Dr. Marion ROUAULT
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Google Scholar profile: https://scholar.google.com/citations?user=8IKm5IYAAAAJ&hl=fr&oi=ao

I am a cognitive and computational neuroscientist with a multidisciplinary research culture **(psychology, biology, mathematics, psychiatry). I am interested in the neurocognitive mechanisms underlying human metacognition, learning and decision-making, which I investigate using carefully controlled behavioural experiments in the lab and online, combined with computational modeling and neuroimaging, in healthy, neurological, and psychiatric populations.**

SUMMARY:
- I have published **12 papers in international peer-reviewed journals** (e.g. Nature Communications, PNAS, Biological Psychiatry), **3 preprints (2 are also under revision)**, 1 book chapter, and I am working on 3 pre-registered projects (1 pre-registered report submitted).
- I have been invited to present my work at **seminars in international laboratories of various disciplines** (11 invited seminars) and at conferences and **international workshops** (11 oral presentations, e.g. Cosyne, top 5% of submissions). I have also shared my research as poster presentations at international conferences (11 poster presentations).
- I have regularly **secured competitive funding** (e.g., French 'élève normalienne' (~top 1% of science students), a PhD fellowship, a postdoctoral fellowship (Axa Research Fund, top 20% of applicants)).
- I have completed a **substantial reviewing activity** for my career stage (37 reviews performed for international journals of various disciplines, and for a major conference). I am currently part of 4 Thesis Advisory Committees, and I was examiner in 2 **PhD jurys**, demonstrating **an expertise recognized by the community.**
- I contribute to a Working Group on 'Educate Critical Thinking' as part of the French *Scientific Council for National Education* (**French Ministry of Education**)
- I have **(co-)supervised 4 Masters and 2 PhD students**, across the Ecole Normale Supérieure of Paris (FR), Univ. College London (UK) and Univ. of Amsterdam (NL), who have all moved on to prestigious positions.
- I am part of **10 international collaborations**, most of them **independent** projects without previous advisors.

As a scientist, I aim to raise awareness and contribute to structural changes that will increase diversity in academia and STEM: not only do I take gender into account in my experimental studies, but also I participate to my department *Equality and Diversity* association, and to mentoring activities.

PROFESSIONAL EXPERIENCE

Post-doc 2 (01/04/2019-present). **Functional roles of metacognition in exploration and sense of agency.** Institute of Cognitive Studies, Ecole Normale Supérieure, Paris (V. Chambon & V. Wyart)

Post-doc 1 (16/01/2016-31/03/2019). **Constructing confidence signals for guiding learning and decision-making.** Wellcome Centre for Human Neuroimaging, University College London (S. Fleming)

PhD (01/10/2011-15/01/2015). **Integration of values and information in human decision-making.** Laboratory of cognitive neuroscience, Ecole Normale Supérieure, Paris (E. Koechlin)

MRes. 3 Research Project (01/02/2011-31/08/2011). **Learning and cognitive control: limits of the human executive function.** (E. Koechlin)

MRes. 2 Research Project (01/09/2010-31/12/2010). **Neuropsychological deficits in young people presenting antisocial traits.** Brain and Mind Research Institute, The University of Sydney, Australia (A. Guastella)

MRes. 1 Research Project (01/02/2010-30/06/2010). **Prior expectations bias emotion perception in schizophrenia.** Institute of Cognitive Neuroscience, University College London (S.-J. Blakemore)

BSc Research Project (01/06/2009-31/07/2009). Characterisation of insulin gene promotor mutations involved in neonatal diabetes. Institut Pasteur de Lille, France (M. Vaxillaire)

EDUCATION

PhD in cognitive neuroscience *summa cum laude* (Laboratory of Cognitive Neuroscience, INSERM U960, Ecole Normale Supérieure de Paris, 01/10/2011-22/09/2015)

Elève-fonctionnaire normalien (non-tenured position of remunerated trainee civil servant). Scholarship for a period of four years, awarded after succeeding the national competitive entrance exam. Bachelor of biology, Masters in Biosciences (MRes) awarded with distinctions (Ecole Normale Supérieure de Lyon, France, 01/09/2008-30/06/2011)

Classes préparatoires BCPST. Post-secondary program in Biology, Chemistry, Physics, Mathematics and Earth Sciences for national competitive entrance exam to the French « Grandes Ecoles » (Lycée Clémenceau, Nantes, France, 01/09/2006-31/07/2007)

PUBLICATIONS

https://publons.com/researcher/3867226/marion-rouault/ and https://orcid.org/0000-0001-6586-3788

My papers have had a strong and growing impact. Each study typically included rich analyses of multimodal evidence so as to tackle complex and open research questions in cognitive neuroscience. My work has been published in leading scientific journals and has rapidly been very cited:

- *Preprints and under review or revision:*

3. Hoven M., Denys D., Rouault M., Luigjes, J., & van Holst, R. (2022) How do confidence and self-beliefs relate in psychopathology: a transdiagnostic approach. ***PsyArXiv + submitted*** (psyarxiv.com/d45gn/)

2. Rouault M.*, Weiss, A., Lee, J. K., Bouté, J., Drugowitsch, J., Chambon, V.[$] and Wyart, V.*,[$] (2021) Controllability reveals defining features of information seeking. ***BioRxiv + revised manuscript resubmitted at eLife*** (IF=7.7) (biorxiv.org/content/10.1101/2021.01.04.425114v2) (*corresponding authors, [$]co-senior authors)

1. Rouault M.*,[$], Will, G. J.*, Fleming, S. M. & Dolan, R. J. (2021) Low self-esteem and the formation of self-performance estimates in young adulthood. ***PsyArXiv + revised manuscript resubmitted at Translational Psychiatry*** (IF=6.2) (psyarxiv.com/d8ns2/) (*co-first authors, [$]corresponding author)

- *Commentary in international peer-reviewed journal:*

1. Seow, T. X. F.*, Rouault M.*, Gillan, C. M. & Fleming, S. M. (2021) Reply to: Metacognition, Adaptation and Mental Health. ***Biological Psychiatry*** (IF=13.3) *equal contribution. (corresponding author)

- *Published papers in international peer-reviewed journals:*

7. Rouault M.*,[$], Lebreton, M.* & Pessiglione, M. (2021) A shared brain system for confidence judgements across cognitive domains. ***Cerebral Cortex, in press*** (IF=5.3) (*co-first authors, [$]corresponding author)

6. Rouault M.*, & Fleming, S. M. (2020). Formation of global self-beliefs in the human brain. ***Proceedings of the National Academy of Sciences***, *117*(44), 27268-27276. (*corresponding author) (IF=12.3)

5. Rahnev, D., Desender, K., Lee, A. L., Adler, W. T., Aguilar-Lleyda, D., Akdoğan, B., ..., Rouault M., … (2020). The confidence database. ***Nature human behaviour***, 1-8. (IF=13.6)

4. Rouault M.*, Dayan P. and Fleming S. M. Forming global estimates of self-performance from local confidence. ***Nature Communications***, 10:1141. doi.org/10.1038/s41467-019-09075-3 (*corresponding author) (IF=14.9)

3. Rouault M., Drugowitsch J. and Koechlin E. Prefrontal mechanisms combining rewards and beliefs in human decision-making under uncertainty. ***Nature Communications***, 10(1), 301 (IF=14.9)

2. Rouault M.*, Seow T. X. F.*, Gillan, C.M. and Fleming, S.M. (2018) Psychiatric symptom dimensions are associated with dissociable shifts in metacognition but not task performance. ***Biological Psychiatry***, S0006-3223(18)30029-5. **(154 citations (gScholar), one of the most cited papers of the journal in the two years following publication)** (*co-first author and corresponding author) (IF=13.3)

1. Barbalat G., Rouault M., Bazargani N., Shergill S. and Blakemore S.-J. (2012) The influence of prior expectations on facial expression discrimination in schizophrenia. ***Psychological Medicine***, 12:1-11. (IF=7.7)

- *Published review papers in international peer-reviewed journals:*

4. Rahnev, D., Balsdon, T., …, Rouault M., …, Zylberberg, A. (2021). Consensus goals in the field of visual metacognition. *Perspectives in Psychological Science, in press* (IF=9.4) (psyarxiv.com/z8v5x/)

3. Seow T. X. F.*, Rouault M.*, Gillan, C.M. and Fleming, S.M. (2021) How local and global metacognition shape mental health. *Biological psychiatry* (IF=13.3) (*co-first author and corresponding author)

2. Rouault M. and Koechlin E. (2018) Prefrontal function and cognitive control: from action to language. *Current Opinion in Behavioral Sciences*, 21:106-111. (IF=4.5)

1. Rouault M., McWilliams A., Allen, M., Fleming S.M. (2018) Human metacognition across domains: insights from individual differences and neuroimaging. *Personality Neuroscience*, Vol 1:e17, p. 1-13. doi:10.1017/pen.2018.16 (IF=1.4). **93 citations, gScholar**.

- *Pre-registrations (not peer-reviewed):*

3. Rouault M., Kavanova, M., and Wyart, V. (2021) Controllability and symptom dimensions. *OSF* (corresponding author) (https://osf.io/2haue, embargoed)

2. El Zein, M., Rouault M., Wurzer, D., Haggard, P., and Deroy, O. (2021) Opting for individual or collective choice. *OSF + submitted* (https://osf.io/vbrs8/)

1. Rouault M., Pereira, I., Fleming, S. M., Vinckier, F., Stephan, K., and Manjaly, Z. (2021) Interoceptive and Metacognitive Factors of Fatigue in Multiple Sclerosis. (Paper in preparation; pre-registration available at https://gitlab.ethz.ch/tnu/analysis-plans/rouault_imefa_analysis_plan) (corresponding author)

- *Book chapter:*

1. Rouault M., *Learning and Decision-Making*. Book Chapter in *La Cognition: du neurone à la société*. Folio Essais, Gallimard, published 05/04/2018 (**in French**).

FUNDING AND AWARDS

Pending application: An ERC-StG (13/01/2022, 1.5m€) application has been submitted to support my research program in the long term.

Young Researcher Prize of the *Fondation des Treilles* (03/2022) (10k€)

Postdoctoral fellowship from the *Axa Research Fund* (01/12/2020-31/07/2022) (125k€, *top 20% of applicants*) [mostly salary plus small research expenses]

L'Oréal-UNESCO For Women in Science prize (08/10/2019) (20k€, *top 5% of applicants*) [research expenses]

Travel award from The Guarantors of Brain (NeuroFrance meeting of the Society for Neuroscience, Bordeaux, 17-19/05/2017) (600€)

Best poster in neuroscience award (Annual meeting of the *Association for the Scientific Study of Consciousness*, Paris, 07-10/07/2015)

Three-years PhD fellowship (Allocation doctorale moniteur normalien) (01/09/2012-31/08/2015) (60k€ net)

Elève-fonctionnaire normalien i.e. non-tenured position of remunerated trainee civil servant. Full scholarship for a period of four years, awarded after succeeding the national competitive entrance exam (01/09/2008-31/08/2012) (65k€ net, *~top 1% of science students*)

PROFESSIONAL SERVICE

Contributor to the working group **"Educate Critical Thinking" of the French Scientific Council of National Education** (French Ministry of Education; leaders: G. Bronner, E. Pasquinelli), regarding the development of experimentations and interventions in classrooms to measure self-confidence and metacognitive abilities.

Reviewer of abstracts for the **Computational and Systems Neuroscience (Cosyne) 2021 annual meeting**, the leading conference in computational neuroscience

Ad hoc reviewer (37 reviews) including Nature Human Behaviour, Nature Communications, Plos Biology, eLife, Journal of Neuroscience, Cerebral Cortex, Nature Scientific Reports, Social Cognitive and Affective Neuroscience, Neuroimage, Psychological Medicine, Translational Psychiatry, eNeuro, Attention Perception & Psychophysics, Cognition, Computational Psychiatry, Psychoneuroendocrinology, Consciousness & Cognition, Plos One, Current Psychology, Communications Biology, Psychiatry Research, Cognition and Emotion **(record available at publons.com/researcher/3867226/marion-rouault/)**

Reviewer for the NGO *Libraries Without Borders* project of translating in French the **online open-access platform** http://www.codecademy.com which allows anyone to learn for free different programming languages

Student representative for the PI meetings at the Laboratory of Cognitive Neuroscience (2013-15)

INVITED SEMINARS

[upcoming] Invited seminar in the lab of S. Kaiser, Department of Psychiatry, Univ. of Geneva (online, 18/05/2022)

Invited seminar for the **GHU Paris, Centre Hospitalier Sainte-Anne** (Paris, 10/06/2021)

Invited seminar at the **Frontal Functions and Pathology** (FrontLab) team, Paris Brain Institute (09/06/2021)

Invited presentation in the lab of P. Dayan, F. Lieder and E. Schulz, University of Tuebingen (**Germany**, 25/01/2021)

Invited seminar at **Sackur lab,** Cognitive Science and Psycholinguistics laboratory**, ENS Paris** (18/01/2021)

Computational Psychiatry & Computational Psychosomatics seminar, Translational Neuromodeling Unit, University of Zurich & ETH Zurich (**Zurich, Switzerland**, 25/11/2020)

Invited seminar at **Rahnev lab, Georgia Tech, USA** (13/11/2020)

Invited seminar at the Cognitive Seminar Series, **Brown University, Providence USA** (06/11/2020)

Invited online seminar at the **Translational Computational Psychiatry Workgroup** (M. Browning, Q. Huys and M. Paulus) (17/06/2020)

Colloquia Clinical Psychology Department, Leiden University (**Leiden, Netherlands**, 08/04/2020) (canceled due to the pandemic, to be rescheduled)

Cognition, Values, Behaviour group, Ludwig-Maximilians-Universität München (O. Deroy, **Munich, Germany**, 04/03/2020)

Workshop Metacognition and Freedom of choice in mental illness, Institut d'Etudes Avancées (L. Charles, L. Berkovitch, **Paris, France**, 11-12/12/2019)

Center of Attachment and Emotional Regulation, Universidad del Desarollo (**Santiago, Chile**, 14-15/11/2019) (canceled due to security reasons)

European Society for Cognitive Psychology (**Tenerife, Spain**, 25-28/09/2019)

Workshop on Metacognition (C. Moulin, C. Souchay & A. Mazancieux, **Grenoble, France**, 17-18/07/2019)

The formation of global self-beliefs. ABC Symposium: Metacognition and Confidence (J. Luigjes, J. Engelmann, M. Lebreton & R. van Holst, **Amsterdam, Netherlands**, 21/06/2019)

A neural basis for global self-beliefs. Max Planck Centre for Computational Psychiatry and Ageing (**London, UK**, 20/06/ 2019)

Metacognitive signals for global self-beliefs. Workshop on Metacognition, Consciousness & Agency (J. Shepherd, University of Barcelona Carleton, **Barcelona, Spain**, 09-10/05/2019)

Forming global estimates of self-performance from local confidence. Symposium on metacognition at TEAP (German Experimental Psychology conference) (**London, UK**, 15-17/04/2019)

Metacognitive signals for learning and decision-making. Aix-Marseille Université (**Marseille, France**, 29/03/2019) and Wellcome Centre for Human Neuroimaging, UCL (**London, UK**, 15/03/2019)

Variability in psychopathology is linked to confidence level but not decision formation in perceptual decision-making. Workshop on Computational Approaches to Decision and Affective Neuroscience (R. Rutledge, UCL, **London, UK**, 08-09/06/2017)

CONFERENCE TALKS AND POSTER PRESENTATIONS

[upcoming] **How local and global metacognitive beliefs affect mental health.** Invited talk at the workshop "Computations of metacognition and agency in mental health" (London, UK, 28/07/2022)

[upcoming] **Controllability reveals defining features of information seeking.** Abstract submitted for the **FENS meeting (Federation of European Neuroscience)** (Paris, France, 9-13/06/2022)

[upcoming] **The role of confidence in information-seeking.** Invited talk at the workshop "Cognitive Control and Performance Monitoring" (Marseille, France, 29-31/05/2022)

[upcoming] **Control processes meeting.** Organizers: D. Badre, R. Cools, T. Egner. (online, 19-20/05/2022)

Discussant for the Session "Confidence as a Learning Signal" at the Workshop on perceptual confidence and uncertainty (organisers: P. Mamassian, J. Graves, S. Locke, T. Balsdon) (online, 24-26/06/2021)

Signatures of information-seeking in controllable environments. **Rouault M.**, Weiss, A., Lee, J. K., Bouté, J., Drugowitsch, J., Chambon, V.* and Wyart, V.*. Poster at the Symposium on Biology of Decision-Making (online, 10-12/05/2021)

Rouault M., Weiss, A., Lee, J. K., Bouté, J., Drugowitsch, J., Chambon, V. and Wyart, V. Distinctive signatures of information seeking during changes-of-mind in controllable environments. (**Cosyne**, online 24-26/02/2021) **abstract selected for a talk (top 5% of submissions)**

Oral presentation at the Workshop Metacognition and Freedom of choice in mental illness, Institut d'Etudes Avancées (L. Charles, L. Berkovitch, **Paris, France**, 11-12/12/2019)

A neural basis for the formation of global self-beliefs. Rouault M. **& Fleming, S.M. Poster at the Symposium on Biology of Decision-Making (** Oxford, UK**, 27-29/05/2019)**

Psychiatric symptom dimensions are associated with dissociable shifts in metacognition but not task performance. **Rouault M.**, Seow T., Gillan C. and Fleming, S.M. **Abstract selected for a data blitz presentation** at Computational Approaches on Animal & Human Behavior workshop of the European Behavioural Pharmacology Society (**Cambridge, UK**, 29-31/07/2018)

Learning about self-performance in the absence of feedback. **Rouault M.**, Dayan P. and Fleming, S.M. Poster at the Symposium on Biology of Decision-Making (**Paris, France**, 21-23/05/2018)

Constructing confidence in the absence of feedback. **Rouault M.**, Dayan P. and Fleming, S. Poster at the Society for Neuroscience annual meeting (**Washington DC, USA**, 11-15/11/2017)

Variability in psychopathology is linked to confidence but not performance in perceptual decision-making. **Rouault M.***, Seow T.*, Gillan, C. and Fleming, S. Poster presented at NeuroFrance meeting of the French Society for Neuroscience (**Bordeaux, France**, 20-22/05/2017)

Dual prefrontal system trades-off between outcome reliability and outcome value. Symposium of Biology of Decision-Making (**Bordeaux, France**, 17-19/05/2017)

Psychiatric symptoms track confidence but not performance in perceptual decision-making. **Rouault M.***, Seow T.*, Gillan, C. and Fleming, S. Poster at MQ Mental Health Science Meeting (**London, UK**, 01-02/02/2017)

Integration of beliefs and affective values in human decision-making. **Rouault M.**, Drugowitsch J., Lodeho A.-D. and Koechlin E. Poster at the Quadriennal Meeting on Orbitofrontal Cortex Function (**Paris,** 30-31/09/2015)

Integration of beliefs and affective values in human decision-making. **Rouault M.**, Drugowitsch J., Lodeho A.-D. and Koechlin E. Poster at the workshop Probabilistic Inference and the brain (**Paris, France**, 10-11/09/2015)

Dual prefrontal system trades-off outcome reliability and outcome value. **Rouault M.**, Drugowitsch J. and Koechlin E. Poster at the Annual meeting of the Association for the Scientific Study of Consciousness (**Paris, France**, 07-10/07/2015) **Awarded best poster in neuroscience.**

Values and information in decision-making. Nanosymposium at the Society for Neuroscience annual meeting (**Washington DC, USA**, 15-19/11/2014)

Bayesian inference, reward value and predictability in counterfactual learning. Poster at the 4th International Symposium on Biology of Decision-Making (**Paris, France**, 26-28/05/2014)

Value and predictability of action outcomes. Poster at the 3rd International Symposium on Biology of Decision-Making (**Paris, France**, 29-30/05/2013)

SUPERVISION, MENTORING, AND COMMITTEES

Examiner ('rapporteur') for PhD jurys:
 ➢ L. Wei (PhD student with N. Yeung, University of Oxford, PhD defense 23/11/2021)
 ➢ C. Culot (PhD student with W. Gevers, Université Libre de Bruxelles, PhD defense 28/01/2021)
Member of PhD Thesis Advisory Committees:
 ➢ C. Sauvain (PhD student with J. Sackur, Ecole Normale Supérieure of Paris, since 11/2021)
 ➢ A. Nasioulas (PhD student with M. Lebreton, Paris School of Economics, since 01/2022)
 ➢ S. Moreno (PhD student with E. Volle and A. Lopez-Persem, Paris Brain Institute, since 11/2021)
 ➢ W. Hopper (PhD student with J. Daunizeau, Paris Brain Institute, since 11/2020)
Mentoring (via department Equality & Diversity program): N. Wolpert (PhD student, ENS Paris, since 05/2019)

Leadership summary: I have co-supervised 4 Masters, 1 Medical school, and 2 PhD students; the future of trainees is important to me and all of them have subsequently moved on to prestigious positions. Most students were co-supervised with my PI due to institutional requirements, but I was the main supervisor responsible for the day-to-day management of the project; while two of the students were genuine co-supervisions:

• **PhD students supervision:**

Dissociation of value and information in action outcomes. Flora Bouchacourt, **PhD student at Ecole des Neurosciences de Paris** (01/01/2012-31/03/2012). Co-supervised with E. Koechlin. (now postdoc at Princeton University)

Reward volatility and trait compulsivity contribute to decision variability. Junseok Lee, **PhD student at Laboratory of Cognitive Neuroscience, ENS Paris** (01/09/2019-). PhD advisor: V. Wyart. (intellectual contribution, no official supervision role; Lee, Rouault and Wyart, paper in preparation)

• **Masters students supervision:**

Transdiagnostic symptoms and changes of mind. Martina Kavanova, **Dual Masters in Brain and Mind Sciences** (01/11/2020-30/06/2021). Co-supervised with V. Wyart. (now project manager at Aspen Institute Central Europe)

Interaction between mood and confidence. Juliana Sporrer, **Dual Masters in Brain and Mind Sciences** (01/10/2018-31/07/2019). Co-supervised with M. Vaghi. (now PhD student at UCL)

Supervision of a Library project, topic: Constructing global confidence estimates from local experience. R. Jagiello, **UCL MSc. In Brain and Mind Sciences** (10/2018-12/2018) (now PhD student at Oxford University).

Building confidence estimates in the absence of feedback. S. Alsuwaidi, **UCL MSc. in Neuroscience** (01/11/2016-10/08/2017). Co-supervised with S. Fleming. (now PhD student at McGill University)

• **Medical student supervision:**

Neural correlates of beliefs and affective values. A. Viterbo, **Medical School, Paris VI** (01/05/2013-31/07/2013). Co-supervised with E. Koechlin. (now intern in psychiatry at Hotel Dieu hospital APHP)

ONGOING COLLABORATIONS

Collaborations established during my first postdoc at University College London:

- Interoceptive and metacognitive factors of fatigue in multiple sclerosis (Z. Manjaly, S. Fleming and K. Stephan, **ETH-TNU, Zurich, Switzerland**) (Data collection is now finished but Covid created delays)
- Metacognitive and mentalising abilities in borderline personality disorder (T. Nolte, R. Montague and P. Fonagy, **University College London, UK**)
- Low self-esteem and the formation of self-performance estimates in young adults (G.J. Will, S. Fleming and R. Dolan, **University of Leiden, Netherlands**) (paper under revision at *Translational Psychiatry*)
- Influence of gains and losses on decision-making (A. Ghambaryan, V. Klucharev, E. Koechlin and B. Gutkin, **National Research University Higher School of Economics, Moscow, Russia**)

Independent collaborations (without PhD or postdoctoral advisors):

- Generality of confidence judgments (M. Lebreton and M. Pessiglione, **Paris Brain Institute, Paris, France**) (host institution of the present application) (paper accepted at *Cerebral Cortex*)
- Metacognitive evaluation in major depression (F. Vinckier and M. Pessiglione, **Paris Brain Institute and GHU Paris Centre hospitalier Sainte-Anne**) (delays in data collection due to Covid)
- Confidence of professional doctors in their medical decision-making (C. Lakhlifi, B. Rohaut and M. Khamassi, **Paris Brain Institute, AP-HP and Pitié-Salpêtrière hospital**)
- Global confidence and psychopathology (R. van Holst, J. Luigjes and M. Hoven, **University of Amsterdam, Netherlands**) (preprint: psyarxiv.com/d45gn)
- Metacognitive accuracy in autistic individuals (C. Grainger, **University of Stirling, UK**)
- The role of confidence and responsibility in joining groups for decision-making (M. El Zein, P. Haggard and O. Deroy, **Ludwig-Maximilians-Universität München, Germany**) (pre-registered report: osf.io/vbrs8)

SCIENTIFIC METHODS AND CONCEPTUAL APPROACH

My past experiences allowed me to gather the conceptual expertise and technical skills necessary for the study of self-confidence proposed in the present research project:

- **The development of computational models is a central aspect of my scientific research. These models provide insight into the mechanisms underlying behavior, and give an operational meaning to the psychological concepts:**

> **Mathematical and computational models of control, learning and decision-making. Optimization techniques** for fitting model's parameters to behavioral data (e.g. Markov Chain Monte Carlo sampling)

> **MATLAB** and **Psychtoolbox** (advanced knowledge); SPSS; **R** (basics); **SPM** (advanced); **UNIX** (basic for use of computing servers); **Python** (basics); **LaTeX**; **STAN** for probabilistic programming (basics); **GitHub** (basics) ; Word, Excel, PowerPoint, Adobe Illustrator

- Strong experience in the management and programming of online experiments (backend and frontend: **JavaScript**; **HTML**; **SQL**; Amazon M. Turk, Prolific Academic)

- **Behavioural experimental design** and data collection with healthy adults and adolescents, and with patients (social anxiety, schizophrenia); practise of standard neuropsychological and IQ tests

- **Extensive expertise in neuroimaging: MRI** data acquisition (functional, anatomical, diffusion) and analysis (advanced knowledge), **pupillometry** acquisition and analysis (basics), **MEG** analysis (basics)

- **Open Science**. I have shared analysis code and summary data to reproduce the main statistical analyses of published studies on my GitHub page (*github.com/marionrouault/)*, in compliance with GDPR requirements. GitHub is an open, community-recognized repository that ensures the data can be freely and enduringly accessed. **Other researchers have contacted me to use my resources to tackle new research questions, demonstrating the influence of my work and the usefulness of my initiative for the community and for adjacent research fields** (e.g. A. Zylberberg, *Columbia University*; M. Husain, *Oxford University*; C. Charpentier, *Caltech*; Q. Huys, *Max Planck Centre of Computational Psychiatry and Ageing, UCL*)

TEACHING

Summary: I have been teaching at graduate and postgraduate levels, in Masters programs and summer schools both for clinicians and neuroscience researchers in France, Belgium, Spain, Switzerland and the UK, demonstrating an expertise recognized by the community.

· Graduate and postgraduate levels:
- Guest lecture and tutorial « Models of Metacognition » in the « Computational Psychiatry Course » (Zurich, 04-10/09/2021)
- Lecture and Tutorial in the UCL/PSL Summer School in Consciousness and Metacognition (28-30/06/2021)
- Teaching assistant in the summer school « Barcelona Advanced Modeling of Behavior » (05-11/09/2019)
- Lecturer in the SPM course (FIL, UCL) (2018 and 2019 sessions)
· Masters level:
- Lecturer in the Cogmaster reinforcement learning (2019-2020-2021) and in the Education and Cognition module (2021)
- Guest Lecture in the Theoretical and Experimental Psychology Masters program (Ghent University, Belgium)
- Lecturer in the UCL MSc. in Neuroscience module Higher Functions of the Brain, essays marking (2016 and 2017);
- Teaching Assistant for Master's degree students (French Monitorat): Refresher course in mathematics for cognitive science, brain development lecture, and tutorial in the form of a journal club in the module Action, Decision and Volition (Cogmaster ENS Paris, EHESS and Paris V) (2012-15)
In more detail:

· Graduate and postgraduate levels:
- **Guest lecture and tutorial « Models of Metacognition » in the « Computational Psychiatry Course »** (Zurich, 04-10/09/2021)
Public: Established clinicians, PhD students and postdocs in psychiatry, neuroscience or related disciplines.

- Lecture and Tutorial in the UCL/PSL Summer School in Consciousness and Metacognition (28-30/06/2021)
Public: PhD students interested in the scientific study of consciousness (psychology, neuroscience).

- Teaching assistant in the summer school « Barcelona Advanced Modeling of Behavior » (05-11/09/2019). Responsible for creating the materials for two of the tutorials for the first edition of the school, and coordination of the group research projects.
https://www.bambschool.org/bamb-2019
Public: PhD students and postdocs selected after an application process.

- Lecturer in the SPM course. Group analysis; 1h; FIL, UCL, 2018 and 2019 sessions. https://www.fil.ion.ucl.ac.uk/spm/course/london/
Public: The course on using Statistical Parametric Mapping for neuroimaging is for both beginners and advanced researchers.

· Masters level:
- **Guest Lecture on « Metacognition » in the** *Education and Cognition module* **of the Cogmaster program** (29/09/2021)
- Guest Lecture 'Cognitive and Computational signatures of decision-making and information-seeking' in the Theoretical and Experimental Psychology Masters program (Ghent University, Belgium)
- Lecturer in the Cogmaster (reinforcement learning, 2h lecture every year since 2019)
- Lecturer in the UCL MSc. in Neuroscience module Higher Functions of the Brain (1h, 2016 and 2017), essays marking; supervision of Library Project
- Teaching Assistant for Master's degree students (French Monitorat) (2012-15) ; total = 160 hours 'équivalent TD':
- Cogmaster AMS : Refresher course in mathematics and statistics for cognitive science (8h of Cours Magistraux + 8h of TD per year)
- Cogmaster FCS1 : Action, Decision, Volition (2h of Cours Magistraux per year (2014-15) + 15h of TD per year (2012-13) + 30h of TD (2013-14 and 2014-15)
Course on psychology of executive functions and cognitive neuroscience of action, decision, volition
- Cogmaster GDP1 : Genes, Brain, Environment and cognitive development
Course in psychology and developmental biology (3h per year, 2012-15)
Public: For all the above, Masters students whose initial training was in psychology, philosophy, medicine, linguistics, biology, physics and/or mathematics.

PUBLIC ENGAGEMENT

My research has received media attention at the local and international levels via journal articles and radio shows, in France and in the UK (marionrouault.weebly.com/public-outreach.html). Here is a selection:

- Interview for the foundation « La main à la pâte » at the interface between education and cognitive sciences

https://synapses-lamap.org/2022/01/24/interview-metacognition-confiance-confiance-en-soi/
- Article for « *Le Projet Pangolin »,* a program of scientific outreach aiming at raising awareness, at all ages, about the development of a critical mind
https://www.projetpangolin.com/marion-rouault-docteure-neuroscience-confiance-en-soi/
- I have contributed to **a workshop for 15-25 years old for promoting a healthy self-esteem**, in my collaboration with an association for youth and the mairie of my hometown ('Spot15-25' association at Guérande, 44, France): *marionrouault.weebly.com/uploads/4/5/7/6/45761011/img_20210213_074019__1_.jpg*
- Interview for *La Méthode Scientifique*, a **radio show on France Culture. Emission 'I doubt, therefore I am'**
https://www.franceculture.fr/emissions/la-methode-scientifique/la-methode-scientifique-emission-du-lundi-26-avril-2021
- UCL press release on our Nature communications paper investigating self-performance estimates:
https://www.ucl.ac.uk/brain-sciences/news/2019/mar/study-finds-people-underestimate-their-abilities-when-feedback-withheld

LANGUAGES

French (native); English (fluent) and Spanish (fluent)

MISCELLANEOUS

Swimming, Dance; First-Aid certificate (AFPS); Driving license.