

# Dominique Makowski

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Born: October 19, 1991 – Clamart, France (25 years old)

Nationality: French (FRA)



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## Current position

### *PhD Student*

Memory & Cognition Lab', Institute of Psychology, University of Sorbonne Paris Cité, Paris, France  
Center for Psychiatry & Neuroscience, INSERM U894, Sainte-Anne Hospital, Paris, France

## Education

2014–17

DOCTOR OF PHILOSOPHY (PhD)

**Neuropsychology**, University of Sorbonne Paris Cité, Paris, France

*Thesis.* Beyond Reality: Neuropsychology of the Sense of Reality and its Relationship with Emotion Regulation, Memory and Consciousness.

*Supervisor.* Pr. Serge Nicolas

2014–17

CERTIFIED PSYCHOTHERAPIST

**Cognitive-Behavioural Therapy (CBT)**, French Association for Cognitive-Behavioural Therapy (AFTCC), Paris, France

*Second year Thesis.* Cognitive and Behavioural Therapy of two Patients: One suffering from Motivation Disorder in a Dysthymic Context and the other from Social Anxiety.

*Supervisor.* Sophie Kindynis

2012–14

MASTER OF SCIENCE (MSc) - LICENCED PSYCHOLOGIST

**Neuropsychology and Cognitive Psychology**, University of Sorbonne Paris Cité, Paris, France

*Second year Thesis.* Study of emotions in schizophrenia shed a light on the Paradox of Fiction.

*Supervisor.* Pr. Pascale Piolino

*First year Thesis.* The Cognitive Development of the Aesthetic Judgement in Children and Adults ([see talk](#)).

*Supervisor.* Dr. Sandrine Rossi

2009–12

BACHELOR OF SCIENCE (BSc)

**Psychology**, University of Sorbonne Paris Cité, Paris, France

## Research Topic and Scientific Interests

In 1896, the Lumière brothers presented a 50-seconds long movie of a train's arrival at a station. Intense fear and awe rose up among the audience, as if they could not believe that it was not a real train. Several decades later, the edges of our reality still continue to fade. Through virtual reality, augmented reality and new forms of fictions, simulations of all kind populate our everyday experience and challenge our intuitive *feeling* and *belief* concerning its reality. Understanding the neurocognitive processes underlying this sense of reality is what drives my research. This topic is heavily connected with others levels and states of the Self such as minimal consciousness, mindfulness, attentional absorption, presence or dreams and has an obvious echo in several neuropsychiatric diseases such as schizophrenia, PTSD or depersonalisation-derealization disorder. As it also shares a strong relationship with emotional processing, modifications of the sense of reality might be at stake in some forms of voluntary or involuntary emotion regulation mechanisms (such as distancing, decoupling, defusion, decentering or fictional reappraisal).

More generally, my scientific interests also include the following topics:

- *Emotion Regulation*. The unicity and diversity of emotion regulation strategies, its structure and alteration in neuropsychiatric diseases.
- *Consciousness*. The different levels and states of consciousness and their neural correlates.
- *Neuropsychological Practice*. Developing tools that will improve the efficiency and accuracy of neuropsychological examination and diagnostic.
- *Neuroaesthetics*. The cognitive processes involved in the aesthetic experience and judgement.
- *Statistics, Programing and Methodology*. The application of cutting-edge statistical procedures (artificial intelligence) on neuropsychological data. Also interested in scientific good practises and reportability (with a special focus on open-access and reproducibility).
- *History of Psychiatry/Neuroscience*. The origin of modern neuroscience and psychology, with a special focus on the romantic era and *La belle époque* (19-20<sup>th</sup> centuries).
- *Philosophy*. Phenomenology, radical determinism, transhumanism as well as the links between oriental philosophies/religions (e.g., Buddhism and Hinduism) and modern knowledge.

## Experience

### Research

2012

#### INTERNSHIP

Developmental Psychology Lab' (LaPsyDé), University of Sorbonne Paris Cité, CNRS UMR 8240, Paris, France

*Activity*. Data collection for an experiment on emotions and mental rotation ([Borst, 2016](#)).

*Supervisor*. Pr. Grégoire Borst

2011

#### INTERNSHIP

Memory & Cognition Lab' (LMC), Institute of Psychology, University of Sorbonne Paris Cité, Paris, France

*Activity*. Experiment creation and data collection for a study on memory, salience and bizarreness effect.

*Supervisor*. Pr. Serge Nicolas

### Teaching

#### ADDITIONAL TRAINING

2016

#### ACADEMIC TEACHING CERTIFICATE

University of Sorbonne Paris Cité, Paris, France

*Five-days long training in pedagogy and innovative teaching.*

## ACADEMIC

2015-17

### TEACHING ASSISTANT

University of Sorbonne Paris Cité, Paris, France

*Subject.* Differential cognitive psychology for first year students.

*Supervisor.* Dr. Christophe Mouchiroud

*Topics.* Experimental **methodology** (**assessment** and related problems, scientific reasoning, **psychometric properties** of tests and questionnaires, **statistics**...) and introduction to concepts such as **intelligence**, **personality** and **creativity**.

*Activity.* 144 hours, performed all regular duties of a T.A. for classes size of 40 including lectures, office hours and marking.

2014-16

### TUTOR

University of Sorbonne Paris Cité, Paris, France

*Activity.* Helping bachelor students on their mentoring programme (mainly **cognitive psychology**, **psychopathology** and **neuroscience**). Approximately 1h per week.

2014-16

### TEACHING ASSISTANT

University of Sorbonne Paris Cité, Paris, France

*Subject.* Cognitive psychology for third year students.

*Supervisor.* Pr. Todd Lubart

*Topics.* Models of **working memory**, **mental imagery** and **categorisation**.

*Activity.* 48 hours, performed all regular duties of a T.A. for for classes size of 40 including lectures, office hours and marking.

2013

### TEACHING ASSISTANT

University of Sorbonne Paris Cité, Paris, France

*Subject.* Introduction to the use of Internet and on-line university services for first year students.

*Supervisor.* Dr. Christian Fondrat

*Topics.* Internet security, anonymity, legal rights, course organisation.

*Activity.* 16 hours.

## SCIENTIFIC

2015-17

### INSTRUCTOR

Introduction and Basic Statistics using R

*What.* Short within-lab' trainings (2h) for master and PhD's students on basic statistics using R.

*Where.* Memory & Cognition Lab'.

2015-16

### INSTRUCTOR

EDA, ECG, Facial EMG: Theory and Practical Signal Acquiring

*What.* Short within-lab' trainings (2h) for master and PhD's students on how to acquire electrophysiological (EDA, ECG, EMG) signal using Biopac® and the AcqKnowledge software.

*Where.* Memory & Cognition Lab'.

2015-16

#### INSTRUCTOR

The Anamnesis in Clinical and Experimental Psychology

*What.* Short within-lab' trainings (2h) for master students on how to ask and handle sensitive personal information about patients or participants.

*Where.* Memory & Cognition Lab'.

#### SUPERVISION

I have supervised nine third-year psychology students during their lab internship and ten master students (studying neuropsychology and cognitive psychology) for their master thesis.

## Clinical Activity

#### ADDITIONAL TRAINING

2016

MASTER CLASS: MINDFULNESS BASED ON COMPASSION AND INSIGHT (MBCI)

Institute for psychiatry, Sainte-Anne Hospital

*Two-days long training on mindfulness based rehabilitation.*

2016

FIRST AID CERTIFICATE

University of Sorbonne Paris Cité, Paris, France

*Two-days long training.*

#### PSYCHIATRY

2013-14

##### INTERNSHIP

Department of adult psychiatry (Pr. Philippe Fossati)

Pitié-Salpêtrière Hospital, Paris, France

*Supervisor.* Dr. Séverine Hatif

*Activity.* Assessment and diagnostic of psychiatric or neurological illnesses among adults, as well as development and application of cognitive rehabilitation programs.

2012-13

##### INTERNSHIP

Department of geriatric psychiatry (Dr. Thierry Gallarda)

Sainte-Anne Hospital, Paris, France

*Supervisor.* Emmanuel Guiliano

*Activity.* Assessment and diagnostic of psychiatric and neurological illnesses among an elderly population.

## NEUROLOGY

2012–13

### INTERNSHIP

Department of gerontology  
La Porte Verte Hospital, Versailles, France

*Supervisor:* Sophie Fleury

*Activity.* Observation of assessment and diagnostic of memory related deficits such as neurodegenerative diseases, somatic ageing-related illnesses or depression.

## Communications

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Second-author papers	3 <sup>1</sup>
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### Journal articles (peer reviewed)

**Makowski, D.**, Sperduti, M., Lavallée, S., Nicolas, S. & Piolino, P. (*under review*). *Interindividual Variability in Emotion Regulation: Relationship with Mindfulness, Life Satisfaction, Physical Activity and Mood Disorders*, Assessment.

Sperduti, M., Armougum, A., **Makowski, D.** & Piolino, P. (*under review*). *Interaction between attentional systems and episodic memory encoding: the impact of conflict on binding of information*, Experimental Brain Research.

**Makowski, D.\***, Sperduti, M.\*, Nicolas, S. & Piolino, P. (*under review*). "Being there" and remembering it: Presence improves Memory Encoding. Consciousness & Cognition.

Sperduti, M., **Makowski, D.** & Piolino, P. (*under review*). *Méditer pour bien vieillir ? Les possibles bienfaits des pratiques méditatives sur le déclin cognitif lié à l'âge | Meditation and Successful Ageing: can Meditative Practices Counteract Age-related Cognitive Decline?*, Psychologie Française.

Sperduti, M.\*, **Makowski, D.\***, Arcangeli, M., Wantzen, P., Zalla, T., Lemaire, S., Dokic, J., Pelletier, J. & Piolino, P. (2017). *The Distinctive Role of Executive Functions in Implicit Emotion Regulation*. Acta Psychologica, 173, 13-20.

Nicolas, S. & **Makowski, D.** (2016). *Centenaire Ribot (I). La réception de l'oeuvre de Théodule Ribot chez l'éditeur Ladrangé (1870-1873)*. Bulletin de Psychologie, 69, *in press*.

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<sup>1</sup>Includes papers *under review*.

Nicolas, S. & **Makowski, D.** (2016). *Can mental fatigue be measured by Weber's compass? Alfred Binet's answer on the value of aesthesiometry (tactile sensitivity) as an objective measure of mental fatigue*. European Yearbook of the History of Psychology, vol. 2, in press.

Sperduti, M., **Makowski, D.**, & Piolino, P. (2016). *The protective role of long-term meditation on the decline of the executive component of attention in aging: a preliminary cross-sectional study*. Aging, Neuropsychology, and Cognition, 1-12.

Sperduti, M.\*, Arcangeli, M.\*, **Makowski, D.**, Wantzen, P., Zalla, T., Lemaire, S., Dokic, J., Pelletier, J. & Piolino, P. (2016). *The paradox of fiction: Emotional response toward fiction and the modulatory role of self-relevance*. Acta psychologica, 165, 53-59.

**Makowski, D.**, Sperduti, M., Blanchet, S., Nicolas, S. & Piolino, P. (2015). *Régulation Emotionnelle face au Déclin Cognitif dans le Vieillessement : Un Faux Paradoxe ? | Emotion regulation and the cognitive decline in aging: beyond the paradox*. Gériatrie et Psychologie Neuropsychiatrie du Vieillessement, 13 (3), 301-8.

## Technical Publications (peer reviewed)

**Makowski, D.** & Dutriaux, L. (under review). *Neuropsychia.py: A Python Module for Creating Experiments, Tasks and Questionnaires*, The Journal of Open Source Software., The Journal of Open Source Software.

**Makowski, D.** (2016). R Package *neuropsychology: A Toolbox for Psychologists, Neuropsychologists and Neuroscientists*. The Comprehensive R Archive Network (CRAN).

## Talks

**Makowski, D.**, Sperduti, M. & Piolino, P. (2016). *"Being there" and Remembering it: Presence enhances Encoding in Memory*. International Congress On Memory (ICOM), 17-22 July 2016, Budapest, Hungary.

**Makowski, D.**, Sperduti, M. & Piolino, P. (2016). *The Sense of Reality as a feature of proto-Consciousness, its Alteration and Generation induced by Fictional Worlds*. Literary States of Consciousness, 2 June, Paris, France.

**Makowski, D.**, Sperduti, M. & Piolino, P. (2016). *Does Mindfulness ability differently affect Implicit and Explicit Emotion Regulation?* 2nd International Conference on Mindfulness (ICM), 11-15 May, Roma, Italy.

Sperduti, M., **Makowski, D.** & Piolino, P. (2016). *Does mindfulness enhances interoception? Dissociation between different interoceptive abilities*. 2nd International Conference on Mindfulness, 11-15 May, Roma, Italy.

**Makowski, D.**, Sperduti, M. & Piolino, P. (2015). *Bon et Mauvais Régulateurs Emotionnels: Un Rôle Spécifique de l'Inhibition ?* 56è Congrès National de la Société Française de Psychologie (SFP), 2-4 September, Strasbourg, France.

**Makowski, D.**, Sperduti, M., Pelletier, J. & Piolino, P. (2015). *Régulation émotionnelle et Self Control: De la recherche Fondamentale à l'Application Clinique*. 1er Congrès Francophone de TCC, 27-29

May, Lyon, France.

**Makowski, D.**, Sperduti, M., Arcangeli, M., Pelletier, J. & Piolino, P. (2014). *From Philosophy to the Rehabilitation of Psychiatric Patients: Fiction/Reality, Emotion et Cognitive Control*. Journée d'hiver de l'IUPDP, 19 December, Boulogne-Billancourt, France.

**Makowski, D.**, Sperduti, M. & Piolino, P. (2014). *L'émotion face à la fiction : l'étude de patients schizophrènes éclaire le paradoxe de la fiction*. 27 June, Fête de la Recherche, Boulogne-Billancourt, France.

**Makowski, D.**, & Rossi, S. (2013). *Le jugement esthétique chez l'enfant*. Journées Neurosciences, Esthétique, et Complexité, 28 September, Paris, France.

## Posters

**Makowski, D.**, Sperduti, M. & Piolino, P. (2016). *Régulation Emotionnelle, pleine-conscience et bien-être : Interactions et implication dans les troubles de l'humeur*. Journée d'hivers de la Société de Neuropsychologie de Langue Française, 5 December, Paris, France.

Blondé, P., Sperduti, M., **Makowski, D.** & Piolino, P. (2016). *Le rôle des réseaux attentionnels sur l'encodage en mémoire épisodique dans le cadre du vieillissement et de sa variabilité interindividuelle liée aux traits de pleine conscience*. Journée d'hivers de la Société de Neuropsychologie de Langue Française, 5 December, Paris, France.

**Makowski, D.**, Sperduti, M. & Piolino, P. (2016). *I know it's not real...what does it change?* nCPN day, 16 September, Paris, France.

**Makowski, D.**, Sperduti, M. & Piolino, P. (2015). *"J'avais l'impression d'y être" : Sentiment de présence et encodage en mémoire autobiographique*. Journée d'hiver de la Société de Neuropsychologie de Langue Française, 5 December, Paris, France.

Sperduti, M., **Makowski, D.** & Piolino, P. (2015). *Interaction entre systèmes attentionnels et encodage en mémoire épisodique*. Journée d'hivers de la Société de Neuropsychologie de Langue Française, 5 December, Paris, France.

**Makowski, D.**, Sperduti, M., Arcangeli, M., Pelletier, J. & Piolino, P. (2015). *I know it's not real...what does it change?* 12e colloque de la Société des Neurosciences, 19-22 May, Montpellier, France.

**Makowski, D.**, Sperduti, M., Arcangeli, M., Pelletier, J. & Piolino, P. (2014) *Emotion Regulation by fiction is related to cognitive inhibition*. Journée d'hiver de la Société de Neuropsychologie de Langue Française, 5 December, Paris, France.

Sperduti, M., **Makowski, D.**, Vialatte, F. & Piolino, P. (2014). *The decline of Autobiographical Memory in aging, inhibition and the cingulate cortex: an activation and resting state fMRI study*. Journées d'Etudes du Vieillissement, 15-16 September, Caen, France.

Sperduti, M., **Makowski, D.** & Piolino, P. (2014). *The protective role of meditation on the cognitive decline in aging: a cross-sectional study*. Journées d'Etudes du Vieillissement, 15-16 September, Caen, France.



**Makowski, D.**, Sperduti, M., Arcangeli, M., Pelletier, J. & Piolino, P. (2013). *QUID du paradoxe de l'émotion face à la fiction ? Nouvelles données physiologiques comparant la réponse émotionnelle à des scènes réelles ou fictionnelles*. Journées de l'TUPDP, 19 December, Boulogne-Billancourt, France.

## Public popularization

**Magazine**, *Neuroanatomie de la réalité : quand le réel n'est plus*, 2016, *Les yeux brouillés*, 1, 48-55.

**National TV**, *The effect of violent images on the brain and body*, 2015, Testé sous contrôle médical, France 4

**Online journal**, *"Avengers, l'ère d'Ultron" en 3D : aussitôt vu, aussitôt oublié ?*, 2015, francetvinfos.fr

## Skills

### Language

**French**: Native proficiency

**Polish**: Native proficiency

**English**: Fluent

**German**: Limited working proficiency

**Italian**: Limited working proficiency

### Neuroimaging

My main interest is currently dedicated to electrophysiological data, including **EEG**, **biosignals** and their combination, as I believe that cutting-edge statistical techniques, associated with this high-complexity data, open new horizons for discoveries.

**Biosignals** (Biopac®, AcqKnowledge®)

- Electrodermal Activity (EDA): *Full proficiency*
- Electrocardiogram (ECG): *Full proficiency*
- Facial Electromyography (fEMG): *Intermediate proficiency*
- Eye tracking: *Beginner*

**EEG** (MNE, BrainVision®, Geodesic®, Fieldtrip)

- Event-Related Potentials (ERPs): *Full proficiency*
- Time-frequency analysis: *Intermediate proficiency*
- Micro-states analysis: *Intermediate proficiency*
- Source localization: *Beginner*

**MRI** (SPM, FSL)

- Functional (fMRI): *Beginner*
- Connectivity: *Beginner*

## CREATIONS AND CONTRIBUTIONS

- **NeuroKit** (*main author*): Open-source python module for statistics and neurophysiological signal processing (EEG, EDA, ECG, EMG...).

## ADDITIONAL TRAINING

2016	INTRODUCTION TO EYE TRACKING Memory and Cognition Lab', University of Sorbonne Paris Cité, Paris, France <i>one-day long (5h) training on signal acquisition and processing with the SMI system</i>
2016	HOW TO GET GREAT EDA (ELECTRODERMAL ACTIVITY) DATA Biopac webinar <i>one-day long (4h) training on acquiring and processing of EDA</i>
2015	fMRI AND CONNECTIVITY National Institute of Nuclear Sciences & Techniques (INSTN), Marseilles, France <i>Four-days long (32h) training with Dr. Jorge L. Armony on fMRI and connectivity</i>
2014-15	fMRI : PREPROCESSING AND ANALYSIS Sainte-Anne Hospital, Paris, France <i>Four-days long (32h) training with Dr. Sylvain Charron on fMRI data analysis</i>
2014	SIGNAL PROCESSING THEORY AND APPLICATION FOR EEG Ecole Supérieure de Physique et de Chimie Industrielle (ESPCI), Paris, France <i>Three-days long (24h) training with Dr. Francois Vialatte on signal theory and its application for EEG</i>

## Statistics / Data Science

I use **R** and **Python** for data analysis. My knowledge is oriented toward the fields of *structural modelling* (mixed-effects models, Bayesian estimations and structural equations), *predictive modelling* (artificial intelligence, machine learning) and *multivariate statistics* (network analysis, data mining). I'm more generally interested in good practices in statistics (reporting, reproducibility, open-source solutions) and their use in psychology and neuroscience.

## CREATIONS AND CONTRIBUTIONS

- **neuropsychology** (*main author*): R package (see [technical publications](#)).

## ADDITIONAL TRAINING

2015	STATISTICS AND R FOR THE LIFE SCIENCES Harvard University, MA, USA <i>Online EdX course (16h).</i>
2014	MACHINE LEARNING AND BRAIN-TO-COMPUTER INTERFACES École Supérieure de Physique et de Chimie Industrielle (ESPCI), Paris, France <i>Two-days long (16h) training with Dr. Francois Vialatte on machine learning and its application for Brain-Computer Interface.</i>
2014	INTRODUCTION TO STATISTICS WITH R Paris Sud University, Paris, France <i>MOOC (40h).</i>

## Programming

I use **Python**<sup>™</sup> on a daily basis and have a working knowledge of **Matlab**<sup>™</sup>. I am currently learning **Julia**<sup>™</sup>. I'm also familiar with traditional experiment creation tools such as **E-prime**®, **PsychoPy**® or **OpenSesame**®.

### CREATIONS AND CONTRIBUTIONS

- **Neuropsydia.py** (*main author*): Open-source python module for creating experiments, tasks and questionnaires (see [technical publications](#)).

### ADDITIONAL TRAINING

- 2016 SCIENTIFIC PROGRAMMING WITH PYTHON AND SOFTWARE ENGINEERING BEST PRACTICES  
Telecom ParisTech  
*Two-days (16h) long training on advanced python programing*
- 2016 P4N 2016: PYTHON FOR NEUROSCIENCE (AND PSYCHOLOGY)  
University of Nottingham, Nottingham, UK  
*Three-days long (24h) training with Dr. Jon Peirce, the creator of Psychopy*

## Media Processing

I use **LaTeX** and Markdown for scientific reports. I'm also proficient with several media processing softwares such as **Adobe Photoshop**<sup>™</sup>, **Adobe Illustrator**<sup>™</sup>, **Inkscape**, **Avidemux** and the **Microsoft**®Office suite.

## Miscellaneous

### Grants, Honours and Awards

- 2014 PhD ministerial scholarship (3 years - 80 000€)

## Collaborations

### TRANSDISCIPLINARY COLLABORATIONS

- **Philosophy:**
  - **Fiction project**: Dr. J. Pelletier (France), Dr. S. Lemaire (France), Dr. J. Dokic (France), Dr. M. Arcangeli (France).
- **Bioengineering:**
  - **NeuroKit development**: R. Bartels (Brazil), N. Vack (USA), Carlos Carreiras (Portugal).
- **Statistics:**
  - **neuropsychology.R development**: Dr. P. M. Alday (Australia).

## Responsibilities

2016–18	ELECTED REPRESENTATIVE ED261-3CH doctoral school, University of Sorbonne Paris Cité, Paris, France <i>Elected PhD students' representative at the doctoral school council.</i>
2014–17	WEBMASTER <a href="#">La bibliothèque du neuropsychologue</a> <i>A scientific and philosophic books review blog.</i>
2014–15	COMMUNITY MANAGER Memory & Cognition Lab', University of Sorbonne Paris Cité, Paris, France <i>In charge of organising seminars, local conferences and social events.</i>
2009–12	ACTIVE MEMBER Student's Union, University of Sorbonne Paris Cité, Paris, France <i>In charge of organising social events for students.</i>

## Other interests

**Art:** Surrealism, Hyperrealism (21<sup>st</sup> century), romanticism (18-19<sup>th</sup> century) and expressionism.

**British culture during the romantic era:** literature, science, history, poetry...

**Music:** Piano and guitar.