

LIEKE HOFMANS

PROFESSIONAL EXPERIENCE

01/02/2021 – present	Postdoctoral researcher Dept. Developmental Psychology, University of Amsterdam, The Netherlands Topic: Development of the neurocognitive mechanisms of social learning Supervisor: Dr. Wouter van den Bos
15/09/2020 – 15/12/2020	Postdoctoral researcher Donders Centre for Cognitive Neuroimaging, Nijmegen, The Netherlands Topic: Dopamine and motivational and cognitive control Supervisor: Prof. Dr. Roshan Cools
01/05/2016 – 30/04/2020	PhD candidate Donders Centre for Cognitive Neuroimaging, Nijmegen, The Netherlands Topic: Dopamine and motivational and cognitive control Supervisor: Prof. Dr. Roshan Cools Award date: 03/06/2021

Internships

01/12/2014 – 30/06/2015	Neuro-oncology Research Group, VUmc Amsterdam, The Netherlands Topic: Effects of microglial cytokine release on brain tumor stem cells Supervisor: Prof. Dr. Thomas Würdinger
01/09/2014 – 30/09/2014	Institute of Neurology, University College London, England Topic: 3D-analysis of microglia depletion-therapy against glioblastoma Supervisor: Prof. Dr. Sebastian Brandner

EDUCATION

01/05/2016 – 30/04/2020	PhD in Cognitive Neuroscience, Radboud University Nijmegen, The Netherlands
01/09/2013 – 31/08/2015	Double international Master Neuroscience, NEURASMUS, Erasmus Mundus <ul style="list-style-type: none">• MSc Cellular and Molecular Neurobiology: University of Coimbra, Portugal• MSc Clinical Neuroscience: Charité - Universitätsmedizin Berlin, Germany
01/09/2010 – 31/08/2013	Bachelor Psychology, Tilburg University, The Netherlands
01/01/2013 – 30/06/2013	Semester abroad, Chinese University of Hong Kong, Hong Kong SAR

PUBLICATIONS

Hofmans, L., van der Stappen, A. & van den Bos, W. (2023). Developmental structure of digital maturity. *PsyArXiv*. <https://doi.org/10.31234/osf.io/2jx8h>

Sayali, C., van den Bosch, R., Määttä, J.I.M., **Hofmans, L.**, Papadopetraki, Booij, J., Verkes, R.-J., Baas, M. & Cools, R. (2023). Methylphenidate undermines or enhances divergent creativity depending on baseline dopamine synthesis capacity. *Neuropsychopharmacology*. <https://doi.org/10.1038/s41386-023-01615-2>

Chen, P., Geurts, D.E.M., Määttä, J.I.M., van den Bosch, R., **Hofmans, L.**, Papadopetraki, D., den Ouden, H.E.M. & Cools, R. (2023). Effect of striatal dopamine on Pavlovian bias. A large [18F]-DOPA PET study. *Behavioral Neuroscience*. <https://doi.org/10.1037/bne0000547>.

van den Bosch, R., Hezemans, F.H., Määttä, J.I.M., **Hofmans, L.**, Papadopetraki, D., Verkes, R.-J., Marquand, A.F., Booij, J. & Cools, R. (2023). Evidence for absence of links between striatal dopamine synthesis capacity and working memory capacity, spontaneous eye-blink rate, and trait impulsivity. *eLife*, 12, e83161. <https://doi.org/10.7554/eLife.83161>

de Groot, E.C.S., **Hofmans, L.** & van den Bos, W. (2022). Brain structure correlates of social information use: An exploratory machine learning approach. *psyArXiv*. <https://doi.org/10.31234/osf.io/592au>.

Hofmans, L. & van den Bos, W. (2022). Social learning across adolescence: A Bayesian neurocognitive perspective. *Developmental Cognitive Neuroscience*, 58, 101151. <https://doi.org/10.1016/j.dcn.2022.101151>.

van den Bosch, R., Lambregts, B., Määttä, J.I.M., **Hofmans, L.**, Papadopetraki, D., Westbrook, A., Verkes, R.-J., Booij, J. & Cools, R. (2022). Striatal dopamine dissociates methylphenidate effects on value-based versus surprise-based reversal learning. *Nature Communications*, 13, 4962. <https://doi.org/10.1038/s41467-022-32679-1>.

Hofmans, L., Westbrook, A., van den Bosch, R., Booij, J., Verkes, R.-J. & Cools, R. (2022). Effects of average reward rate on vigor as a function of individual variation in striatal dopamine. *Psychopharmacology*, 239, 465-478. <https://doi.org/10.1007/s00213-021-06017-0>

Määttä, J.I.M., van den Bosch, R., Papadopetraki, D., **Hofmans, L.**, Lambregts, B., Westbrook, A., Verkes, R.-J. & Cools, R. (2022). Predicting effects of methylphenidate and sulpiride on brain and cognition: a pharmacofMRI, PET study. Design and descriptives. Preprint at <https://osf.io/d3h8e> (2021).

Westbrook, A., Ghosh, A., van den Bosch, R., Määttä, J.I., **Hofmans, L.** & Cools, R. (2021). Striatal dopamine synthesis capacity reflects smartphone social activity. *iScience*, 24, 102497. <https://doi.org/10.1016/j.isci.2021.102497>

van Lieshout, L.L.F., van den Bosch, R., **Hofmans, L.**, de Lange, F.P. & Cools, R. (2020). Does dopamine synthesis capacity predict individual variation in curiosity? *bioRxiv*. <https://doi.org/10.1101/2020.10.13.337477>

Hofmans, L., van den Bosch, R., Määttä, J.I., Verkes, R.-J., Aarts, E. & Cools, R. (2020). The cognitive effects of a promised bonus do not depend on dopamine synthesis capacity. *Scientific Reports*, 10, 16473. <https://doi.org/10.1038/s41598-020-72329-4>

Hofmans, L., Papadopetraki, D., van den Bosch, R., Määttä, J.I., Froböse, M.I., Zandbelt, B.B., Westbrook, A., Verkes, R.-J. & Cools, R. (2020). Methylphenidate boosts choices of mental labor over leisure depending on baseline striatal dopamine. *Neuropsychopharmacology*, 45, 2170-79. <https://doi.org/10.1038/s41386-020-00834-1>

Westbrook, A., van den Bosch, R., Määttä, J.I., **Hofmans, L.**, Papadopetraki, D., Cools, R.* & Frank, M.J.* (2020). Dopamine promotes cognitive effort by biasing the benefits versus costs of cognitive work. *Science*, 367, 1362-1366. <https://doi.org/10.1126/science.aaz5891>

Cools, R., Froböse, M. I., Aarts, E. & **Hofmans, L.** (2019). Dopamine and the motivation of cognitive control. In M. D'Esposito & J.H. Grafman (Eds.), *The Frontal Lobes* (pp. 123-143). San Diego, CA: Elsevier BV. <https://doi.org/10.1016/B978-0-12-804281-6.00007-0>

ONGOING PROJECTS

Hofmans L. & van den Bos, W. Neural and behavioral determinants of uncertainty in social information use. **Analysis.**

- Here, I apply a Bayesian cognitive model and univariate and representational similarity fMRI analysis on adult participants to reveal how neural patterns predict social information use.

Hofmans L. & van den Bos, W. Neural and behavioral determinants of uncertainty in adolescents' social information use. **Data acquisition**

- A study similar to *Neural and behavioral determinants of uncertainty in social information use* above, to investigate how these processes develop across adolescence and how they compare to those in adulthood.

Hofmans L. & van den Bos, W. Neural and behavioral determinants of uncertainty in adolescents' social information use. **Data acquisition**

- Here, I collect data from adolescents and their classmates to study whether different levels of social proximity elicit differential neural patterns using representational similarity analysis, and whether the observed dissimilarity predicts behavioral effects on social information use in an independent task.

CONFERENCE PRESENTATIONS

- 01/06/2023 **Hofmans, L.** & van den Bos, W. Confidence-related effects on the behavioral and neural integration of social information.
Poster at NVP Dutch Society for Brain and Cognition Winter Conference, Egmond aan Zee, NL
- 01/06/2023 **Hofmans, L.** & van den Bos, W. Social learning: A Bayesian neurocognitive perspective.
Poster at Symposium on Biology of Decision-Making, Paris, FR

- 28/04/2022 **Hofmans, L.**, Westbrook, A., van den Bosch, R., Booij, J., Verkes, R.-J. & Cools, R. Effects of average reward rate on vigor as a function of individual variation in striatal dopamine.
Talk at NVP Dutch Society for Brain and Cognition Winter Conference, Egmond aan Zee, NL
- 19/12/2019 **Hofmans, L.**, Papadopetraki, D., van den Bosch, R., Määttä, J.I., Froböse, M.I., Zandbelt, B.B., Westbrook, A., Verkes, R.-J. & Cools, R. Baseline dopamine predicts individual variation in methylphenidate's effects on cognitive motivation.
Poster at NVP Dutch Society for Brain and Cognition Winter Conference, Egmond aan Zee, NL
- 07/11/2018 **Hofmans, L.**, Papadopetraki, D., van den Bosch, R., Määttä, J.I.M., Westbrook, A. & Cools, R. Does dopamine modulate the subjective cost of cognitive control?
Poster at Society for Neuroscience Annual Meeting, San Diego, USA
- 21/05/2018 **Hofmans, L.**, Papadopetraki, D., van den Bosch, R., Määttä, J.I.M., Lambregts, B.I.H.M., Westbrook, A. & Cools, R. Dopamine modulates the subjective value of cognitive control.
Poster at Symposium on Biology of Decision-Making, Paris, FR
- 19/06/2017 **Hofmans, L.**, Määttä, J., Van den Bosch, R., Zandbelt, B., Piray, P., Van Holst, R., Froböse, M., Westbrook, A., Collins, A., Frank, M., Boot, N., & Cools, R. Effects of methylphenidate and sulpiride on brain and cognition: a PET, pharmaco-fMRI study.
Poster at FENS-SfN Summer School, Bertinoro, IT

GRANTS AND AWARDS

- 12/12/2019 €150 – Best poster award (out of ~100 posters), Donders Institute, Donders poster sessions
- 25/09/2018 €700 – Travel Grant for Society for Neuroscience meeting, International Office Radboud University Nijmegen
- 26/04/2017 £603.23 – Travel Grant for BBSRC STARS course on Reproducibility, University of Bristol
- 01/09/2013 €4 665 – Excellence Scholarship: on the grounds of outstanding study results obtained during the bachelor's program, to partially cover tuition fees for a master's program abroad, Tilburg University, the Netherlands
- 10/05/2013 €20 000 – Erasmus Mundus Scholarship: monthly allowance and tuition fees covered during the two-year NEURASMUS master's Program, European Commission

INVITED REVIEWS

BMC Psychiatry, Cerebral Cortex, Conference on Cognitive Computational Neuroscience, eLife, European Journal of Neuroscience, Personality Neuroscience

TEACHING

Supervision and examination

- 01/09/2023 – 02/02/2024 Lars Middag, Research internship, thesis, Bachelor Psychobiology
- 06/02/2023 – 23/06/2023 Asya Yildirim, Research internship, thesis, Bachelor Psychobiology
- 06/02/2023 – 23/06/2023 Anna Ansems, Research internship, thesis, Bachelor Psychobiology
- 06/02/2023 – 23/06/2023 Annemarijn van der Stappen, Research internship, thesis, Bachelor Psychobiology
- 02/02/2023 – 09/06/2023 Rianne Verhaegh, Research internship, Master Brain and Cognitive Sciences
- 31/10/2022 – 23/12/2022 Lucia Hendrikse, Literature thesis, Master Brain and Cognitive Sciences
- 31/01/2022 – 21/06/2022 Lucia Hendrikse, Research internship, Master Brain and Cognitive Sciences
- 07/02/2022 – 01/07/2022 Fleur Korzilius, Research internship, Research Master Psychology
- 06/09/2021 – 28/01/2022 Gaia Evers, Research internship, thesis, Bachelor Psychobiology
- 01/11/2021 – 28/01/2022 Sequoia Duker, Research internship, thesis, Bachelor Psychobiology
- 01/02/2021 – 10/07/2021 Quinty Daas, Research internship, Master Brain and Cognitive Sciences
- 03/09/2018 – 08/07/2019 Marije Mars, Research internship, thesis, Research Master Cognitive Neuroscience
- 06/02/2017 – 30/06/2017 Lola Jansen, Research internship, thesis, Bachelor Psychobiology
- 08/12/2016 – 27/06/2017 Michiel Schwerzel, Research project, Bachelor Medicine
- 08/12/2016 – 27/06/2017 Sara Busser, Research project, Bachelor Medicine
- 08/12/2016 – 27/06/2017 Irene Stadhouders, Research project, Bachelor Medicine

Tutoring

- 16/01/2017 – 24/02/2017 Tutor Brain and Cognition I, Bachelor Psychology, Radboud University
- 01/11/2012 – 15/12/2012 Tutor Statistics, Bachelor Psychology, Tilburg University

PUBLIC ENGAGEMENT

04/07/2023	Interview NEMO Kennislink , Dutch science journalism website with ~42 000 newsletter subscribers. Interview about learning and development.
11/11/2021 – 11/12/2021	Research at NEMO Science Museum , Amsterdam Running test sessions and enthuse visitors about scientific research.
01/01/2018 – 28/02/2020	External relations officer , Donders Institute, Radboud University Nijmegen Organizing and giving seminars and masterclasses about neuroscience and scientific research for primary school, secondary school and university students.
01/10/2018 – 30/04/2019	Radboud Science Team , Donders Institute, Radboud University Nijmegen Together with a team of researchers, developing a teaching module to incorporate science-based learning into the classroom of primary schools.
05/02/2019	Invited speaker , The Bildung Academy, Amsterdam Giving a masterclass and guiding a discussion session on Creative Cognition for ~30 honors students from the Vrije Universiteit Amsterdam.
26/04/2018	Interview for radio NPO 3fm . Dutch radio station focused on a young audience (25-45 yo) with ~800 000 weekly listeners. Interview about difficulties of finding research participants.

ORGANIZATION

01/09/2016 – 31/12/2018	PhD representative at the Donders Institute, Radboud University Nijmegen Spokesperson for all PhDs, link between directorate and PhD candidates, quarterly organization of scientific and professional meetings for PhDs.
07/12/2017	Donders career event for early career researchers at the Donders Institute. ~150 participants.

SOFTWARE AND TECHNICAL SKILLS

Experimental design	Psychtoolbox (Matlab), PsychoPy (Python, JavaScript), Presentation
Data analysis	R, Matlab, JASP
MRI analysis	SPM, FSL, FreeSurfer, fMRIprep
Version control	Git