Camille L. GRASSO

Neuropsychologist & PhD in cognitive neuroscience

Postdoctoral researcher at Cognitive Neuroimaging Unit (UNICOG)
CEA, DRF/Joliot, NeuroSpin, INSERM
Building 145 PC 156, Gif/Yvette F-91190 FRANCE grassocamille@gmail.com | Tel: +33(0)630508191 |
Website: https://grassocamille.netlify.app
ORCID: 0000-0002-7549-7395

PROFESSIONAL EXPERIENCE

12/02/2023 – present **Post-doctoral researcher** at UNICOG, CEA Joliot, NeuroSpin, CNRS & INSERM, Paris-Saclay. Advisor: Dr. Virginie van Wassenhove (CEA)

01/11/2018 – 05/05/2022 **PhD Student in cognitive psychology and neuroscience** at CRPN (Centre de Recherche en Psychologie et Neuroscience), CNRS, Aix-Marseille University. Co-supervised by Dr. Johannes Ziegler (CRPN), Dr. Marie Montant (CRPN) & Dr. Jennifer Coull (CRPN). LPC, CNRS, Aix-Marseille University

01/09/2020 – 31/08/2022 **ATER – Teaching assistant –** Department of Cognitive Psychology

01/10/2016 – 31/08/2017 **MSc Internship -** Neurology department, Epilepsy and Neurological Malaise Unit, CHU La Tronche (Grenoble), France. Neuropsychological assessments of epileptic patients before and after surgery, and neuropsychological assessments to detect neurodegenerative disorders.

Research work: Laboratory of Psychology and NeuroCognition (LPNC), University of Grenoble Alpes, France. Co-supervised by Dr. Nathalie Fournet (PhD, LPNC), Lassus (Neuropsychologist), and Christelle Mosca (Neuropsychologist).

01/10/2015 – 31/08/2016 **MSc Internship -** Neurology department, Neurovascular service, CHU La tronche, France. Neuropsychological assessments of patients following brain injury (head trauma, stroke).

Research work: Laboratory of Psychology et NeuroCognition (LPNC), University of Grenoble Alpes, France. Supervised by Dr. Christopher Moulin (PhD, LPNC).

RESEARCH PROJECT AND EXPERTTISE

Post-Doc research For this project, we investigate how the size of environment influences subjective duration. This novel study **combines virtual reality and EEG to examine the electrophysiological correlates of such an effect**. Our results suggest that brain activity contains decodable temporal information and that environmental constraints can disrupt this activity even before the duration production stages. Analyzing the temporal generalizability of the neural code (i.e., by training and testing a decoder across all time points within a temporal window) we showed that different types of underlying neural activities (e.g., ramping) support the encoding and production of durations.

Post-Doc research This project aims to map the geometry of duration representations by combining behavioral data with EEG recordings, and aligning these representations across individuals using unsupervised optimal transport methods. I collect both subjective similarity judgments and EEG data to create RDMs, which are then projected into an n-dimensional conceptual space using multidimensional scaling. This results in embeddings for each individual, representing both the subjective and neural similarity structures between durations. Preliminary results indicate duration representation is more complex than a simple timeline, possibly resembling a 3-dimensional

helix, and can be aligned between individuals using unsupervised algorithm (Gromov-Wasserstein optimal transport).

PhD research — I defended my PhD in May 2022, during which my work focused on the representation of temporal order. Drawing upon theoretical frameworks such as those of neural reuse and correlational learning, I explored the functional role of the sensorimotor system in representing temporal order, moving beyond the idea of a purely epiphenomenon. To address this question, I developed, programmed, and conducted several innovative experimental protocols that combined behavioral measures, such as movement initiation times, with techniques like mouse tracking and eye-tracking. The lockdowns during the COVID-19 pushed me to adapt some of my protocols and conduct large-scale online studies, aggregating data from over a thousand participants. Through these experiences, I honed strong empirical, technical and statistical skills (e.g., linear mixed-effects regression models and Bayesian modeling in R).

EDUCATION

01/11/2018 – 31/08/2022 — **PhD in cognitive psychology and neuroscience.** Thesis defended the 05 May 2022

01/09/2016 – 31/08/2017 — **Master 2 – Neuropsychology,** University of Savoie Mont Blanc, Chambéry, France

01/09/2015 – 31/08/2016 — **Master 1 – Cognitive and Social Psychologie,** Grenoble Alpes University, Grenoble, France

01/09/2012 – 31/08/2015 — **Bachelor degree in Psychologie,** University Grenoble Alpes, Grenoble, France

PUBLICATIONS

In the pipeline

2. Grasso, C. L., Logie. M, & van Wassenhove, V. (in prep.). Sizing up time: EEG decoding of duration production in virtual environments.

1. Grasso, C. L., Nalborczyk, L., & van Wassenhove, V. (in prep.). From time to time: Geometry and inter-individual unsupervised alignment of durations representations.

Peer-reviewed journal articles

5. Coretta, S., Casillas, J., … **Grasso, C. L**. … & Roettger, T. B. (2023). Multidimensional signals and analytic flexibility: Estimating degrees of freedom in human speech analyses. *Advances in Methods and Practices in Psychological Science*. https://doi.org/10.31234/osf.io%2Fq8t2k

4. Grasso, C. L., Ziegler, J. C., Coull, J., & Montant, M. (2022). Embodied time: Effect of reading expertise on the spatial representation of past and future. *PLOS ONE, 17*(10), e0276273. https://doi.org/10.1371/journal.pone.0276273

3. Grasso, C. L., Ziegler, J. C., Coull, J., & Montant, M. (2022). Space-time congruency effectsusing eye movements during processing of past-and future related words. *Experimental Psychology*. https://doi.org/10.1027/1618-3169/a000559

2. **Grasso, C. L.**, Ziegler, J. C., Mirault, J., Coull, J. T., & Montant, M. (2022). As time goes by: Space-time compatibility effects in word recognition. *Journal of Experimental Psychology:Learning, Memory, and Cognition, 48*(2), 304–319. https://doi.org/10.1037/xlm0001007

1. **Grasso, C.L.**, & Montant, M. (2018). Body-blindness in language studies. *L'Année psychologique, 118*(4), 383-388. https://doi.org/10.3917/anpsy1.184.0383

SCIENTIFIC COMMUNICATIONS

Invited talks

Grasso, C. L. (2022). Contribution of motor processes to the processing of temporal abstract concepts. UNICOG, NeuroSpin, Paris-Saclay, France.

Grasso, C. L. (2022). Embodied time: Contribution of motor processes to temporal cognition. Laboratory of Cognitive Neuroscience, EPFL, Geneva, Switzerland.

Grasso, C. L., Ziegler, J. C., Coull, J., & Montant, M. (2019). Space-time compatibility effect in language. Conference talk at « La Journée Rencontres Jeunes Chercheur-ses ». (LPNC), Grenoble, France.

Grasso, C. L., Ziegler, J. C., Coull, J., & Montant, M. (2019). Embodied language: a journey through time and space. Seminar embodiment: the role of body in cognition. Aix-Marseille University, France.

Conference & Consortium talks

Grasso C. L. & van Wassenhove V. (2023). Exploring neural code and intersubjective alignment of time experience. SETCG Early Career Researchers Meeting. London, England.

Grasso C. L. & van Wassenhove V. (2023). From time to time: Unsupervised inter-individual alignment of durations representations. EXPERIENCE Consortium meeting. Padova, Italy.

Grasso, C. L., Ziegler, J. C., Coull, J., & Montant, M. (2022). Embodied time: How the abstract concept of time arises from sensorimotor experience. Embodied and situated language processing (ESLP), Lille, France.

Public outreach talk

Grasso, C. L., Ziegler, J. C., Coull, J., & Montant, M. (2019). Embodied Time. NeuroSchool Events. Aix-Marseille University, France.

Scientific posters

Grasso, C. L., De Ajauro C., Logie. M., & van Wassenhove V. (2023). Sizing up time: EEG decoding of duration production in virtual environments. EEG and MEG methods multi-hub meeting (Cutting Gardens), Lyon, France.

Grasso, C. L., Ziegler, J. C., Coull, J., & Montant, M. (2022). Embodied time: How the abstract concept of time arises from sensorimotor experience. European Society of Cognitive Psychology (ESCoP), Lille, France.

Grasso, C. L., Ziegler, J. C., Coull, J., & Montant, M. (2019). As time goes by: space-time compatibility effects in word recognition. European Society of Cognitive Psychology (ESCoP), Tenerife, Spain.

Workshop

WIRED, Workshop on Intracranial Recordings in humans Epilepsy, DBS, at the Institut du Cerveau et de la Moelle épinière, Paris, March 2023

TEACHING (594h)

Bachelor courses

Cognitive Psychology, Department of Psychology, UFR ALLSH

- 2nd year of bachelor's degree (296h)
- 1st year of bachelor's degree (168h)

Supervision of research theses (bachelor degree) in Cognitive Psychology, Department of Psychology, UFR ALLSH

- 3rd year of bachelor's degree (22h)

Developmental Psychology and Experimental Methodology, Department of Psychology, UFR ALLSH

- 3rd year of bachelor's degree, UFR ALLSH (60h)

Master courses

Neurosciences of Emotion and Motivation, Department of Neuroscience & Department of Cognitive Sciences, UFR Science

- 1st year of master's degree (48h)

RESEARCH WORK SUPERVISION

- Cindy de Ajauro, M2 AIRE life science, Learning Planet Institute, University of Paris Cité, (2023). Currently research engineer at INRIA.
- Coralie Faby, M1 Clinical and developmental psychology, University of Aix-Marseille. (2019)
- Coralie Bertou, M1 Clinical and developmental psychology, University of Aix-Marseille. (2019)
- Benjamin Cassar, M2 Basic and Applied Cognitive Sciences, Lyon 2. (2018)
- Supervision of the research theses of 20 (in total) undergraduate students during their laboratory internships as part of their bachelor's degree program.

RELATED SCIENTIFIC ACTIVITIES

Academic services

2024	Co-organiser of an international workshop on temporal cognition, as part of the FaST committee (GDR Temps), October 2024, Paris-Saclay, France
2022	Co-organiser of an international workshop on temporal cognition (timecog2022 – Perspectives on temporal cognition), June 2022, Marseille, France.
2018 - 2022	Representative of the PhD students of the Cognitive Psychology Laboratory. Aix-Marseille, France.
2021 - present	Member of the Psychological Science Accelerator
2019 – 2021	Vice-president of the Association of Young Researchers of Federation 3 (AJC3C). Marseille, France.
2018 - 2022	Member of the Committee for Scientific Animation (COAS). Marseille, France.

Public outreach

2019 & 2020	Coordinator of the international festival Pint of Science. Aix-Marseille, France.
May 2019	Volunteer at the international conference NeuroFrance. Society for Neuroscience. Aix-Marseille, France.
2020	Manager of the popular science event NeuroSchool 'Emotionally yours'. Aix-Marseille, France.

REVIEWING ACTIVITIES

Cognition
Journal of Neurolinguistics
Journal of Cognitive Neuroscience

GRANT AND AWARDS

- PhD Thesis Prize of Aix-Marseille University (2023)
- ILCB & FR3C research funding to support the organization of the workshop of temporal cognition (2022), 1200€
- Competitive PhD grant from the French Ministry of Higher Education, Research, and Innovation.

TECHNICAL SKILLS

Methods

Eyetracking, electroencephalography, mental chronometry, multivariate pattern analysis (decoding), representational similarity analysis

Computer tools

Programming: R, Python
Experiment design: OpenSesame, PsychoPy

Electrophysiological signal processing: mne-Python
Statistical modelling: R
Collaborative and reproducible writing: RMarkdown, LATEX, Overleaf, Zotero
Open Science: Github, Open Science Framework, ArXiv, BioRxiv