Darinka Trübutschek

MARIE SKLODOWSKA-CURIE FELLOW IN COGNITIVE NEUROSCIENC

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Married, two children (born August 2019 & December 2023)

CURRENT POSITION _____

Research Fellow Frankfurt/Main, Germany

MAX PLANCK INSTITUTE FOR EMPIRICAL AESTHETICS

Jan 2021 - ongoing

• Advisor: Prof. Lucia Melloni

• Project: How does the immediate past shape current perception in the human brain?

• Techniques: psychophysics, eyetracking, EEG

CAREER GAPS

Parental Leave Oct 2023 - Dec 2024

Dedicated time for parental responsibilities

Reduced Working Hours Due to Limited Childcare During COVID-19

Jan 2021 - Jun 2021

Managed academic responsibilities while navigating restricted childcare availability

Full-Time Caregiver During COVID-19 Lockdown Mar 2020 - Aug 2020

Provided full-time care for child during COVID-19 shutdown of childcare and research facilities

Parental Leave

Jul 2019 - Dec 2019

Dedicated time for parental responsibilities

EDUCATION _____

PhD in Cognitive Neuroscience, with highest honors

Paris, France

SORBONNE UNIVERSITÉ Nov 2014 - Oct 2018

• Advisor: Prof. Stanislas Dehaene

• Project: What is the relationship between conscious perception and working memory in the human brain?

• Techniques: psychophysics, eyetracking, MEG

MSc in Behavioral and Cognitive Neuroscience, magna cum laude

Paris, France

Université Pierre et Marie Curie

Sep 2012 - Dec 2013

• Advisor: Dr. Josselin Houenou

• **Project**: Emotional reactivity - A study of the anatomy and resting-state functional connectivity of the fronto-limbic network in bipolar patients and healthy controls

• Techniques: MRI-based VBM, resting-state fMRI-based functional connectivity, DTI

BSc with Honors in Psychology, summa cum laude (valedictorian)

Lexington, VA, USA

WASHINGTON & LEE UNIVERSITY

Sep 2007 - May 2010

RESEARCH & PROFESSIONAL EXPERIENCE

Postdoctoral Research Fellow

Oxford, UK

University of Oxford

Jan 2019 - Dec 2020

• Advisor: Prof. Mark Stokes

• Project: How do memories shape the encoding and maintenance of future memories?

• Techniques: intracranial EEG

Research Intern Saclay, France

NEUROSPIN Jan 2014 - Oct 2014

• Advisor: Dr. Sébastien Marti

Postbaccalaureate Fellow in Functional Neuroimaging

Durham, NC, USA **DUKE UNIVERSITY** Jun 2010 - Aug 2012

· Advisor: Prof. Tobias Egner

• Project: What are the neural correlates of declarative and procedural working memory?

• Techniques: fMRI

GRANT FUNDING & FELLOWSHIPS

BIAL Foundation Grant

CO-PI (TOGETHER WITH L. MELLONI)

BIAL Foundation

Mar 2023 - Feb 2025

• Project: Event segmentation and time perception: understanding why time feels like flying

• *Amount*: €56,000

Marie Sklodowska-Curie Individual Fellowship

European Commission

Sep 2021 - Nov 2025

• Project: Cortical hierarchy of memories - deciphering the neuronal mechanisms of serial dependence in the human brain

• *Amount*: €174,806.40

Christiane-Nüsslein-Volhard Fellowship for Women in STEM

CNV Foundation

PRINCIPAL INVESTIGATOR

PRINCIPAL INVESTIGATOR

Mar 2021 - Feb 2022

• Amount: €4.800

Postdoctoral Fellowship

Fondation Fyssen Jan 2019 - Dec 2020

PRINCIPAL INVESTIGATOR

• Project: Dynamic activity-silent brain states underpin working memory in the human brain

• *Amount*: €70,000

Graduate Fellowship

CO-PI (TOGETHER WITH S. DEHAENE)

Fondation Schneider Electric

Sep 2016 - Oct 2018

Sep 2012 - Aug 2016

• **Project**: Probing the limits of non-conscious working memory

• *Amount*: €72,236

Graduate Fellowship Ecole des Neurosciences de Paris

PRINCIPAL INVESTIGATOR

• *Amount*: €150.000

Postbaccalaureate Fellowship in Functional Neuroimaging

Duke Brain Imaging and Analysis Center

Jun 2010 - Aug 2012

• Amount: \$60,000

R.E. Lee Summer Scholar

PRINCIPAL INVESTIGATOR

PRINCIPAL INVESTIGATOR

Washington & Lee University

2009

• Amount: \$3,000

HONORS & AWARDS _____

L'Oréal-Unesco Prize for Women in Science National Award

2022

€10.000

Prix de la chancellerie des universités de Paris

2019

Thesis award (€10,000)

NIH Kavli Summer Institute in Cognitive Neuroscience

2016

Travel award

Robinson Award in English Literature, History, and Social Sciences

2010

Undergraduate academic award

Honor Roll	2007 - 2010
Ranked among the top 20 % of the Washington & Lee University student body	
Election to Phi Beta Kappa	2009
National honor society for undergraduates ranked among the top 10 %	
Psychology Departmental Scholarship	2009
Awarded by Washington & Lee University	
James D. Davidson Memorial Fund Scholarship	2008
Awarded by Washington & Lee University	
Election to Phi Eta Sigma	2009
National honor society for freshmen ranked among the top 20 % of their class	
Congress/Bundestag Youth Exchange Scholarship	2004

PUBLICATIONS_

name* denotes co-authorship, name denotes student authorship.

Award to fund a 1-year high school exchange in Springfield, VA, USA

Published/Preprint

How do subjective perception and memory shape one another?

- #8. **Trübutschek, D.***, Kienitz, R.*, <u>Winkler, M., Öztürk, S.</u>, & Melloni, L. (to be submitted). Sequence learning without consciousness.
- #7. Zheng, Z., **Trübutschek**, **D.**, Huang, S., Cai, Y., & Melloni, L. (2024). What you saw a while ago determines what you see now: The effect and temporal dynamics of awareness priming on implicit behavior. *PsyRXiv*.
- #6. **Trübutschek**, **D.** & Melloni, L. (2023). Stable perceptual phenotype of the magnitude of history biases even in the face of global task complexity. *Journal of Vision*, *23*(4), 1-20.
- #5. **Trübutschek, D.** (2022). Context-independent item representations in human working memory. *Annals Fyssen No. 35*124-142.
- #4. **Trübutschek, D.**, Marti, S., Ueberschär, H., & Dehaene, S. (2019). Probing the limits of activity-silent, non-conscious working memory. *PNAS*, 116(28), 14358-14367.
- #3. **Trübutschek**, **D.**, Marti, S., & Dehaene, S. (2019). Temporal-order information can be maintained in non-conscious working memory. *Scientific Reports*, *9*(6484).
- #2. **Trübutschek, D.**, Marti, S., Ojeda, A., King, J.-R., Mi, Y., Tsodyks, M., & Dehaene, S. (2017). A theory of working memory without consciousness or sustained activity. *eLife*.
- #1. Naccache, L., Marti, S., Sitt, J. D., **Trübutschek, D.**, & Berkovitch, L. (2016). Why the P3b is still a plausible correlate of conscious access? A commentary on Silverstein et al., 2015. *Cortex*, 85, 126-128.

Shaping the future of neuroscience

- #6. Aczel, B.*, Szaszi. B.*, ..., **Trübutschek, D.**, ..., & Nosek, B. A. (to be submitted). Investigating the analytical robustness of the social and behavioral sciences.
- #5. Stockart, F.*, Schreiber, M.*, ..., **Trübutschek, D.**, ..., & Mudrik, L. (2024). Studying unconscious processing: towards a consensus on best practices. *PsyRXiv*.
- #4. Sarafoglou, A., Hoogeveen, S., ..., **Trübutschek, D.**, ..., & Wagenmakers, E.-J. (2024). Subjective evidence evaluation survey for many-analyst studies. *Royal Society Open Science*, *11*(7), 240125.
- #3. **Trübutschek, D.***, Yang, Y.-F.*, Gianelli, C.*, Cesnaite, E., Fischer, N. L., Vinding, M.C., Marshall, T. R., Algermissen, J., Pascarella, A., Puoliväli, T., Busch, N., & Nilsonne, G. (2024). EEGManyPipelines: A large-scale, grassroots multianalyst study of electroencephalography analysis practices in the wild. *Journal of Cognitive Neuroscience*, 36(2).
- #2. Ruzzoli, M., ..., **Trübutschek, D.**, ..., & Veniero, D. (2023). An #EEGManyLabs study to test the role of alpha phase on visual perception (a replication and new evidence). *PsyRXiv*.
- #1. Pike, A. C., ..., **Trübutschek, D.**, ..., & Noonan, M. P. (2022). 10 simple rules for a supportive lab environment. *Journal of Cognitive Neuroscience*, *35*(1), 44-48.

Pre-PhD

- #2. Coyle, E. F., Fulcher, M., & Trübutschek, D. (2016). Sissies, mama's boys, and tomboys: Is children's gender nonconformity more acceptable when nonconforming traits are positive? Archives of Sexual Behavior, 451827-1838.
- #1. **Trübutschek**, **D.** & Egner, S. (2012). Negative emotion does not modulate rapid feature integration effects. *Fron*tiers in Psychology, 3(100).

In preparation

Zheng, Z., **Trübutschek, D.**, Aru, J., & Melloni, L. (in prep). The intrinsic feature filtering function from consciousness to working memory.

Trübutschek, **D.**, Fischer, C., Bledowski, C., & Melloni, L. (in prep). Attractive biases in working memory arise at the level of decisions, not perception.

Trübutschek, D., Vieten, I., Schwiedrzik, C. & Melloni, L. (in prep). Not so automatic? Active, but not latent working memory templates trump serial dependence.

Trübutschek, D., Wasmuht, D., Spaak, E., & Stokes, M. (in prep). Dynamic brain states for flexible decision-making in working memory.

INVITED TALKS

Colloquium Talk at the Leibniz Research Centre for Working Memory and Dortmund, Germany **Human Factors** TRD **Brain Dynamics Days Keynote** Of moments and memories: How subjective perception and experience shape one another in the 2024 human brain

Faculty of Psychology at the University of Leiden

Deciphering the neural code and computational principles of subjective perception and memory in the human brain

Faculty of Psychology at the University of Graz

Deciphering the neural code of subjective perception and memory in the human brain

Faculty of Medicine at Goethe University

Decomposing our inner life: Using time-resolved electrophysiology to decipher the neural code of subjective perception and memory in the human brain

Women in Neuroscience Panel Discussion

Family, maternity, and caring duties: finding work-life balance

Neural Dynamics Forum at the University of Bristol

Flexible decision-making in working memory

65th Congress of the German Society for Clinical Neurophysiology and **Functional Imaging**

Decoding our thoughts: Tracking the contents of (non-)conscious working memory

Aggregate Intellect's Spotlight Seminar Series

Decoding our thoughts: Tracking the contents of (non-)conscious working memory

Barnes' Lab Meeting at University College London

The neuro-cognitive architecture of complex working memory

Royal Netherlands Academy of Arts and Sciences Colloquium on 'New Perspectives on Visual Working Memory'

Characterizing the neuro-cognitive architecture of non-conscious working memory

Stokes' Lab Meeting at the University of Oxford

Characterizing the neuro-cognitive architecture of non-conscious working memory

Basque Center on Cognition, Brain and Language External Speaker Seminar Series

Non-conscious working memory and its boundary conditions

Ecole des Neurosciences de Paris Seminar Series

A theory of working memory without consciousness or sustained activity

Egner Lab Meeting at Duke University

Disentangling the relationship between conscious perception and working memory

Neurophilosophy Workshop of the Berlin School of Mind and Brain

(Un)conscious working memory?

Leipzig, Germany

Online

2023

Graz, Austria

Frankfurt/Main, Germany

2023

Online

Online

2022

2022

Online

2021

Online

2020

London, UK

2020

Amsterdam. Netherlands

2019

Oxford, UK

2018

San Sebastian, Spain

Paris, France

2018

Durham, NC, USA

2015

Venice, Italy

2015

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CONFERENCE PRESENTATIONS

Symposium Talk at Psychologie und Gehirn

Challenging current theories of conscious perception? - The case of activity-silent, non-conscious 'working' memory

Talk at the Association for the Scientific Study of Consciousness 26

Can we learn information non-consciously? - Exploring the relationship between non-conscious working memory and statistical sequence learning

New York, USA

Poster at ICON 13

The limits of non-conscious working memory

Amsterdam, Netherlands

Talk at the Association for the Scientific Study of Consciousness 21

The limits of non-conscious working memory

2017

Hamburg, Germany

Talk & Poster at the Neuroscience Workshop Saclay

Disentangling the relationship between conscious perception and working memory

Gif/Yvette, France

Chicago, IL, USA

Beijing, China

Poster at SFN

Poster at SRCD

(Un)conscious working memory? - Disentangling the relationship between conscious perception and working memory

2015

Symposium Talk at the Association for the Scientific Study of Consciousness 19

Perception and working memory during conscious and unconscious processing

Paris, France

Montréal, Canada

Male gender non-conformity and deragatory labels: Young adults' attitudes about and labels for preschoolers

2011

2009

2015

Poster at Science, Society, and the Arts Conference

Effects of parental closeness on emerging adults' engagement in risk-taking behaviors and adult status

Lexington, VA, USA

TEACHING, SUPERVISION, & MENTORING_

Lehrprobe for Undergraduate Level Course on the Neural Correlates of Attention

May 2023

I prepared this lecture as part of a job application at the University of Graz and received very positive feedback for my didactic and engaging presentation - even compared to more experienced candidates.

(Co-)Supervision of PhD Students

3 students: Qiyuan Zeng, Maximilian Winkler, Zefan Zheng

since Sep 2021

Supervision of Master Students

duration of the academic year.

2 students: Cécile Pernossi, Ilona Vieten (now PhD student with Florian Mormann) Supervision of Research Assistants & Undergraduate Interns

since Sep 2021

5 students: Jana Taube, Chiara Grasso, Sophie Danielle Oprée, Tuba Özcan, Sümeyye Öztürk

since Sep 2021 2018-2019

Mentor in the Letters to a Pre-scientist Program This mentoring program pairs up a researcher and a elementary - high school student from a disadvantaged background to be pen pals for the

Mentor in the Skype a Scientist Program

since 2017

This program allows school children from all over the world to interact with a researcher through skype.

Teaching Assistant for an Undergraduate Laboratory Statistics Course at Washington & Lee University

2009

I prepared and led practical sessions accompanying an introductory statistics lecture, and designed and graded evaluations.

Peer tutor in German and Psychology at Washington & Lee University

2008-2010

OUTREACH

Deutschlandfunk Podcast "How does consciousness emerge? A bet between philosophy and experiment"

I co-advised producers on scientific content & provided interview material.

Brain Awareness Week Plenary Talk

2018

Together with Sébastien Marti, I gave a keynote on how our brain constructs conscious experience at the Paris Brain Awareness Week.

NHK Documentary Series on the Human Body

2017

I co-advised producers on scientific content.

2016

ARTE Documentary "Déchiffrer la conscience"

I co-advised producers on scientific content & participated in scenes on MEG data acquisition.

Brain Awareness Week

2013

I co-organized a seminar on a head full of music at the Paris Brain Awareness Week.

Brain Awareness Week

I organized & hosted lab visits for the general public and gave introductory lectures on the brain in several local schools at the Durham Brain Awareness Week.

SERVICE TO THE COMMUNITY

Editorial Board Member since 2024

PCI Registered Reports

Ad-hoc Peer Reviewer since 2017

Behavioral Brain Research, Cerebral Cortex, Consciousness & Cognition, Imaging Neuroscience, Neuroscience of Consciousness, Scientific Reports, Quarterly Journal of Experimental Psychology

Conference Organizer 2016-2017

Co-organizer of the Neuroscience Workshop Saclay (NEWS 2017) on "Neural circuits and behavior: from cells to connectivity and function": 9 international plenary speakers, 8 local trainee speakers, 153 attendees

Committee Member since 2015

Elected representative for the Ecole des Neurosciences de Paris student body: managed annual budget, organized a seminar series on "New Frontiers in Neuroscience", coordinated cultural & social events; **steering committee member** of the EEGManyPipelines project

Institutional Service since 2014

Co-organizer of the NCC-Lab Seminar Series; social media manager of the Melloni lab; co-organizer of the weekly Consciousness Seminar in the Dehaene lab

TECHNICAL SKILLS

Methods ECoG, EEG/MEG, eyetracking, (f)MRI/DTI, psychophysics

Programming Latex, Matlab, Python, R

Stimulus presentation E-prime, Presentation, PsychoPy, Psychtoolbox

Data analysisBrainstorm, Fieldtrip, FSL, MNE Python, scikit-learn, SPM, SPSS

Version control git, gitHub

Operating systems Linux, MacOS, Windows

LANGUAGES

French

German Native speaker

English Native level

Italian Beginner

MAJOR ONGOING COLLABORATIONS ___

Prof. Lucia Melloni Max Planck Institute for Empirical Aesthetics, Frankfurt/Main, Germany

EEGManyPipelines project World-wide collaboration

Dr. Ricardo Kienitz Goethe University, Frankfurt/Main, Germany

Fluent

Prof. Eelke Spaak Donders Institute, Nijmegen, Netherlands

Dr. Christoph Bledowski Goethe University, Frankfurt/Main, Germany