

ELINE KUPERS

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SUMMARY STATEMENT

I am interested visual neuroscience, in particular, the first steps of visual processing in the human brain. For example, how is visual information processed at the different stages along visual pathway? How are these processing stages affected by complex cognitive functions like visuospatial attention? I use psychophysics, eye tracking, MRI, EEG and MEG techniques in combination with computational modeling to answer my research questions.

EDUCATION

2015 - present

PhD & MA New York University · Department of Psychology · Cognition & Perception
Encoding models of the human visual system.

2012 - 2015

MSc cum laude University of Amsterdam · Institute of Interdisciplinary Sciences · Brain & Cognitive Sciences
Project 1: Retinotopically global BOLD modulations at transitions during bistable perception with fMRI
Project 2: Stimulus and attentional effects on synchronous and asynchronous MEG signals in human visual cortex
Review: Don't blame the BOLD. Explaining the discrepancy between electrophysiology and fMRI measurements for cognitive processes in primary visual cortex.

2009 - 2012

BSc w/ Honours Utrecht University · Faculty of Social Sciences · Cognitive & Neurobiological Psychology
Cross-modal integration and bi-directionality in sound-color synesthesia
Summer internship: Cortical processing in visual perception: An EEG study of a visual masking task

RESEARCH POSITIONS

2014 - 2015 · Research assistant in the lab of Jonathan Winawer at New York University

TEACHING POSITIONS

Fall 2017 · Teaching assistant Graduate Functional MRI lab, NYU
Fall 2016 · Teaching assistant Undergraduate Perception, NYU
Spring 2015 · Teaching assistant Undergraduate Seminar: From Illusions to Inference, NYU

PUBLICATIONS

A non-invasive, quantitative study of broadband spectral responses in human visual cortex
Kupers, Wang, Amano, Kay, Heeger, Winawer. (2018). PLOS One 13(3): e0193107.

Modeling visual performance differences with polar angle: A computational observer approach
Kupers, Carrasco, Winawer. (2019). PLOS Comp. Bio. 15(5): e1007063.

AWARDS AND FUNDING

May 2019 · Student Senators Councils Conference Travel Fund Summer 2019, NYU
June 2018 · HHMI Stipend for Summer course: Computational Neuroscience Vision, CSHL
Feb 2018 · GSAS Dean's student travel award, 2017-2018, NYU
Nov 2016 · FMRI Pilot token, Protocol Review Committee CBI, NYU
Feb 2016 · GSAS Dean's student travel award, 2015-2016, NYU
Oct 2015 · Student Senators Councils Conference Travel Fund Fall 2015, NYU
Apr 2015 · MacCracken scholarship for doctoral students 2015-2016, NYU
June 2013 · Public prize for best research project poster, ABC Summer School, UvA
Sep 2012 · Best research proposal pitch, in graduate Neurophysiology course, UvA

CONFERENCE PROCEEDINGS

(* equal first author contribution, † equal senior author contribution)

Organization for Human Brain Mapping 2019 (2 Posters) - Rome, Italy.

Edadan*, Kupers*, Benson, Zuiderbaan, Dumoulin†, Winawer†. (June 2019) Extending pRF model from fMRI to MEG: A stimulus-referred forward model to predict MEG measurements.

Kupers, Benson, Winawer. (June 2019) A model-based approach linking MEG signals to neural synchrony in early visual cortex.

Vision Science Society meeting 2019 (Talk) - St. Pete Beach, FL, USA.

Kupers, Benson, Winawer. (May 2019) A model-based approach to link MEG responses to neuronal synchrony in visual cortex.

Cognitive Computational Neuroscience 2018 (Poster) - Philadelphia, PA, USA.

De Hollander*, Kupers*, Brascamp, Knapen. (Sep 2018) A biphasic temporal pattern in pupil size around perceptual switches in binocular rivalry.

Vision Science Society meeting 2018 (Poster) - St. Pete Beach, FL, USA.

Kupers, Carrasco, Winawer. (May 2018) Towards a computational observer model of perceptual performance fields.

Vision Science Society meeting 2017 (Poster) - St. Pete Beach, FL, USA.

Kupers, Mackey, Curtis, Winawer. (May 2017) The topographical relationship between visual field maps in association cortex and brain areas involved in non-visual cognition.

Vision Science Society meeting 2016 (Poster) - St. Pete Beach, FL, USA.

Kupers, Brascamp, Knapen. (May 2016) Spatiotemporal BOLD correlates of switches in bistable perception.

Society for Neuroscience meeting 2015 (Poster) - Chicago, IL, USA.

Winawer, Kupers, Chua, Hermes, Amano. (Oct 2015) Stimulus selectivity of gamma oscillations in human visual cortex measured with magnetoencephalography.

Vision Science Society meeting 2015 (Talk) - St. Pete Beach, FL, USA.

Kupers, Wang, Kay, Heeger, Winawer. (Sep 2015) Broadband spectral responses in visual cortex revealed by a new MEG denoising algorithm.

PROGRAMMING SKILLS

Matlab, Python, bash, Git, FreeSurfer, Adobe Illustrator

LANGUAGES

Dutch (Native Speaker) · English (Fluent) · German (Reading and listening)

SERVICE

- '17-'20 · Mentor for Psychology Master students, GSAS Mentorship Program of NYU
- 17-'19 · President of NYU Cog Collective Student Society of NYU
- '16-'17 · Student representative Cognition & Perception Psychology Department NYU
- '15-'17 · Member of Neuroscience Outreach Group of NYU
- '13-'14 · Board member of Cognito Student Association of Brain & Cognitive Sciences
- '11-'13 · Board member of U-Turn Utrecht Student Gymnastic Society of Utrecht