

Dunia Giomo

WORK EXPERIENCE (Research experience)

02/2023-31/01/2025

Adiunkt post-doc (postdoctoral researcher)

Institute of Psychology, Polish Academy of Sciences, Warsaw (PL)

- **Supervisor:** Dr. Tadeusz Kononowicz
- **Main project:** “Dynamics of neural processes underlying the monitoring of time errors in humans and rats”.
- **Main activities:**
 - design and set up of behavioral, neurostimulation (tDCS/tACS) and electrophysiology (EEG) experiments in human participants;
 - recruitment and data collection;
 - data analysis and dissemination of results.

11/2017-09/2022

PhD student

International School for Advanced Studies (SISSA), Trieste

- **Supervisor:** Prof. Domenica Bueti
- **Main project:** “The processing and learning of temporal patterns: from behaviour to computational models”.
- **Main activities:**
 - design and set up of behavioral experiments, specifically employing finger tapping tasks (reproduction of or synchronization with rhythmic and non-rhythmic temporal patterns), using custom-made devices for stimulus delivery and tapping signal acquisition;
 - recruitment and data collection;
 - data analysis and development of computational cognitive models underlying the learning, reproduction of and synchronization with rhythmic and non-rhythmic temporal patterns;
 - dissemination of results.
- **Side project:** “Time encoding in visual cortex using TMS”. **Activities:** collaboration in the data collection of Transcranial Magnetic Stimulation (TMS) experiments (neuronavigation and delivery of TMS).

03/2017-10/2017

Post-graduate student

International School for Advanced Studies (SISSA), Trieste

- **Supervisor:** Prof. Domenica Bueti
- **Main project:** “Temporal recalibration effects and eye movements”.
- **Main activities:**
 - setup/coding of eye-tracking experiments;
 - recruitment and data collection;
 - collaboration in data analysis;
 - dissemination of results.
- **Side project:** “Time encoding in visual cortex using TMS”. **Activities:** support in the data collection of Transcranial Magnetic Stimulation (TMS) experiments (neuronavigation and delivery of TMS).

12/2015-02/2017

Post-graduate trainee / Volunteering research assistant

Department of Neuroscience, University of Padova

- **Supervisor:** Prof. Carlo Semenza
- **Attività:**
 - setup/coding, data collection and support in the data analysis of behavioral experiments on **Psycholinguistics** and **Numerical Cognition**;
 - collaboration in the design and development of research protocols for language tasks;
 - help in data collection of fMRI-EEG experiments on executive functions.

EDUCATION AND TRAINING

- 11/2017-09/2022 **PhD in Cognitive Neuroscience**
International School for Advanced Studies (SISSA), Trieste
 - **Thesis:** “The processing and learning of temporal patterns: from behaviour to computational models”. **Supervisor:** Prof. Domenica Bueti. **Degree awarded cum laude.**
- 10/2006-04/2015 **Master Degree in Clinical-Dynamic Psychology**
University of Padova
 - **Thesis:** “Forms of psychosocial interventions in the school context”. **Supervisor:** Prof. Adriano Zamperini. **Final grade: 110/110 cum laude**
- 10/2003-07/2006 **Bachelor Degree in Psychology of personality and of interpersonal relationships**
University of Padova
 - **Thesis:** “The problem of objectivity in understanding mental phenomena”. **Supervisor:** Prof. Anna Fabriziani. **Final grade: 110/110 cum laude**

SCHOLARSHIPS

- 2017-2022 ▪ **Ministerial scholarship** (4 years + 9 months extension) for a **PhD in Cognitive Neuroscience** at International School for Advanced Studies (SISSA), Trieste.
- 2017 ▪ **Post-graduate scholarship** (3 months + 3 months extension) for research training in the field of cognitive neuroscience at International School for Advanced Studies (SISSA), Trieste.

PERSONAL AND TECHNICAL SKILLS

Lingua madre **Italiano**

Altre lingue

Inglese

COMPRESIONE		PARLATO		SCRITTURA
Ascolto	Lettura	Interazione	Produzione	
C1	C1	C1	C1	C1

Livelli: A1/2 Livello base B1/2 Livello intermedio C1/2 Livello avanzato
Quadro Comune Europeo di Riferimento delle Lingue

LABORATORY SKILLS and TECHNIQUES

- **Behavioral methods**
- **Neurostimulation methods** (TMS, tDCS, tACS)
- **Electrophysiology**
- **Eye-tracking** (SR Research Eye-Link)

COMPUTER SKILLS

- **Programming languages:** Matlab, R, Python, JavaScript, Stan (modelling language)
- **OS:** Windows, Linux (Ubuntu)
- **IDE/Code editors:** VS Code, Rstudio, Arduino IDE
- **Software/tools/libraries:**
 - **Experiment delivery:** Psychtoolbox, PsychoPy, E-Prime, jsPsych, Jatos (online deployment)
 - **EEG:** BrainVision Recorder, MNE-Python
 - **Neurostimulation:** Brainsight (neuronavigation), SimNIBS (simulations)
 - **Sound processing:** Audacity
 - **Others:** Inkscape, Adobe Photoshop, MS-Office

DATA ANALYSIS and STATISTICS SKILLS

- **Computational modelling** using Bayesian approach: definition of generative process/model, definition of prior distribution and likelihood function, parameter estimation, posterior prediction and data simulation, etc.;
- Univariate/multivariate **regression analysis:** selection of model family (LM, GLM, polynomial etc.), model diagnostics (assumptions checks, goodness of fit), stepwise model selection, post-hoc comparisons, effect plots, etc.;
- Univariate/multivariate **parametric and non-parametric statistical tests** for hypothesis testing;
- **Finger tapping data and analogous time series data:** event onset extraction, calculation of inter-onset-intervals (IOI), calculation of stimulus-event asynchrony, and of IOI variability; application of linear and circular statistics; application of time-frequency analysis approach; application of transformation techniques and ML algorithm (Procrustes analysis, dynamic time warping, k-means clustering, forward algorithm, etc.)

CLINICAL SKILLS

- Neuropsychological assessment (standard and ad hoc protocols)
- Psychodiagnostics assessment (standard testing and clinical interview protocols)
- Test scoring and clinical report writing

PUBLICATIONS

- 2022 Giomo, D. (2022). "The processing and learning of temporal patterns: from behaviour to computational models" (*PhD thesis*).
- 2020 Zanini, C., Rugani, R., **Giomo, D.**, Peressotti, F., Franzon, F. (2020). "Effects of animacy on the processing of morphological Number: a cognitive inheritance?". *Word Structure*, 13(1):22-44. DOI: <https://doi.org/10.3366/word.2020.0158>
- 2018 Parsons, B., **Giomo, D.**, Bueti, D. (2018). "Saccadic temporal recalibration alters action and perception". *Journal of Vision, Abstract Issue VSS*, Vol.18(10):1003. DOI: <https://doi.org/10.1167/18.10.1003>

CONFERENCES, SEMINARS AND WORKSHOPS

- 2024 **Giomo D.**, Bilgin S.N., Kononowicz T.W., “Probing the causal role of fronto-central and pre-frontal areas in Temporal Error Monitoring”. *FAsT: French Association for Timing (2024)*, Saclay (France) 17-18 October 2024 – **poster presentation**
- 2023 **Giomo D.**, Bilgin S.N., Kononowicz T.W., “Time-dependent and time-independent sources of temporal error monitoring”. *Timing Research Forum 3*, Lisbon 4-6 October 2023 – **poster presentation**
- 2022 **Giomo D.**, Mancinelli F., Fortunato G., Bueti D., “Learning the statistical properties of temporal patterns”. *Trieste Encounters on Cognitive Science: Bringing together Predictive Processes and Statistical Learning*, Trieste 19-22 July 2022 – **poster presentation**
- 2019 **Giomo D.**, Brasselet R., Bueti, D., “Global and local deviance effects on the processing of temporal sequences”. *Timing Research Forum 2*, Querétaro (Mexico) 15-17 October 2019 – **poster presentation**
- 2018 **Giomo D.**, Parsons B.D., Bueti, D., “Sensorimotor synchronization and temporal order judgements reveal saccadic temporal recalibration”. *41st European Conference on Visual Perception*, Trieste 26-30 August 2018 – **poster presentation**
- 2017 Franzon F., Rugani R., **Giomo D.**, Zanini C., “Effects of animacy on the processing of morphological Number: a cognitive inheritance? A psycholinguistic study”. *50th Annual Meeting of the Societas Linguistica Europaea (SLE)*, University of Zurich, Switzerland, 10-13 September 2017 – oral presentation
- Parsons B.D., **Giomo D.**, Ivry R.B., Bueti D., “Saccadic temporal recalibration leads to a reversal of cause and effect”. *Trieste Encounters on Cognitive Science: Timing and Temporal Cognition*, 12-16 June 2017 – oral presentation

ADDITIONAL INFORMATION

OUTREACH ACTIVITIES

- 2020 ▪ *Notte dei Ricercatori*, Trieste (interview)
- 2019 ▪ *Street Science - Notte dei Ricercatori*, Trieste (talk)
- 2018 ▪ *SISSA in festa*, Trieste (TMS laboratory presentation)

PROFESSIONAL QUALIFICATIONS & MEMBERSHIPS

- 08/2016 ▪ Passed the qualifying state exam for psychologists at University of Padova
- 09/2016-ongoing ▪ Member of the Italian professional Order of Psychologists (Board of Veneto region)

ADDITIONAL
WORK/TRAINING
EXPERIENCES

- 09/2016-02/2017 **Psychologist** (volunteering) at the Neurology Unit, University Hospital of Padova. **Supervisor:** Prof. Carlo Semenza. **Clinical activities:** Standard and ad hoc neuropsychological assessment of neurological patients (adults and elders); conduction of case study and assessment of behavioral and cognitive deficits associated to specific neurological pathologies; participation (new tools ideation and creation) in a longitudinal project for training problem solving skills in pre-school children; collaboration in the development of new behavioral tasks and protocols for the cognitive assessment of neurotypical subjects.
- 12/2015-06/2016 **Post-graduate trainee** at the Neurology Unit, University Hospital of Padova. **Supervisor:** Prof. Carlo Semenza. **Clinical activities:** training in neuropsychological assessment and clinical report writing; support in case study and literature research on behavioral and cognitive deficits associated to specific neurological pathologies; support in the development of new behavioral tasks and protocols for the cognitive assessment of neurotypical population.
- 06/2015--11/2015 **Post-graduate trainee** at Servizio di Psicologia e Pedagogia (psychological service operating within a network of schools), Fondazione O.M.C. Collegio Pio X di Treviso. **Supervisor:** Dr. Tito Sartori. **Main activities:** Help in research projects on various topics (educational needs, basic cognitive abilities and study methods, surveying the psychosocial characteristics of service's users etc.); training in counselling techniques and clinical reports creation; regular support in the school environment for child diagnosed with Autism Spectrum Disorder; support in educational interventions involving teachers, students and parents.
- 05.2008-02.2017 **Employee** in private company operating in the service sector in Treviso. **Main activities:** client assistance and commercial services delivery.