Dr. David Wisniewski

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Research and Professional Experience

06/2017 – today **FWO [PEGASUS]^2 Marie Skłodowska-Curie Fellow**
Universiteit Gent, Belgium
Research group leader
Prof. Marcel Brass
Research Focus
- Free will beliefs and attitudes
- Interaction of intentional and motivational control processes using computational modelling and multivariate pattern analysis of fMRI data.

Administrative tasks and supervision
- Supervision of bachelor, master and PhD projects
- Development / implementation of data archiving policy for research group
- Organizing visits for international guests

Lecturing
- 'Introduction to Neuroimaging' (Co-lecturer with Prof. Ruth Krebs): Introduction to fMRI and TMS methods for BSc students.
- 'Topics in Experimental Psychology' (Guest-lecturer with Prof. Nico Boehler): Introduction to multivariate fMRI analysis methods for MSc student

05/2016 – 05/2017 **Postdoctoral Research Fellow**
Universiteit Gent, Belgium
Research group leader
Prof. Marcel Brass
Research Focus
- Effects of high-level cognitive processes, such as instructions, onto low-level fear learning mechanisms, using fMRI and psychophysiological measures.

Dr. David Wisniewski

10/2008 – 04/2016 **PhD Fellow**

Bernstein Center for Computational Neuroscience, Berlin, Germany
SFB940 'Volition and Cognitive Control' Technische Universität Dresden, Germany
Berlin School of Mind and Brain, Germany

Thesis Topic

The neural correlates of intentional control: Motivational effects and functional organization, Grade: summa cum laude

Supervisor

Prof. John-Dylan Haynes

Research Focus

- Interaction of motivational and intentional control processes in the brain and the functional architecture of the intentional control network, using multivariate pattern analysis of fMRI data.

Administrative tasks and supervision

- Supervision of student assistants, lab rotations, master and PhD projects
- Organizing visits for international guests

Publications

2021

Wisniewski D, Cracco E, González-García C, Brass M (in principle acceptance). Relating free will beliefs and attitudes. Registered report, *Royal Society Open Science.* [ApprovedProtocol]

Genschow O, Cracco E, Schneider J, Protzko J, **Wisniewski D**, Brass M, Schooler J (2021) Manipulating belief in free will and its downstream consequences: A meta-analysis *PsyarXiv* doi:10.31234/osf.io/quwgr [Preprint]

González-García C, Formica S, **Wisniewski D**, Brass M (2021) Frontoparietal action-oriented codes support novel task set implementation *NeuroImage,* doi:doi.org/10.1016/j.neuroimage.2020.117608 [FullText]

2020

Liu X, Vermeylen L, **Wisniewski D**, Brysbaert M (2020) The contribution of phonological information to visual word recognition: Evidence from Chinese Phonetic Radicals *Cortex* doi:10.1016/j.cortex.2020.09.010 [Abstract]

Vermeylen L, **Wisniewski D**, González-García C, Hoofs V, Notebaert W, Braem S (2020) Shared Neural Representations of Cognitive Conflict and Negative Affect in the Dorsal Anterior Cingulate Cortex, *The Journal of Neuroscience,* doi: 10.1523/JNEUROSCI.1744-20.2020 [Abstract]

Kostandyan M, Park HRP, Bundt C, González-García C, **Wisniewski D**, Krebs RM, Boehler CN (2020) Are all behavioral reward benefits created equally? An EEG-fMRI study *Neuroimage* doi:10.1016/j.neuroimage.2020.116829
[FullText]

Van der Biest M, Cracco E, **Wisniewski D**, Brass M, González-García C (2020) Investigating the effect of trustworthiness on instruction-based reflexivity *Acta Psychologica,* doi:10.1016/j.actpsy.2020.103085
[Abstract]

Botvinick-Nezer R, Holzmeister F, Camerer CF ... **Wisniewski D** ... Nichols TE, Poldrack RA, Schonberg T (2020) Variability in the analysis of a single neuroimaging dataset by many teams, *Nature,* doi:10.1038/s41586-020-2314-9
[Abstract]

Cracco E, González-García C, Hussey I, Braem S, **Wisniewski D** (2020) Cultural pressure and biased responding in free will attitudes *Royal Society Open Science* doi:10.1098/rsos.191824
[FullText]

2019

Wisniewski D, Forstmann B, Brass M (2019) Outcome contingency selectively affects the neural coding of outcomes but not of tasks, *Scientific Reports,* doi:10.1038/s41598-019-55887-0
[FullText] [Data]

Wisniewski D, Deutschländer R, Haynes JD (2019) Free will beliefs are better predicted by dualism than determinism beliefs across different cultures. *PLoS ONE,* doi:10.1371/journal.pone.0221617
[FullText] [Data+Code]

2018

Kruschwitz J, Ludwig V, Waller L, List D, **Wisniewski D**, Wolfensteller U, Goschke T, Walter H (2018) Regulating Craving by Anticipating Positive and Negative Outcomes: A Multivariate Pattern Analysis and Network Connectivity Approach, *Frontiers in Behavioral Neuroscience*, doi: 10.3389/fnbeh.2018.00297
[FullText]

Wisniewski D (2018) Context-Dependence and Context-Invariance in the Neural Coding of Intentional Action, *Frontiers in Psychology*, doi.org/10.3389/fpsyg.2018.02310
[FullText]

Kruschwitz J, Waller L, List D, **Wisniewski D**, Ludwig V, Korb F, Wolfensteller U, Goschke T, Walter H (2018) Anticipating the good and the bad: A study on the neural correlates of bivalent emotion anticipation and their malleability via attentional deployment, *NeuroImage*, 183: 553-564
[Abstract]

Langerock N, **Wisniewski D**, Brass M, Vergauwe E (2018) An examination of refreshing in between-category sequences, *Annals of the New York Academy of Sciences*, doi:10.1111/nyas.1370
[Abstract]

2017

Loose L*, **Wisniewski D***, Goschke T, Haynes JD. (2017) Switch independent task representations in frontal and parietal cortex, *Journal of Neuroscience*, 37: 8033-8042
Preprint available here: *bioRxiv* doi:10.1101/138230
[Abstract]

2016

Wisniewski D, Goschke T, Haynes JD. (2016) Similar Coding of Freely Chosen and Externally Cued Intentions in a Fronto-Parietal Network. *NeuroImage*, 134: 450-58
[Abstract]

Wisniewski D. (2016) The neural correlates of intentional control: Motivational effects and functional organization. Doctoral thesis at Humboldt-Universität zu Berlin, Germany
[Full Text]

2015

Wisniewski D, Reverberi D, Momennejad I, Kahnt T, Haynes JD. (2015) The Role of the Parietal Cortex in the Representation of Task–Reward Associations. *The Journal of Neuroscience,* 35: 12355–65
[Abstract]

Wisniewski D*, Reverberi C*, Tusche A, Haynes JD. (2015) The Neural Representation of Voluntary Task-Set Selection in Dynamic Environments. *Cerebral Cortex*, 25: 4715-26
[Abstract]

2013

Tusche A, Kahnt T, **Wisniewski D**, Haynes JD. (2013) Automatic Processing of Political Preferences in the Human Brain. *NeuroImage,* 72: 174–82
[Abstract]

*=these authors contributed equally

Workshops

2018 Multivariate decoding workshop at the Department of Experimental Psychology of Ghent University (organization and teaching)

Service to the Field

Ad-hoc reviewer for Acta Psychologica, Cerebral Cortex, Cognitive Affective & Behavioral Neuroscience, Consciousness and Cognition, NeuroImage, Neuropsychologia, Neuroscience of Consciousness, The Journal of Neuroscience, PLOS Computational Biology

Grants

2021 – 2024	Postdoctoral Research Grant (200.000€)
2019 – 2021	Research Foundation Flanders (FWO) Research Grant (39.630€)
2017 – 2021	Incoming [PEGASUS]^2 Marie-Skłodowska-Curie Grant of the Research Foundation – Flanders and the European Union's Horizon 2020 research and innovation program (160.000€).

Education

10/2002 – 10/2008 **Student**
Humboldt-Universität zu Berlin, Germany
Study Focus
Diploma in Psychology (equivalent to MSc), Grade: 1.3 (excellent)
Thesis topic: Cognitive Control in Eriksen Flanker Tasks, investigated using EEG and dipole source localization

09/2006 – 03/2007 **Student**
University of Glasgow, UK (ERASMUS exchange)
Study Focus
EEG data analysis using dipole source localization

09/2007 – 06/2008 **Student Assistant**
Max Planck Institute for Human Development, Berlin
Center for Adaptive Behavior and Cognition
Prof. Gigerenzer, Dr. Scheibehenne, Dr. Mata
Work Focus
Behavioral experimental design and programming

12/2004 – 12/2007 **Student Assistant**
Department of Psychology, Humboldt-Universität zu Berlin
Biological Psychology Group
Prof. Sommer and Prof. Abdel-Rahman
Work Focus
EEG experimental design, programming, data acquisition and analysis

Scholarships and Awards

ERASMUS exchange scholarship
Max Planck PhD scholarship
Mind and Brain PhD scholarship
Poster Prize of the Berlin School of Mind and Brain, 2010

Public Outreach

Science Day, Universiteit Gent, 2020 [link]
Falling Walls Lab, Brussels, 2017 [link]
Science is Wonder-ful! Public science event organized by the Marie-Skłodowska-Curie Actions of the European Commission, 2017 [link]

Conference Session Chairs

2018 Nanosymposium Human Cognition and Behavior: Human Learning: Feedback, Reinforcement and Reward [link]

Conference Talks

2021 Adaptive coding of task-relevant information in the multiple demand network: a representational geometry approach, European Neuroscience Conference by Doctoral Students 2021, Online [link]
2021 Context-dependence of task representations in fronto-parietal cortex, Psychologie und Gehirn 2021, Tübingen, Germany [link]
2020 Towards a deeper understanding of lay beliefs in free will, Neuroscience, Law & Psychology, Istambul, Turkey
2018 Outcome contingency modulates reward coding but not task coding in the brain, Neuroscience 2018, San Diego, USA [link]
2017 Neural task representations during voluntary task switching, ESCOP, Potsdam [link]
2016 Using MVPA to identify the functional organization of the cognitive control network, NeuroCog2016, Leuven, Belgium [link]
2012 Predicting decisions in a dynamically changing environment from activation patterns in the dorso-medial prefrontal cortex, *2nd Einstein Fellowship Symposium on 'Decision-making'*, Berlin, Germany [link]

Conference Poster Presentations

2019 7th International Symposium on Motivation and Cognitive Control, Berlin, Germany
2017 Instruction-based and experience-dependent fear memories during fear reversal, 13th International conference for cognitive neuroscience, Amsterdam, Netherlands
2014 The role of parietal cortex in the representation of task-reward-associations, Annual Meeting of the Society for Neuroscience, Washington DC, USA
2014 The neural basis of task-reward associations, Neuronus IBRO & IRUN Neuroscience Forum, Krakow, Poland
2013 The neural basis of task-reward associations, Annual Meeting of the Organization for Human Brain Mapping, Seattle, USA
2011 Self-regulation of tasks under dynamic conditions, Interdisciplinary College on 'Autonomy, Decisions, and Free Will', Günne, Germany
2011 Self-regulation of tasks under dynamic conditions, Cognitive Neuroscience Society Meeting, San Francisco, USA
2010 The neural correlates of self-regulated behavior, Annual Meeting of the Society for Neuroscience, San Diego, USA

Invited Talks

2020	Flexibility vs stability in the neural coding of tasks, School of Psychology, Prof. Zhang, *Cardiff University*
2019	Sharing and reusing code for experimental cognitive neuroscience, *Ghent University*
2015	The functional organization of the intentional control network, Department of Experimental Psychology, Prof. Brass, *Ghent University*
2014	The neural basis of intentional and motivational control of behavior, Princeton Neuroscience Institute, Prof. Botvinick and Prof. Cohen, *Princeton University*, NJ, USA
2014	The role of parietal cortex in the representation of task-reward-associations, Junior Research Group 'Decision-making in obesity: neurobiology, behavior & plasticity', Dr. Horstmann, *Max Planck Institute for Human Cognitive and Brain Sciences*, Leipzig
2013	The role of parietal cortex in the representation of task-reward-associations, Biological Psychology and Cognitive Neuroscience, Prof. Heekeren, *Freie Universität*, Berlin
2013	The neural code of voluntary task-set selection in dynamic environments, Center for Adaptive Rationality, Dr. Mata, *Max Planck Institute for Human Development*, Berlin
2012	The neural code of voluntary task-set selection in dynamic environments, Department of Psychology, Prof. Leuthold, *Universität Tübingen*
2012	The neural code of voluntary task-set selection in dynamic environments, Department of Experimental Psychology, Prof. Brass, *Ghent University*
2011	The neural code of voluntary task-set selection in dynamic environments, Graduate School of Systemic Neurosciences, *Ludwig-Maximilians-Universität*, München

Key Skills

Design, conduction, analysis of fMRI and behavioral experiments
Univariate and multivariate pattern analysis of fMRI data
Computational modelling of behavioral data
Coding in R, Matlab, and Python
Project management