Early maternal mirroring predicts infant motor system activation during facial expression observation. *Scientific Reports*, 7: 11738.
11. Hannah R, Modi S, **Bonaiuto JJ**, Rothwell JC (2017) Enhanced biasing effect of prior knowledge on perceptual decision processes following continuous theta burst stimulation of motor cortex. *Clinical Neurophysiology*, 128(3): e95-e96.
12. Rayson H, Parsons C, Young K, Goodacre T, Kringelbach M, **Bonaiuto JJ**, McSorley E, Murray L (2017) Effects of Infant Cleft Lip on Adult Gaze and Perceptions of 'Cuteness'. *Cleft Palate-Craniofacial Journal,* 54(5): 562-570.
13. **Bonaiuto JJ**, de Berker A, Bestmann S (2016). Response repetition biases in human perceptual decisions are explained by activity decay in competitive attractor models. *eLife*, e20047.
14. Meyer SS, **Bonaiuto JJ**, Lim M, Rossiter H, Waters S, Bradbury D, Bestmann S, Brookes M, Callaghan MF, Weiskopf N, Barnes GR (2016). Flexible head-casts for high spatial precision MEG. *Journal of Neuroscience Methods*, 276(30): 38-45.
15. Lametti DR, Oostwoud Wijdenes L, **Bonaiuto JJ**, Bestmann S, Rothwell JC (2016) Cerebellar tDCS Dissociates the Timing of Perceptual Decisions from Perceptual Change in Speech. *Journal of Neurophysiology*, 116(5): 2023-2032.
16. Rayson H, **Bonaiuto JJ**, Ferrari PF, Murray L (2016) Mu desynchronization during observation and execution of facial expressions in 30-month-old children. *Developmental Cognitive Neuroscience*, 19: 279-287.
17. Hämmerer* D, **Bonaiuto* JJ**, Kleine-Flugge* M, Bestmann S (2016) Selective alteration of human value decisions with medial frontal tDCS is predicted by changes in attractor dynamics. *Scientific Reports*, 6.
18. Bestmann S, de Berker A, **Bonaiuto JJ** (2015) Understanding the behavioural consequences of noninvasive brain stimulation. *Trends in Cognitive Sciences*, 19(1): 13-20.
19. **Bonaiuto JJ**, Arbib MA (2015) Learning to grasp and extract affordances: the Integrated Learning of Grasps and Affordances (ILGA) model. *Biological Cybernetics*, 109(6): 639-669.
20. **Bonaiuto JJ**, Bestmann S (2015) Understanding the nonlinear physiological and behavioral effects of tDCS through computational neurostimulation. *Progress in Brain Research,* 222: 75-103.
21. Christopoulos* V, **Bonaiuto* JJ**, Andersen RA (2015) A biologically plausible computational theory for value integration and action selection in decisions with competing alternatives. *PLOS Computational Biology*, 11(3): e1004104.
22. Christopoulos V, **Bonaiuto JJ**, Kagan I, Andersen RA (2015) Inactivation of parietal reach region affects reaching but not saccade choices in internally-guided decisions. *Journal of Neuroscience*, 35(33): 11719-28.
23. Arbib MA, **Bonaiuto JJ**, Bornkessel-Schlesewsky I, Kemmerer D, MacWhinney B, Nielsen F, Oztop E (2014) Action and language mechanisms in the brain: Data, models and neuroinformatics. *Neuroinformatics (special issue on Action and Language)*, 12(1): 209-225.

24. Arbib MA, Plangprasopchok A, **Bonaiuto JJ**, Schuler R (2014) A neuroinformatics of brain modeling and its implementation in the Brain Operation Database BODB. *Neuroinformatics (special issue on Action and Language),* 12(1): 5-26.
25. **Bonaiuto JJ** (2014) Associative learning is necessary but not sufficient for mirror neuron development. *Behavioral and Brain Sciences,* 37(2): 194-195. Commentary on Cook, R., Bird, G., Catmur, C., Press, C., Heyes, C. "Mirror neurons: from origin to function".
26. **Bonaiuto JJ**, Arbib MA (2014) Modeling the BOLD correlates of competitive neural dynamics. *Neural Networks,* 49: 1-10.
27. Demiris Y, Aziz-Zadeh L, **Bonaiuto JJ** (2014) Information processing in the mirror neuron system in primates and machines. *Neuroinformatics (special issue on Action and Language),* 12(1): 63-91.
28. Arbib MA, **Bonaiuto JJ** (2012) Multiple levels of spatial organization: World graphs and spatial difference learning. *Adaptive Behavior,* 20(4): 287-303.
29. **Bonaiuto JJ**, Arbib MA (2010) Extending the mirror neuron system model, II: What did I just do? A new role for mirror neurons. *Biological Cybernetics*, 102(4): 341-359.
30. Arbib MA, **Bonaiuto JJ**, Jacobs S, Frey S (2008) Tool use and the distalization of the end-effector. *Psychological Research*, 73(4): 441-462.
31. Arbib MA, **Bonaiuto JJ** (2007) From grasping to complex imitation: Mirror systems on the evolutionary path to language. *Mind and Society* (special issue on *Language Evolution*), 7(1): 43-64.
32. **Bonaiuto JJ,** Rosta E, Arbib MA (2007) Extending the mirror neuron system model, I: Audible actions and invisible grasps. *Biological Cybernetics*, 96: 9-38.
33. **Bonaiuto JJ**, Itti L (2006) The use of attention and spatial information for rapid facial recognition in video. *Image and Vision Computing*, 24(5): 557-563.

Papers in progress

1. Ihle SJ, **Bonaiuto JJ**, Bestmann S, Stephan KE, Barnes GR, Heinzle J. Dynamic causal modeling of layered magnetoencephalographic event-related responses.
2. **Bonaiuto* JJ,** Little* SJ, Neymotin SA, Jones SR, Barnes GR, Bestmann S. Distinct deep and superficial cortical inputs cause beta bursts in human sensorimotor cortex.

Books and book chapters

1. Arbib M, **Bonaiuto JJ** (Eds.) (2016) From Neuron to Cognition via Computational Neuroscience. MIT Press.
2. **Bonaiuto JJ**, Arbib M (2016) "Linking models with empirical data: The Brain Operation Database", In: M Arbib, JJ Bonaiuto (Eds.), From Neuron to Cognition via Computational Neuroscience. MIT Press.
3. **Bonaiuto JJ** (2016) "Reach and grasp: Control, development and recognition", In: M Arbib, JJ Bonaiuto (Eds.), From Neuron to Cognition via Computational Neuroscience. MIT Press.
4. **Bonaiuto JJ** (2014) "Affordances and action recognition", In: K Ikeuchi (Ed.), Computer Vision: A Reference Guide. Springer.
5. **Bonaiuto JJ**, Thórisson KR (2007) "Towards a neurocognitive model of realtime turntaking in face-to-face dialogue", In: I Wachsmuth, M Lenzen, G Knoblich (Eds.), Embodied Communication in Humans and Machines. Oxford Univ. Press.
6. Kopp S, Wachsmuth I, **Bonaiuto JJ**, Arbib M (2007) "Imitation in embodied communication – from monkey mirror neurons to artificial humans", In: I Wachsmuth, M Lenzen, G Knoblich (Eds.), Embodied Communication in Humans and Machines. Oxford Univ. Press.

Technological and Other Scientific Innovations

2016-2018 Developed SensorimotorDB, a neuroinformatics system for organizing and visualizing neurophysiological and behavioral data, as well as running analyses through integration with R and Matlab. This system is currently in use in labs at the CNRS

	(Ferrari), University of Parma (Bonini), German Primate Center (Kagan), and University College London (Kraskov).
2008-2016	Developed the Brain Operation Database (BODB), a publicly available neuroinformatics system for documenting how computational models for cognitive or systems neuroscience are linked to the experimental data used to design and test them.