Tommaso Ghilardi, Ph.D.

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Work Experience

2018 – · · · ·   **Ph.D., Donders Center for Cognition** in developmental cognitive psychology. I am part of the the MOTION European project (MSCA): "Mobile Technology for Infant Social-Cognitive Neuroscience working in the **BABYBrain** group.. My main interest is understanding how infants are able to extract complex statistical information from action sequences and use this knowledge to predict future actions. I use EEG and fNIRS to explore the neural correlates of action observation and prediction in infancy. I use behavioural measures with both adults and infants (e.g. eye-tracking) to study the learning of statistical information embedded in action sequences.

2020 – · · · ·   **DCC lab committee.** As part lab committee of the Donders Center for Cognition I represent the Baby & Child Research Center in the meetings held to discuss laboratory management and equipment.

2019 – 2022   **DCC EEG lab Support.** As part of the EEG lab support group of the Donders Center for Cognition my tasks are to train researchers who want to use the EEG labs by teaching practical and administrative steps of a session. I also take care of the supplies of the EEG labs.

2015 – 2018   **Intern at Affiliative Behavior and Physiology Lab.** I had the opportunity to be involved in physiological (ECG, EMG, EDA) and behavioural studies in the context of social interactions.

2016 – 2017   **Thesis Research during Erasmus+ Japan.** Thesis research projects conducted during a five months internship to the Department of Neurobiology and Behavior of Nagasaki University, Japan. The influence of ethnicity in the recognition ability of emotional faces. Research project that aimed to investigate how the ability to recognize emotional faces with graded emotional intensities could be affected by the ethnicity of the stimulus. Study conducted analyzing 64 channel EEG, ECG and behavioural data.

Teaching

2021 – 2022   **Thesis supervision**. Supervision of 3 master students in the preparation of their thesis.

2020 – 2021   **Teacher assistant "Brain & Cognition 1".** The goal of this course was to provide insight into the way which these behaviours and cognitive processes can be explained from the workings of the brain. As assistant teacher I weekly supervised groups of students guiding them through the work-group material and administering tests.

Teacher assistant for the EEG hands-on session of the "Developmental Cognitive Neuroscience" course. I assisted during the EEG hands-on session of the Develepomental Cognitive Neuroscience course led by Sabine Hunnius. Goal of the class was to provide an hands-on introduction to EEG analysis of adult and infant EEG signal.

2017   **Lesson organizer of "Developmental Clinical Neuroscience".** I participated in the organization of the course material under the supervision of Professor Gianluca Esposito. Goal of the class was to provide an introduction to the Social and Affective Neuroscience and increase students multidisciplinary knowledge of physiological mechanism underlying social interaction.

2016   **Lesson organizer of "Social and Affective Neuroscience (SAN)".** I participated in the organization of the course material under the supervision of Professor Gianluca Esposito. Goal of the class was to: provide an introduction to the Social and Affective Neuroscience, increase students multidisciplinary knowledge of physiological mechanism underlying social interaction and improve students' skills regarding human physiology research. Lecture given: *"Processing Infant Direct Speech"*

Outreach

2021   **University promotional video.** Participation to the video series *"Donders Labs"* to talk about the Baby and Child Research Center (Video).

Scientific podcast. Participation to the podcast Scientificast talking about my research and more in general about infants' action prediction abilities (Episode).

2018 – 2021   **Divulgative blog.** Contribution to the MOTION European project (MSCA) blog.

Skills

Languages   Italian native speaker. Strong reading, writing and speaking competencies for English (C1 Advanced user certified by Cambridge English) and basic reading, writing and speaking competencies for Dutch.

Research techniques   EEG, fNIRS, Eye-tracking, ECG, EMG, EDA, Behavioural

Coding   Python   Matlab

R

Experiment design   Psychopy   Pavlovia

Presentation

Media Softwares   Photoshop, Premiere Pro, Illustrator.

Misc.   Github, Academic research, Teaching, Training, LaTeX typesetting.

Education

2016 – 2018	**M.Sc. Pychology-Neuroscience, Trento University, Italy** *First Class Honours.* Thesis title: *Ethnicity and gender modulate the recognition of emotional facial expressions.*
2013 – 2016	**B.Sc. Sciences and techniques of cognitive psychology, Trento University, Italy.**

Awards

2018	**Merit Award** 2017 edition Trento University.
2019	**Travel award** Sackler Colloquium "The Brain Produces Mind by Modelling"
2022	**Internationalization travel grant** Radboud internationalization grant.

Research

Journal Articles

1 Bonassi, A., **Ghilardi**, **T.**, Gabrieli, G., Truzzi, A., Borelli, J. L., Lepri, B., Shinohara, K., Esposito, G. Et al. (2021). The recognition of cross-cultural emotional faces is affected by intensity and ethnicity in a japanese sample. *Behavioral Sciences*, *11*(5), 59.

2 Bonassi, A., **Ghilardi**, **T.**, Truzzi, A., Cataldo, I., Azhari, A., Setoh, P., Shinohara, K. & Esposito, G. (2017). Dataset on genetic and physiological adults responses to social distress. *Data in brief*, *13*, 742–748.

Inproceedings

1 **Ghilardi**, **T.**, Meyer, M. & Hunnius, S. (2022). Predictive motor activation: Modulated by expectancy or predictability?, PsyArXiv. https://doi.org/10.31234/osf.io/e5vby

2 Poli, F., **Ghilardi**, **T.**, Mars, R. B., Hinne, M. & Hunnius, S. (2021). 8-month-old infants meta-learn from sparse evidence, PsyArXiv. https://doi.org/10.31234/osf.io/dc9s6

3 **Ghilardi**, T. (2021). Statistics in motion: Does the infant motor system predict actions based on their transitional probability?, Open Science Framework, RegisteredReport.