

PERSONAL INFORMATION

Antonino Errante

 Department of Medicine and Surgery, University of Parma, Via Volturno, 39, 43125, Parma (IT)



 <https://www.researchgate.net/profile/Antonino-Errante>

Qualification Licence of professional practice in Psychology, nr. 8021, section A, Order of Psychologists, Emilia Romagna, Italy.

WORK EXPERIENCE

From 09/2021

Research Fellow

Neuroradiology Unit, University Hospital of Parma, Parma, Italy

- Research Project: "Effectiveness of Action Observation Therapy based on Virtual Reality technology in motor rehabilitation of paretic stroke patients: a randomized clinical trial." Funding: Italian Ministry of Health (MOE), Starting Grant SG-2019-12370506. Main role: Principal Investigator (2021-2024).

From 03/2019 – to 09/2021

Post-Doctoral Fellow

Department of Medicine and Surgery, University of Parma, Parma, Italy

- Research Project: "Functional and structural changes of the cerebral cortex in children affected by unilateral cerebral palsy after application of Action observation Therapy based on pathological model". Supervisor: Prof. Leonardo Fogassi. Main activities: planning of functional MRI experimental design, data collection and analysis, MRI operator for GE 3T systems (>200 h), preparation of edited audio-videos stimuli, papers writing, experience in writing research Grant projects.

From 03/2018 – to 03/2019

Post-Doctoral Fellow

Department of Psychology, University of Turin, Turin, Italy

- Research Project: "The body in human and monkey brain". Training of non-human primates. Kinematic recordings and analysis of monkey movements during visuo-tactile stimulation and rubber-hand illusion. Supervisor: Prof. Francesca Garbarini.

From 11/2014 – to 11/2017

Ph.D. student in Neuroscience

Department of Medicine and Surgery, University of Parma, Parma, Italy

- Supervisor: Prof. Leonardo Fogassi. Main activities: planning of functional MRI experimental design, data collection and analysis, MRI operator for GE 3T systems (>150 h), preparation of edited videos of hand actions, papers writing, experience in writing research Grant projects.

From 04/2014 – to 10/2014

Research Assistant

Department of Psychology, University of Messina, Italy

- Supervisor: Prof. Maria Quattropani. Main activities: Neuropsychological testing, clinical data manager.

From 11/2013 – to 04/2014

Research Assistant

Department of Psychology, University of Messina, Italy

- Supervisor: Prof. Massimo Ingrassia. Main activities: psychological testing, validation of cross-cultural psychological tests.

EDUCATION AND TRAINING

From 01/2022
(4 years – in course)**Post Graduate training program in Psychotherapy**

Academy of Developmental Neuropsychology (ANSVI), Parma, Italy.

Specialization area: Developmental Neuropsychology, psychodiagnostics and planning of rehabilitation and psychotherapeutic treatments.

From 11/2014 to 11/2017

Ph.D. in Neuroscience

Department of Medicine and Surgery, University of Parma, Italy.

- Thesis Project: “Modulating the Mirror Neuron System by action observation in children with Unilateral Cerebral Palsy”. Supervisor: Prof. Leonardo Fogassi.

From 11/2014 to 11/2017

II Level University Master’s Course in Clinical Neuropsychology

European University of Rome; Skinner Institute, Rome, Italy.

- Thesis: Auditory Representation of actions in apraxia: a single case study. Supervisor: Prof. Luigi Troiano.

02/2015

Licence/Qualification of professional practice in Psychology, nr. 8021, section A

Order of Psychologists, Emilia Romagna, Italy.

From 10/2011 to 10/2013

Master’s Degree (Laurea Magistrale) in Psychology

Department of Psychology, University of Messina, Italy.

- Thesis: The spatial representation of social roles: a cross-cultural study on the Spatial Agency Bias. Summa cum laude. Tutor: Prof. Massimo Ingrassia.

From 10/2008 to 10/2011

Bachelor’s Degree (Laurea Triennale) in Psychological Science and Techniques

Faculty of Educational Science, University of Messina, Italy

- Thesis: Assessment and treatment of the obsessive-compulsive disorder in children. Tutor: Prof. Giuseppina Filippello.

CLINICAL TRAINING

From 03/2022 to 06/2022

Training in Developmental Clinical Neuropsychology

Child Neuropsychiatry service, AUSL Parma, Italy

From 04/2014 to 10/2014

Training in Clinical Neuropsychology

Neurorehabilitation Institute “Il Mandorlo”, Reggio Calabria, Italy

From 11/2013 to 04/2014

Training in Clinical Psychology

Psychiatric division of “Villa S. Agata”, Reggio Calabria, Italy

From 02/2013 to 04/2013 **Training in Clinical Psychology**
 Psychiatric division of "Villa S. Agata", Reggio Calabria, Italy

From 02/2013 to 04/2013 **Training in Developmental Neuropsychology**
 Centre for rehabilitation of developmental disorders "B. Skinner", Reggio Calabria, Italy

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1 Proficient	C1 Proficient	B2 Independent	B2 Independent	C1 Proficient user

ADDITIONAL INFORMATION

Collaborations

- Department of Psychology, University of Turin, Italy
- Molinette Hospital, AOU City Health and Science of Turin, Italy
- Coma Research Centre, Neurological Institute C. Besta, Milan, Italy
- Rehabilitation Unit for severe developmental disability, IRCCS of Reggio Emilia, Italy
- IRCCS Stella Maris Foundation, Pisa, Italy
- Cardinal Ferrari Centre, S. Stefano Rehabilitation, Parma, Italy

Collaboration in Research Projects

- 2022-2025. PRIN "The Neurophysiological Bases of Biological Motion: From Laboratory to Clinics". Main role: Research assistant. PI: Prof. Leonardo Fogassi. University of Parma.
- 2022-2025. Project "ACT-ON-DIP: action observation tele-rehabilitation for upper limb in children with diplegic cerebral palsy". Main role: Research assistant. PI: Dott. Giuseppina Sgandurra. IRCCS Stella Maris, Pisa.
- 2021-2023. Project "Action imitation and Mirror Neuron System activation in patients with Alzheimer Diseases. Main role: Research assistant. PI: Dott. Marco Spallazzi. University Hospital of Parma
- 2021-2023. Project "Activation of the Mirror Neuron System during observation and execution of facial expressions in patients with Moebius Syndrome". Main role: Research assistant. PI: Dott. Bernardo Bianchi. University Hospital of Parma.
- 2020-2022. Project "Effectiveness of action observation therapy based on pathological ameliorative model in the motor rehabilitation of hemiplegic children: a randomized-controlled clinical trial". Main role: Research assistant. PI: Prof. Leonardo Fogassi. University of Parma.
- 2018-2020. Project "Audio-visual processing of mouth actions in patients with Disorders of Consciousness". Main role: Research assistant. PI: Dott.ssa Maria Grazia Bruzzone. Coma Research Centre, Neurological Institute C. Besta, Milan.
- 2018-2019. Project "The body in human and monkey brain". Main role: Research assistant. PI: Prof. Francesca Garbarini, University of Turin.

- 2017-2019. Project “Activation of the Mirror Neuron System in children with Unilateral Cerebral Palsy”. Main role: Research assistant. PI: Prof. Leonardo Fogassi. University of Parma.
- 2015-2016. Project “The role of navigated transcranial magnetic stimulation (NEXTIM) for pre-surgery mapping of spatial and numerical functions in patients with brain tumors”. Main role: Research assistant. PI: Dott. Antonino Germanò, University Hospital of Messina.

Research interests

- clinical neuropsychology and rehabilitation
- action coding (e.g., action observation; motor imagery, action execution; visuomotor representations; mirror neurons)
- parieto-frontal circuits in the human/primate brain
- role of subcortical structures during action observation/execution
- Action Observation Therapy in children with Unilateral Cerebral Palsy
- neuroimaging techniques, especially functional magnetic resonance imaging (fMRI) and Diffusion Tensor Imaging (DTI) probabilistic tractography

Technical expertise

- fMRI data acquisition: >300 hours of scanner operation experience (GE Discovery MR750 3T)
- fMRI imaging analysis: Brain Voyager QX, SPM12, MarsBar, Rex, Anatomy toolbox, MRICron, Caret, PRONTO
- DTI processing and tractography: FSL, TrackVis, DSI Studio
- Neuropsychological assessment in children, adults, and elderly people
- Programming environments: MATLAB, E-Prime 2.0
- Motion tracking system: Tracker software
- Statistical packages: SPSS 21, Statistica
- Video and photo editing: Adobe Photoshop, Affinity Photo, Flash, Illustrator, Adobe Premiere, Final Cut Pro, VirtualDub
- Audio Editing: Praat, Cool Edit Pro
- 3D Design: Poser Pro 2014
- Basic processing: Microsoft Office including Word, Excel, PowerPoint, Publisher, FrontPage

Membership

- ESMRMB – European Society for Magnetic Resonance
- OHBM – Organization for Human Brain Mapping
- FENS – Federation of European Neuroscience Societies
- SFN – Society for Neuroscience
- SIPF – Italian Society of Psychophysiology

Editorial and reviewer activity

From 2019, reviewer for the following International Journal, in the field of Cognitive Neuroscience: Scientific Reports, Neuroimage, Human Brain Mapping, Frontiers in Neurology.

Awards and Fellowship

2020 – Starting Grant SG-2019-12370506. (130.000 €). Project Title: Effectiveness of Action Observation Therapy based on Virtual Reality technology in motor rehabilitation of paretic stroke patients: a randomized clinical trial. Italian Ministry of Health.

PUBLICATIONS	<ul style="list-style-type: none"> ▪ Errante, A., Rossi Sebastiano, A., Ziccarelli, S., Bruno, V., Rozzi, S., Pia, L., ... & Garbarini, F. (2022). Structural connectivity associated with the sense of body ownership: a diffusion tensor imaging and disconnection study in patients with bodily awareness disorder. <i>Brain communications</i>, 4(1), fcac032. ▪ Ziccarelli S, Errante A, Fogassi L. (2022). Decoding point-light displays and fully visible hand grasping actions within the action observation network. <i>Hum Brain Mapp</i>. doi: 10.1002/hbm.25954. Epub ahead of print. PMID: 35611407. ▪ Errante, A., Saviola, D., Cantoni, M., Iannuzzelli, K., Ziccarelli, S., Togni, F., ... & De Tanti, A. (2022). Effectiveness of action observation therapy based on virtual reality technology in the motor rehabilitation of paretic stroke patients: a randomized clinical trial. <i>BMC neurology</i>, 22(1), 1-11.
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	<ul style="list-style-type: none"> ▪ Verzelloni, J., Errante, A., Beccani, L., Filippi, M., Bressi, B., Cavuto, S., ... & Ferrari, A. (2021). Can a pathological model improve the abilities of the paretic hand in hemiplegic children? The PAM-AOT study protocol of a randomised controlled trial. <i>BMJ open</i>, 11(12), e053910. ▪ Errante, A., Ziccarelli, S., Mingolla, G., & Fogassi, L. (2021). Decoding grip type and action goal during the observation of reaching-grasping actions: A multivariate fMRI study. <i>NeuroImage</i>, 243, 118511. ▪ Ardizzi, M., Ferroni, F., Umiltà, M.A., Pinardi, C., Errante, A., Ferri, F., Fadda, E., Gallese, V. (2021). Visceromotor roots of aesthetic evaluation of pain in art: an fMRI study, <i>Social Cognitive and Affective Neuroscience</i>. nsab066. ▪ Errante, A., Ziccarelli, S., Mingolla, G., & Fogassi, L. (2021). Grasping and manipulation: neural bases and anatomical circuitry in humans. <i>Neuroscience</i>, 458, 203-212. ▪ Errante, A., & Fogassi, L. (2021). Functional Lateralization of the Mirror Neuron System in Monkey and Humans <i>Symmetry</i>, 13(1), 77. ▪ Basagni, B., Luzzatti, C., De Tanti, A., Bozzetti, F., Crisi, G., Pinardi, C., ... Errante, A., & Fogassi, L. (2021). Some evidence on Gerstmann's syndrome: A case study on a variant of the clinical disorder. <i>Brain and Cognition</i>, 148, 105679. ▪ Errante, A., & Fogassi, L. (2020). Activation of cerebellum and basal ganglia during the observation and execution of manipulative actions. <i>Scientific reports</i>, 10(1), 1-15. ▪ Errante, A., Di Cesare, G., Pinardi, C., Fasano, F., Sghedoni, S., Costi, S., ... & Fogassi, L. (2019). Mirror Neuron System Activation in Children with Unilateral Cerebral Palsy During Observation of Actions Performed by a Pathological Model. <i>Neurorehabilitation and Neural Repair</i>, 33(6), 419-431. ▪ Errante, A., & Fogassi, L. (2019). Parieto-frontal mechanisms underlying observation of complex hand-object manipulation. <i>Scientific Reports</i>, 9(1), 348. ▪ Errante, A., Bozzetti, F., Sghedoni, S., Bressi, B., Costi, S., Crisi, G., ... & Fogassi, L. (2019). Explicit motor imagery for grasping actions in Children with spastic Unilateral Cerebral Palsy. <i>Frontiers in neurology</i>, 10, 837. ▪ Errante, A., Saviola, D., Fasano, F., Basagni, B., Alinovi, S., Bosetti, S., ... & Fogassi, L. (2019). Application of an Intensive Rehabilitation Program After Very Late Recovery of Consciousness: A Single-Case Neurorehabilitation and Neuroimaging Study. <i>Journal of Central Nervous System Disease</i>, 11, 1179573519843492. ▪ Basagni, B., Errante, A., Pinardi, C., De Gaetano, K., Crisi, G., De Tanti, A., Fogassi, L. (2018). Rehabilitation of Unilateral Spatial Neglect: A combined behavioral and fMRI single-case study. <i>Neuropsychology</i>, 33(3):343-357. ▪ Di Cesare G., Errante A., Marchi M., Cuccio V. (2017). Language for action: motor resonance during the processing of human and robotic voices. <i>Brain and Cognition</i>, 118: 118-124. ▪ Di Cesare, G., Marchi, M., Errante, A., Fasano, F., & Rizzolatti, G. (2017). Mirroring the Social Aspects of Speech and Actions: The Role of the Insula. <i>Cerebral Cortex</i>, 1: 1-10. ▪ Di Cesare, G., Fasano, F., Errante, A., Marchi, M., Rizzolatti, G. (2016). Understanding the internal states of others by listening to action verbs. <i>Neuropsychologia</i>, 89, 172-179.
<p>POSTER/TALKS</p>	<ul style="list-style-type: none"> ▪ Ziccarelli S., Errante, A., Mingolla, G., Fogassi, L. Decoding means and outcome during action observation: a multivariate fMRI study. OHBM 2021, June 21-25, Virtual Conference. ▪ Basagni, B., Luzzatti, C., Errante, A., Pinardi, C., De Tanti, A., Fogassi, L. New perspectives on Gerstmann's syndrome: a single case study. VII Congresso della Società Italiana di Neuropsicologia, November 23-24, 2018, Rome, Italy. ▪ Errante, A. and Fogassi, L. Beyond the motor repertoire: neural mechanisms underlying observation of complex hand-object manipulation. 11th FENS Forum of Neuroscience, July 7-11, 2018, Berlin, Germany. ▪ Errante, A. Rehabilitation of Unilateral Spatial Neglect: a single-case neuropsychological and fMRI study".

	<p>Convegno: Negligenza Spaziale e Emianopsia, Diagnosi differenziale e percorsi di cura innovativi. June 7, 2018, Fontanellato (PR), Italy.</p> <ul style="list-style-type: none">▪ Errante, A. "Modulating the Mirror Neuron System by action observation in right Unilateral Cerebral Palsy". European Society of Magnetic Resonance for Medicine and Biology, October 19-21 2017, Barcelona, Spain.▪ Di Cesare, G., Marchi, M., Errante, A., Fasano, F., Rizzolatti, G. Mirroring the action style in the insula across auditory and visual modalities. 10th FENS Forum of Neuroscience, July 2-6 2016, Copenhagen, Denmark.▪ Errante, A., Di Cesare, G., Fasano, F., Costi, S., Sghedoni, S., Bressi, B., Volpe, V., Ferrari, A., Fogassi, L. Modulating the motor system by action observation in right hemiplegic cerebral palsy: an fMRI study. XXIV Congresso Nazionale Società Italiana di Psicofisiologia. Brains in Action: dalle Neuroscienze di Base ai Sistemi Sociali Complessi. Milano. 27-29 Ottobre 2016.▪ Errante, A., Sghedoni, S., Bressi, B., Di Cesare, G., Costi, S., Volpe, V., Ferrari, A., Fogassi, L. Explicit Motor Imagery ability for Grasping actions in Children with Hemiplegic Cerebral Palsy. Convegno intersocietario SIMFER-SINPIA. La riabilitazione delle funzioni adattive in età evolutiva. 12-13 Dicembre, Brescia.▪ Falzone A, Gangemi A, Errante A, et al. Correlations Between Linguistic Phenotype and Genetic Alterations in Rett Syndrome. EuroAsianPacific Joint Conference on Cognitive Science, 11 September 2015, Turin, Italy.
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