

Birte U. Forstmann

Curriculum Vitae, 2018

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Integrative model-based cognitive
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Research Statement

My general research goal is to understand the brain mechanisms that allow people to adapt quickly to changes in their environment. My work combines mathematical modeling with functional magnetic resonance imaging (fMRI), diffusion weighted imaging (DWI), ultra-high resolution 7T MRI, electroencephalography (EEG), and postmortem work. My general research strategy capitalizes on individual differences in psychological processes involved in decision-making and interference control. Process models and descriptive models quantify the process of interest for each individual separately, and structural and functional brain imaging techniques subsequently relate inter-individual variation in psychological processes to inter-individual variation in the neural substrate.

Employment History

- 2018–current Vici-laureate. Personal grant awarded by the Netherlands Organisation for Scientific Research (NWO).
- 2017–current Head of the 'Integrative model-based cognitive neuroscience' (IMCN) research unit at the University of Amsterdam, the Netherlands.
- 2014–current Professor for Neuroscientific Testing of Psychological Models at Leiden University, the Netherlands.
- 2013–current Full professor of Cognitive Neuroscience at the University of Amsterdam, the Netherlands.
- 2013–2018 Tenured research fellow on a personal ERC starter grant, awarded by the European Research Council. My main interests are the cognitive neurosciences, mathematical modeling, and post-mortem anatomy.
- 2012–2018 Tenured research fellow on a personal Vidi grant awarded by the Netherlands Organisation for Scientific Research (NWO).
- 2016 Visiting professor at the 'Faculte des Sciences Psychologiques et de l'education' at the Universite de Libre de Bruxelles, Belgium.
- 2008–2012 Tenured research fellow on a personal Veni grant, awarded by the Netherlands Organisation for Scientific Research (NWO) and head of the "Quantitative cognitive neuroscience lab" at the University of Amsterdam.
- 2006–2008 Postdoctoral fellow in the Amsterdam center for the study of adaptive control in brain and behavior, University of Amsterdam, Amsterdam, the Netherlands.
- 2002–2006 Graduate student with Yves D. von Cramon at the Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany.

Service to the Field

2017-current	Guest Editor of the special section of NeuroImage on Registered Reports.
2017-current	Advisory council member of the International Association for the Study of Attention and Performance.
2016-current	Senior Editor of the European Journal of Neuroscience.
2016-current	Referee invited by the Weston Brain Institute, Canada.
2016-current	Referee invited by Parkinson's UK.
2015-current	Member of the advisory committee of the 1 st International conference for Cognitive Computational Neuroscience (CCN).
2015-2017	Organizer of the 13 th International conference for cognitive neuroscience (ICON) in Amsterdam (5 th -9 th of August 2017).
2015-current	Member of the Young Academy of Europe (YAE).
2015-current	Consulting editor of the journal <i>Cognitive, Affective, and Behavioral Neuroscience</i> (CABN).
2015-current	Referee invited by the European Research Council (ERC).
2015-current	Referee invited by the Australian Research Council (ARC).
2014-current	Organizer of the summer school "Model-based cognitive neuroscience" at the University of Amsterdam, the Netherlands.
2011-current	Referee invited by the German Research Foundation (DFG) for the assessment of collaborative research centres.
2008-current	Referee invited by the Netherlands Organisation for Scientific Research (NWO).
2008-current	Referee invited by the Research Foundation Flanders (FWO).
2004-current	Ad-hoc reviewer for Biological Psychiatry, Biological Psychology, Brain, Cerebral Cortex, Cognitive, Affective, & Behavioral Neuroscience, Current Biology, eLife, Frontiers, Human Brain Mapping, Journal of Cognitive Neuroscience, Journal of European Neuroscience, Journal of Neurophysiology, Journal of Neuroscience, Magnetic Resonance in Medicine, Nature, Nature Communications, Nature Neuroscience, NeuroImage, Neuron, Neuropsychologia, Psychological Research, Psychological Science, Quarterly Journal of Experimental Psychology.
2015	Chair of the symposium "Model-based neuroscience of strategic decision making" at the International Convention of Psychological Science (ICPS) in Amsterdam, the Netherlands.
2014	Referee invited by the Leibniz Research Centre.
2014	Referee invited by the National Science Foundation (NSF).
2014	Chair of the symposium 'Neuroanatomy' at the annual OHBM meeting in Hamburg, Germany.
2013	Referee invited by the W. Garfield Weston Foundation.
2013	Referee for the MRC Cognition and Brain Sciences Unit, Cambridge.
2013	Referee invited by the Wellcome Trust, London.
2012	Chair of the mini-symposium "The human subthalamic nucleus in health and disease: Insights from translational neurosciences" (together with Bogdan Draganski) at the annual meeting of the Society for Neuroscience (SfN) in New Orleans, USA.
2012	Referee invited by the Parkinson's Disease Society of the United Kingdom.
2012	Referee invited by the Swiss National Science Foundation (SNF).
2012	Together with Eric-Jan Wagenmakers, part of the organizing committee for the Academy Colloquium "New Insights from Model-Based Cognitive Neuroscience" funded by the Royal Netherlands Academy of Arts and Sciences (KNAW). The colloquium took place in Amsterdam, May 2012.
2011	Editor for the special topic "The role of basal ganglia in decision-making" in Frontiers in Decision Neuroscience.
2010	Chair of the mini-symposium "Model-based decision neuroscience" (together with Hauke Heekeren) at the annual meeting of the Society for Neuroscience (SfN) in San Diego, USA.
2010	Referee invited by the Biotechnology and Biological Science Research Council (BB-SRC).

Grants

2018	The project "ATLAS: Atlas for deep brain stimulation" was awarded an 18 months e150,000 Proof of concept (PoC) grant from the European Research Council (ERC).
2018	The project "The brain at depth: A model-based cognitive neuroscience approach to the human subcortex" was awarded a five-year e1,500,000

"Vici" grant from the Netherlands Organisation for Scientific Research (NWO).

- 2017 NWO Open Access Conference Session grant e2500 for the International Conference of Cognitive Neuroscience (ICON) XIII to be held in Amsterdam in 2017.
- 2017 William K. and Katherine W. Estes Fund \$15,000 for the 4th summer school "Model-based cognitive neuroscience" summer school to be held in Amsterdam in 2017.
- 2016 ABC Visiting Professor (VIP) Grant e7500 for VIP Prof. Mark Steyvers to stay in Amsterdam in 2017 and 2018.
- 2016 ABC Talent Grant e100,000 for a one-year project "Mapping cortico-subcortical networks with UHF-MRI".
- 2016 Partner investigator on the Australian Research Council AUD\$492,000 three-year project "Modelling trajectories of cognitive control in adolescents and young adults" at the University of Newcastle (chief investigators: Frini Karayanidis, Mark Steyvers, Sharna Jamadar, Guy Hawkins, Roshel Lenroot, Patricia Michie). Project duration: 2017-2020.
- 2015 The project "Atlasing the human subcortex" was awarded a four-year e850,000 grant from STW-NWO.
- 2015 The summer school "Model-based cognitive neuroscience" was awarded e14,600 grant from the Volkswagenstiftung together with Leendert v. Maanen (UvA), Jane Neumann (MPI Leipzig), Guy Hawkins (UvA), and Roger Ratcliff (Ohio State University).
- 2014 The project "Detailed neuroanatomical insight in the human subthalamic nucleus in Parkinson's disease" was awarded a two-year e142,000 grant from the Stichting Internationaal Parkinson Fonds (the Dutch Parkinson Foundation) together with Anneke Alkemade (UvA).
- 2014 The project "Ultra-high resolution 7T fMRI of the midbrain" was awarded a one-year e35,000 grant from the Amsterdam Center for Brain & Cognition.
- 2013 The project "Subdivisions of the Subthalamic Nucleus" was awarded a two-year e35,000 grant from the Hersenstichting Nederland (the Dutch Brain Foundation) together with Anneke Alkemade (UvA).
- 2012 The project "Speeded Decision-Making in the Basal Ganglia: An Integrative Model-Based Approach" was awarded a five-year e1,500,000 Starting Grant from the European Research Council.
- 2012 The project "When the Brain Takes a Break: A Model-Based Cognitive Neuroscience Account of Task-Unrelated Thoughts" was awarded a five-year e800,000 "Vidi" grant from the Netherlands Organisation for Scientific Research (NWO).
- 2012 Aspasia grant e100,000 from the Netherlands Organisation for Scientific Research (NWO).
- 2012 Inaugural recipient of the Newcastle Psychology Research Visitor Fellowship, AUD\$5,000.
- 2011 Partner investigator on the Australian Research Council AUD\$134,000 three-year project "Rapid Decisions: From Neuroscience to Complex Cognitions" at the University of Newcastle (chief investigators: Scott Brown, Ami Eidels, and Andrew Heath-cote). Project duration: 2012-2014.
- 2011 Partner investigator on the Australian Research Council AUD\$387,000 three-year project "Cognitive Flexibility from Adolescence to Senescence: Variability Associated with Cognitive Strategy and Brain Connectivity" at the University of Newcastle (chief investigators: Frini Karayanidis, Rhoshel Lenroot, Mark Parsons, and Patricia Michie). Project duration: 2012-2014.
- 2011 The e23,000 Academy Colloquium proposal "New Insights from Model-Based Cognitive Neuroscience" was funded by the Royal Netherlands Academy of Arts and Sciences (KNAW). Fellow applicant is Eric-Jan Wagenmakers.
- 2011 The "MaGW open competition" PhD project "A dynamic and formal account of what people do before and after they make an error" was awarded a four-year e208,193 grant from the Netherlands Organisation for Scientific Research (NWO). Fellow applicants are Eric-Jan Wagenmakers (UvA), Sander Nieuwenhuis (Leiden University), and Han van der Maas (UvA).

- 2010 The "ALW open competition" postdoc project "The neural basis of decision-making with multiple choice alternatives" was awarded a three-year e228,921 grant from the Netherlands Organisation for Scientific Research (NWO). Fellow applicants are Eric-Jan Wagenmakers (UvA), Sander Nieuwenhuis (Leiden University), Rafal Bogacz (University of Bristol), Scott Brown (University of Newcastle), John Serences (UCSD), and Han van der Maas (UvA).
- 2010 A e6000 EPOS grant for the project "Proactive and reactive top-down control in ancestral graph networks of response inhibition". Fellow applicant is Lorenza Colzato (Leiden University).
- 2009 One-year PhD stipend for Max Keuken from the Max-Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany.
- 2009 The project "Decision-making and adaptive control over impulsive actions" was awarded a e580,000 focal point ("Zwaartepunt") grant from the University of Amsterdam. Fellow applicants include Richard Ridderinkhof (UvA), Frans van Winden (UvA), Damiaan Denys (UvA), and Eric-Jan Wagenmakers (UvA).
- 2009 The "ALW open competition" PhD project "The anatomical and neurochemical foundations of decision-making under time pressure", was awarded a four-year e218,000 grant from the Netherlands Organisation for Scientific Research (NWO). Fellow applicants are Roshan Cools (Donders Institute), Rich Ivry (UC Berkeley), Richard Ridderinkhof (UvA), Wery van der Wildenberg (UvA), and Eric-Jan Wagenmakers (UvA).
- 2008 The project "Structural and neural correlates of individual differences in inhibition across the adult lifespan" was awarded a three-year e208,000 "Veni" grant from the Netherlands Organisation for Scientific Research (NWO).
- 2008 The project "Human cognition and the basal ganglia: Where response selection and inhibition meet" was awarded a three-year e10,000 "van Gogh" grant from the Netherlands Organisation for Scientific Research (NWO). Fellow applicants together with Boris Burle (CNRS) and Wery van den Wildenberg (UvA).
- 2007 The project "Diffusion Processes in the Brain" was awarded a one-year e28,220 "pilot" grant from the Netherlands Organisation for Scientific Research (NWO). Fellow applicants are Eric-Jan Wagenmakers (UvA), Scott Brown (University of Newcastle), and Jane Neumann (MPI Leipzig).

Books

- 2018 Turner, B. M., Forstmann, B. U., & Steyvers, M. (2018). Simultaneous modeling of neural and behavioral data. Springer.
- 2015 Forstmann, B. U. & Wagenmakers, E.-J. (Eds.) (2015). An Introduction to Model-Based Cognitive Neuroscience. Springer.

Articles

- In press Hawkins, G. E., Mittner, M., Forstmann, B. U., & Heathcote, A. (in press). On the efficiency of neurally-informed cognitive models to identify latent cognitive states. *Journal of Mathematical Psychology*.
- 2018 Keuken, M. C., Isaacs, B. R., Trampel, R., van der Zwaag, W., & Forstmann, B. U. (2018). Visualizing the human subcortex using ultra-high field magnetic resonance imaging. *Brain Topography*, 31, 513-545.
- 2018 Sebastian, A., Forstmann, B. U., & Matzke, D. (2018). Towards a model-based cognitive neuroscience of stopping – a neuroimaging perspective. *Neuroscience and Biobehavioral Reviews*, 90, 130-136.
- 2017 Turner, B. M., Miletic, S., & Forstmann, B. U. (2017). Outlook on Deep Neural Networks in Computational Cognitive Neuroscience. *NeuroImage*, 31102-3.
- 2017 Tona, K. D., Keuken, M. C., de Rover, M., Lakke, E., Forstmann, B. U., Nieuwenhuis, S., & van Osch, M. J. P. (2017). In vivo visualization of the locus coeruleus in humans: quantifying the test-retest reliability. *Brain Structure and Function*, 1-15.
- 2017 Forstmann, B. U., Isaacs, B., & Temel, Y. (2017). Ultra-High Field MRI guided Deep Brain Stimulation. *Trends in Biotechnology*, 35, 904-907.
- 2017 Miletic, S., Turner, B. M., Forstmann, B. U., & van Maanen, L. (2017). Parameter recovery for the leaky competing accumulator model. *Journal of Mathematical Psychology*, 76, 25-50.
- 2017 Alkemade, A., de Hollander, G., Keuken, M. C., Schaefer, A., Ott, D., Schwarz, J.,

- Weise, D., Kotz, S. A., & Forstmann, B. U. (2017). Comparison of T2* and QSM contrasts in Parkinson's disease to visualize the STN with MRI. *PLoS ONE*, 12(4):e0176130.
- 2017 de Hollander, G., Keuken, M. C., van der Zwaag, W., Forstmann, B. U., & Trampel, R. (2017). Comparing Functional MRI Protocols for Small, Iron-Rich Basal Ganglia Nuclei Such as the Subthalamic Nucleus at 7 T and 3 T. *Human Brain Mapping*, 38, 3226-3248.
- 2017 Salzer, Y., de Hollander, G., & Forstmann, B. U. (2017). Sensory neural pathways revisited to unravel the temporal dynamics of the Simon effect: A model-based cognitive neuroscience approach. *Neuroscience & Biobehavioral Reviews*, 77, 48-57.
- 2017 Forstmann, B. U., & Alkemade, J. (2017). The Neuroanatomy and Neurochemistry of Response Inhibition. In T. Egner (Ed.). *The Wiley Handbook of Cognitive Control*. John Wiley & Sons, 274-291.
- 2017 Turner, B. M., Forstmann, B. U., Love, B. C., Palmeri, T. J., & van Maanen, L. (2017). Approaches of Analysis in Model-based Cognitive Neuroscience. *Journal of Mathematical Psychology*, 76, 65-79.
- 2017 Keuken, M. C., Bazin, P.-L., Beekhuizen, S., Himmer, L., Kandola, A., Lafeber, J. J., Prochazkova, L., Trutti, A., Schaefer, A., Turner, R., & Forstmann, B. U. (2017). Effects of aging on T1, T2*, and QSM MRI values in the subcortex. *Brain Structure & Function*, 222, 2487-2505.
- 2017 Boekel, W., Forstmann, B. U. & Keuken, M. C. (2017). A test-retest reliability analysis of diffusion measures of white matter tracts relevant for cognitive control. *Psychophysiology*, 54, 24-33.
- 2017 Forstmann, B. U., de Hollander, G., van Maanen, L., Alkemade, A., & Keuken, M. C. (2017). Towards a mechanistic understanding of the human subcortex. *Nature Reviews Neuroscience*, 18, 57-65.
- 2016 Chambers, C. D. Forstmann, B., & Pruszynski, J. (2016). Registered Reports at the European Journal of Neuroscience: Consolidating and extending peer-reviewed study pre-registration. *European Journal of Neuroscience*, doi: 10.1111/ejn.13519.
- 2016 Ly, A., Boehm, U., Heathcote, A., Turner, B. M., Forstmann, B. U., Marsman, M., & Matzke, D. (2016). A flexible and efficient hierarchical Bayesian approach to the exploration of individual differences in cognitive-model-based neuroscience. In *Computational Models of Brain and Behavior*. John Wiley and Sons.
- 2016 Keuken, M. C., Schaefer, A., & Forstmann, B. U. (2016). Can We Rely on Susceptibility-Weighted Imaging (SWI) for Subthalamic Nucleus Identification in Deep Brain Stimulation Surgery? *Neurosurgery*, 79, e945-e946.
- 2016 Winkel, J., Hawkins, G. E., Ivry, R. B., Brown, S. D., Cools, R., & Forstmann, B. U. (2016). Focal striatum lesions impair cautiousness in humans. *Cortex*, 85, 37-45.
- 2016 Forstmann, B. U., Keuken, M. C., & Alkemade, A. (2016). The Next Step for Imaging the Subthalamic Nucleus. *Brain*, e69.
- 2016 Aron, A., Herz, D., Brown, P., Forstmann, B. U., & Zaghoul, K. (2016). Fronto-Subthalamic Circuits for Control of Action and Cognition. *The Journal of Neuroscience*, 36, 11489-11495.
- 2016 de Hollander, G., Forstmann, B. U., & Brown, S. D. (2016). Different ways of linking behavioral and neural data via computational cognitive models. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 1, 101-109.
- 2016 Forstmann, B. U., & Alkemade, A. (2016). The Neuroanatomy and Neurochemistry of Response Inhibition. *Wiley Handbook of Cognitive Control*. T Egner (Ed), pp 275-292.
- 2016 van Maanen, L., Fontanesi, L., Hawkins, G. E., & Forstmann, B. U. (2016). Striatal activation reflects urgency in perceptual decision-making. *NeuroImage*, 139, 294-303.
- 2016 Visser, E., Keuken, M. C., Forstmann, B. U., & Jenkinson, M. (2016). Automated segmentation of the substantia nigra, subthalamic nucleus and red nucleus in 7T data at young and old age. *NeuroImage*, 139, 324-336.
- 2016 Mittner, M., Hawkins, G. E., Boekel, W., & Forstmann, B. U. (2016). A neural model of mind wandering. *Trends in Cognitive Sciences*, 20, 570-578.
- 2016 de Hollander, G., Labruna, L., Sellaro, R., Trutti, A., Colzato, L., Ratcliff, R., Ivry, R., & Forstmann, B. U. (2016). Transcranial direct current stimulation does not influence the speed-accuracy tradeoff in perceptual decision-making: Evidence from three independent replication studies. *Journal of Cognitive Neuroscience*, 7, 1-12.
- 2016 de Hollander, G. (2016). Combining computational models of cognition and neural data to learn about mixed task strategies. *The Journal of Neuroscience*, 16, 1-3.
- 2016 Boekel, W., Forstmann, B. U., & Wagenmakers, E.-J. (2016). Challenges in replicating brain-behavior correlations: Rejoinder to Kanai (2015) and Muhlert and Ridgway (2015). *Cortex*, 74, 348-352.

- 2016 Forstmann, B. U., Ratcliff, R., & E.-J. Wagenmakers (2016). Sequential Sampling Models in Cognitive Neuroscience: Advantages, Applications, and Extensions. *Annual Review of Psychology*, *67*, 641-666.
- 2016 Karayanidis, F., Keuken, M. C., Wong, A. S., Rennie, J., L., de Hollander, G., Cooper, P. S., Fulham, W. R., Lenroot, R. Parsons, M. W., Philips, N., Mitchie, P. T., & Forstmann, B. U. (2016). The Age-ility Project (Phase 1): Structural and functional imaging and electrophysiological data repository. *NeuroImage*, *124*, 1137-1142.
- 2015 Visser, E., Keuken, M. C., Douaud, G., Gaura, V., Bachoud-Levi, A.-C., Remy, P., Forstmann, B. U., & Jenkinson, M. (2015). Automatic segmentation of the striatum and globus pallidus using MIST: multimodal image segmentation tool. *NeuroImage*, *125*, 479-497.
- 2015 Boonstra, E., De Kleijn, R., Colzato, L. S., Alkemade, A., Forstmann, B. U., & Nieuwenhuis, S. (2015). Neurotransmitters as food supplements: the effects of GABA on brain and behavior. *Frontiers in Psychology*, *6*:1520.
- 2015 Hawkins, G. E., Mittner, M., Boekel, W., Heathcote, A., & Forstmann, B. U. (2015). Toward a model-based cognitive neuroscience of mind wandering. *Neuroscience*, *310*, 290-305.
- 2015 Keuken, M. C., van Maanen, L., Bogacz, R., Schaefer, A., Neumann, J., Turner, R., & Forstmann, B. U. (2015). The subthalamic nucleus during decision-making with multiple alternatives. *Human Brain Mapping*, *36*, 4041-4052.
- 2015 Alkemade, A., Schnitzler, A., & Forstmann, B. U. (2015). Topographic organization of the human and non-human primate subthalamic nucleus. *Brain Structure and Function*, *220*, 3075-3086.
- 2015 de Hollander, G., Keuken, M. C., & Forstmann, B. U. (2015). The subcortical cocktail problem: mixed signals from the subthalamic nucleus and substantia nigra. *PLoS ONE*, *1*:18.
- 2015 van Maanen, L., Forstmann, B. U., Keuken, M. C., Wagenmakers, E.-J., & Heathcote, A. (2015). The impact of MRI scanner environment on perceptual decision making. *Behavior Research Methods*, 1-17.
- 2015 Keuken, M. C., & Forstmann, B. U. (2015). A probabilistic atlas of the basal ganglia using 7T MRI. *Data in Brief*, *4*, 577-582.
- 2015 Boekel, W., Wagenmakers, E.-J., Belay, L., Verhagen, A. J., Brown, S. D., & Forstmann, B. U. (2015). A purely confirmatory replication study of structural brain-behavior correlations. *Cortex*, *66*, 115-133.
- 2015 Forstmann, B. U., Keuken, M. C. & Alkemade, A. (2015). An introduction to human brain anatomy. In B. U. Forstmann, & E.-J. Wagenmakers (Eds). *An introduction to Model-Based Cognitive Neuroscience*. Springer: New York.
- 2015 Weiss, M., Alkemade, A., Keuken, M. C., Mueller-Axt, C., Geyer, S., Turner, R., & Forstmann, B. U. (2015). Spatial normalization of ultra-high resolution 7 Tesla Magnetic Resonance Imaging data of the postmortem human subthalamic nucleus - a multi-stage approach. *Brain Structure and Function*, *220*, 1695-1703.
- 2015 Hawkins, G., Forstmann, B. U., Wagenmakers, E.-J., Ratcliff, R., & Brown, S. D. (2015). Revisiting the Evidence of Collapsing Boundaries and Urgency Signals in Perceptual Decision-Making. *The Journal of Neuroscience*, *35*, 2476-2484.
- 2015 Turner, B. M., van Maanen, L., & Forstmann, B. U. (2015). Combining Cognitive Abstractions with Neurophysiology: The Neural Drift Diffusion Model. *Psychological Review*, *122*, 312-336.
- 2015 van Maanen, L., Turner, B. M., & Forstmann, B. U. (2015). From model-based decision-making to perceptual interference control. *Current Opinion in Behavioral Sciences*, *1*, 72-77.
- 2014 de Hollander, G., Wagenmakers, E.-J., Waldorp, L., & Forstmann, B. U. (2014). An antidote to the imager's fallacy, or how to identify brain areas that are in limbo. *PLoS ONE*, *9*:e115700.
- 2014 Winkel, J., Keuken, M. C., van Maanen, L., Wagenmakers, E.-J., & Forstmann, B. U. (2014). Early evidence affects later decisions: Why evidence accumulation is required to explain reaction time data. *Psychonomic Bulletin & Review*, *21*, 777-784.
- 2014 Mittner, M., Boekel, W., Tucker, A., Turner, B. M., Heathcote, A., & Forstmann, B. U. (2014). When the brain takes a break: A model-based analysis of mind wandering. *The Journal of Neuroscience*, *34*, 16286-16295.
- 2014 Forstmann, B. U., Keuken, M. C., Schaefer, A., Bazin, P.-L., Alkemade, A., & Turner, R. (2014). Multi-modal ultra-high resolution structural 7-Tesla MRI data repository. *Scientific Data*, *1*:140050.
- 2014 Mulder, M., van Maanen, L., & Forstmann, B. U. (2014). Perceptual decision neurosciences - A model-based review. *Neuroscience*, *277*, 872-88.

- 2014 van Ravenzwaaij, D., Boekel, W., Forstmann, B. U., Ratcliff, R., & Wagenmakers, E.-J. (2014). Action Video Games Do No Improve the Speed of Information Processing in Simple Perceptual Tasks. *Journal of Experimental Psychology: General*, 143, 1794-805.
- 2014 Keuken, M. C., Mueller-Axt, C., Langner, R., Eickhoff, S. B., Forstmann, B. U., & Neumann, J. (2014). Brain networks of perceptual decision-making: An fMRI ALE meta-analysis. *Frontiers in Human Neuroscience*, 8:44.
- 2014 Alkemade, A., & Forstmann, B. U. (2014). Do we need to revise the tripartite subdivision hypothesis of the human subthalamic nucleus (STN)? *NeuroImage*, 95, 326-329.
- 2014 Boehm, U., van Maanen, L., Forstmann, B. U., & van Rijn, H. (2014). Trial-by-trial fluctuations in CNV amplitude reflect anticipatory adjustments of response caution. *NeuroImage*, 96, 95-105.
- 2014 de Hollander, G., Keuken, M. C., Bazin, P.-L., Weiss, M., Neumann, J., Reimann, K., Waehnert, K., Turner, R., Forstmann, B. U., & Schaefer, A. (2014). A gradual increase of iron towards the medial-inferior tip of the Subthalamic Nucleus. *Human Brain Mapping*, 35, 4440-4449.
- 2014 Keuken, M. C., Bazin, P.-L., Crown, L., Hootsmanns, J., Laufer, A., Mueller-Axt, C., Sier, R., van der Putten, E. J., Schaefer, A., Turner, R., & Forstmann, B. U. (2014). Quantifying Inter-Individual Anatomical Variability in the Subcortex using 7T Structural MRI. *NeuroImage*, 94, 40-46.
- 2014 Mulder, M J., Boekel, W., Ratcliff, R., & Forstmann, B. U. (2014). Cortico-subthalamic connection predicts sensitivity to reward in perceptual decision-making. *Brain Structure and Function*, 219, 1239-1249.
- 2014 Wagenmakers, E.-J., & Forstmann, B. U. (2014). Rewarding high-power replication research. *Cortex*, 51, 105-106.
- 2013 Mulder, M J., Keuken, M. C., van Maanen, L., Boekel, W., Forstmann, B. U., & Wagenmakers, E.-J., (2013). The speed and accuracy of a perceptual decision in a random-tones pitch task. *Attention, Perception & Psychophysics*, 75, 1048-1058.
- 2013 Alkemade, A., Keuken, M. C., & Forstmann, B. U. (2013). A perspective on terra incognita: uncovering the neuroanatomy of the human subcortex. *Frontiers in Neuroanatomy*, 7:40.
- 2013 Keuken, M. C., Bazin, P.-L., Schaefer, A., Neumann, J., Turner, R., & Forstmann, B.U. (2013). Ultra-high 7T MRI of structural age-related changes of the subthalamic nucleus. *The Journal of Neuroscience*, 33, 4896-4900.
- 2013 Turner, B. M., Forstmann, B. U., Wagenmakers, E.-J., Brown, S., Sederberg, S. B., & Steyvers, M. (2013). A Bayesian framework for simultaneously modeling neural and behavioral data. *NeuroImage*, 72, 193-206.
- 2013 Dutilh, G., Forstmann, B. U., Vandekerckhove, J. & Wagenmakers, E.-J. (2013). A diffusion model account of age differences in posterror slowing. *Psychology and Aging*, 28, 64-76.
- 2012 Schäfer, A., Forstmann, B. U., Neumann, J., Wharton, S., Mietke, A., Bowtell, R., & Turner, R. (2012). Direct visualization of the subthalamic nucleus and its iron distribution using high-resolution susceptibility mapping. *Human Brain Mapping*, 33, 2831-2842.
- 2012 Winkel, J., Wijnen, J. Danielmeier, C., Groen, I., Derrfuss, J., Ridderinkhof, K. R., & Forstmann, B. U. (2012). Observed and self-experienced conflict induce similar behavioral and neural adaptation. *Social Neuroscience*, 7, 385-397.
- 2012 Winkel, J., van Maanen, L., Ratcliff, R., van der Schaaf, M. E., van Schouwenburg, M. R., Cools, R., & Forstmann, B. U. (2012). Bromocriptine does not alter the speed-accuracy tradeoff. *Frontiers in Decision Neuroscience*, 6:126.
- 2012 Jahfari, S., Verbruggen, F., Frank, M. J., Waldorp, L., Colzato, L., Ridderinkhof, K.R., & Forstmann, B. U. (2012). How preparation changes the need for top-down control of the basal ganglia when inhibiting premature responses. *The Journal of Neuroscience*, 32, 10870-10878.
- 2012 Dutilh, G., van Ravenzwaaij, D., Nieuwenhuis, S., van der Maas, H. L. J., Forstmann, B. U., & Wagenmakers, E.-J. (2012). How to measure post-error slowing: A confound and a simple solution. *Journal of Mathematical Psychology*, 56, 208-216.
- 2012 Ho, T., Brown, S., van Maanen, L., Forstmann, B. U., Wagenmakers, E.-J., & Serences, J. (2012). The optimality of sensory processing during the speed-accuracy tradeoff. *Journal of Neuroscience*, 32, 7992-8003.
- 2012 Keuken, M. C., Uylings, H. B. M., Geyer, S., Schäfer, A., Turner, R., & Forstmann, B.U. (2012). Are there three subdivisions in the primate subthalamic nucleus? *Frontiers in Neuroanatomy*, 6:14.
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- 2010 Ridderinkhof, K. R., Forstmann, B. U., Wylie, S., Burle, B., & van den Wildenberg, W. P. M. (2010). Neurocognitive mechanisms of action control: Resisting the call of Sirens. *Wylie Interdisciplinary Reviews (WIREs) Cognitive Science*, 2, 174-192.
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- 2008 Forstmann, B. U., Dutilh, G., Brown, S., Neumann, J., von Cramon, D. Y., Ridderinkhof, K. R., & Wagenmakers, E.-J. (2008). Striatum and pre-SMA facilitate decision-making under time pressure. *Proceedings of the National Academy of Sciences*, 105, 17538-17542.
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- 2008 Forstmann, B. U., Wolfensteller, U., Derrfuss, J., Neumann, J., Brass, M., Ridderinkhof, K. R., & von Cramon, D. Y. (2008). When the choice is ours: Context and agency modulate the neural bases of decision-making. *PLoS ONE*, 3: e1899.
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- 2007 Forstmann, B. U., Ridderinkhof, K. R., Kaiser, J., & Bledowski, C. (2007). At your own peril: An ERP study of voluntary task-set selection processes in medial frontal cortex. *Cognitive, Affective, & Behavioral Neuroscience*, 7, 286-296.
- 2007 Forstmann, B. U., Brass, M., & Koch, I. (2007). Methodological and empirical issues when dissociating cue-related from task-related processes in the explicit task-cuing procedure. *Psychological Research*, 72, 393-400.
- 2006 Forstmann, B. U., Brass, M., Koch, I., & von Cramon, D. Y. (2006). Voluntary selection of task sets revealed by functional magnetic resonance imaging. *Journal of Cognitive Neuroscience*, 18, 388-398.
- 2006 Neumann, J., von Cramon, D. Y., Forstmann, B. U., Zysset, S., & Lohmann, G. (2006). The parcellation of cortical areas using replicator dynamics in fMRI. *NeuroImage*, 32, 208-219.
- 2006 Preul, C., Hund-Georgiadis, M., Forstmann, B. U., & Lohmann, G. (2006). The cortical thickness and ventricular width in normal ageing: A morphometric study at 3 Tesla. *Journal of Magnetic Resonance Imaging*, 24, 513-519.
- 2005 Forstmann, B. U., Brass, M., Koch, I., & von Cramon, D. Y. (2005). Internally generated and directly cued task sets: An investigation with fMRI. *Neuropsychologia*, 43, 943-952.
- 2005 Brass, M., Derrfuss, J., Forstmann, B., & von Cramon, D. Y. (2005). The role of the inferior frontal junction area in cognitive control. *Trends in Cognitive Sciences*, 9, 314-315.

Invited Presentations

- 2018 Towards a mechanistic understanding of the human subcortex. Invited lectures at Cold Spring Harbor Asia 'Whole-brain dynamics and cognition', Suzhou, China, July 2018.
- 2018 Confirmatory studies and registered reports: tools to restore confidence in empirical research. FENS Forum of Neuroscience: Satellite Symposium, Berlin, Germany, July 2018.
- 2018 Strategic decision-making in the human subcortex measured with UHF-MRI. Invited lecture at the MBIC lecture series at Maastricht University, Maastricht, the Netherlands, June 2018.
- 2018 Iron accumulation in neurodegenerative disease and aging – QSM as a new tool for clinical research. Invited lecture at the annual ISMRM meeting, Paris, France, June 2018.
- 2018 Strategic decision-making in the human subcortex measured with UHF-MRI. Invited lecture at Movement Disorder Unit at the Charité, Berlin, Germany, February 2018.
- 2017 Strategic decision-making in the human subcortex measured with UHF-MRI. Invited lecture at Ohio State, Columbia, USA, September 2017.
- 2017 Strategic decision-making in the human subcortex measured with UHF-MRI. Invited keynote lecture at the inaugural Cognitive Computational Neuroscience (CCN) meeting, New York, USA, September 2017.
- 2017 Towards a mechanistic understanding of the human subcortex. Invited lecture at the

- Institute for Brain and Behavior, Free University, Amsterdam, June 2017.
- 2017 Towards a mechanistic understanding of the human subcortex. Invited lecture at UCL, London, UK, May 2017.
- 2017 Towards a mechanistic understanding of the human subcortex. Invited lecture at the Trinity College Dublin, Dublin, Ireland, April 2017.
- 2017 Towards a mechanistic understanding of the human subcortex. Invited lecture at the University of Newcastle, Newcastle, Australia, February 2017.
- 2017 Behavioral and neural evidence for urgency in decision making. Invited lecture at the Australian Mathematical Psychology Conference (AMPC) satellite meeting entitled 'Model-based cognitive neuroscience' in Brisbane, Australia, February 2017.
- 2016 Strategic decision-making in the human subcortex measured with ultra-high resolution magnetic resonance imaging. Invited lecture at the FTN Seminar Series at the University Medical Center of the JGU Mainz, Germany, November 2016.
- 2016 Towards a mechanistic understanding of the human subcortex. Invited keynote lecture at NEUROCOG 2016, Leuven, Belgium, November 2016.
- 2016 Behavioral and neural evidence for urgency in decision making. Invited lecture at the Psychonomics Symposium entitled 'Model-based cognitive neuroscience', Boston, USA, November 2016.
- 2016 Strategic decision-making processes implemented in the human subcortex measured with ultra-high-field magnetic resonance imaging. Invited lecture at the SfN Symposium entitled 'Fronto-Subthalamic Circuits for Control of Action and Cognition', San Diego, USA, November 2016.
- 2016 The anatomo-functional role of the subthalamic nucleus in stopping and strategic decision-making. Invited lecture at the 1st annual Cognitive Control meeting, San Diego, USA, November 2016.
- 2016 Strategic decision-making processes implemented in the human subcortex measured with ultra-high-field magnetic resonance imaging. Invited lecture at the Universitaetsklinikum Hamburg-Eppendorf, Hamburg, Germany, October 2016.
- 2016 Decision threshold dynamics in the human subcortex measured with ultra-high resolution magnetic resonance imaging. Invited lecture at the INS meeting in Baiona, Spain, June 2016.
- 2016 Introduction to model-based cognitive neuroscience. Invited lecture at the MultiTask SPP meeting in Aachen, Germany, May 2016.
- 2016 Striatum codes for the dynamics of decision urgency in the human brain. Invited lecture at the 6th Symposium on Biology of Decision-Making, Paris, France, May 2016.
- 2016 Striatum codes for the dynamics of decision urgency in the human brain. Invited lecture at the International Meeting of the Psychonomic Society, Granada, Spain, May 2016.
- 2016 Towards a mechanistic understanding of the human subcortex. Invited lecture at the Netherlands Institute for Neuroscience. Amsterdam, NL, April 2016.
- 2015 The anatomo-functional role of the subthalamic nucleus in strategic decision-making. Invited lecture at the Royal Society of London, UK, November 2015.
- 2015 Model-based cognitive neuroscience: The role of the subthalamic nucleus in strategic decision-making. Invited lecture at University of San Diego, California, USA, October 2015.
- 2015 Inaugural address entitled 'Reciprocal relations between cognitive neuroscience and cognitive models: Opposites attract!' at Leiden University, Netherlands, October 2015.
- 2015 Functional networking in science. Invited talk at the University of Tromsø, Norway, August 2015.
- 2015 Urgency in decision making. Invited talk at the Radboud University Summer School, Nijmegen, the Netherlands, August 2015.
- 2015 Inaugural address entitled 'Discovering terra incognita with ultra-high resolution 7T MRI' at the University of Amsterdam, Netherlands, May 2015.
- 2015 Atlasing the human subcortex with 7T MRI. Invited talk at the opening ceremony of the Spinoza Centre for Neuroimaging, Amsterdam, the Netherlands, March 2015.
- 2014 Model-based cognitive neurosciences. Invited keynote lecture at the opening ceremony of the Mind Research and Imaging Center, Tainan, Taiwan, November 2014.
- 2014 Functional and structural role of the human subcortex. Invited keynote lecture at the 12th International Cognitive Neuroscience Conference (ICON), Brisbane, Australia, July 2014.
- 2014 Model-based neurosciences. Invited talk at the Neuroeconomics Seminar of the Queensland University of Technology – School of Economics & Finance, Brisbane, Australia, July 2014.
- 2014 Accumulation vs Urgency. Invited talk at the 'model-based neuroscience' symposium at the 12th International Cognitive Neuroscience Conference (ICON), Brisbane, Australia, July 2014.

- 2014 When the brain takes a break: A model-based approach for mind wandering. Invited talk at the Cognitive Control workshop at the University of Newcastle, Australia, July 2014.
- 2014 The role of the subthalamic nucleus in strategic decision making. Invited talk at the University of Zürich Neuroeconomics Seminar, Zürich, Switzerland, May 2014.
- 2014 The role of the subthalamic nucleus in strategic decision making. Invited talk at the UCL seminar series, London, UK, April 2014.
- 2014 Functional and structural role of the subthalamic nucleus in strategic decision making. Invited talk at the University of Utrecht, Utrecht, the Netherlands, April 2014.
- 2013 Ultra-fast microstructural white matter tract strength changes within the stopping network. Invited talk at the Inhibition workshop at the University of San Diego, CA, USA, November 2013.
- 2013 Structural and functional role of the human subcortex. Invited talk at the FMRIB, Oxford, UK, December 2013.
- 2013 The role of the subthalamic nucleus in strategic decision making. Invited talk at the University of Bristol, Bristol, UK, September 2013.
- 2013 Model-based cognitive neuroscience: The role for the subthalamic nucleus in strategic decision making. Invited talk at the Leiden University colloquium series, Leiden, Netherlands, May 2013.
- 2013 Model-based neurosciences. Invited talk at the Utrecht University Neuroscience Seminar, Utrecht, Netherlands, April 2013.
- 2013 Model-based cognitive neuroscience: The role of the subthalamic nucleus in strategic decision making. Invited talk at the MRC CBU colloquium series, Cambridge, UK, April 2013.
- 2013 Model-based neurosciences. Invited talk at the Dresden University Springschool, Dresden, Germany, March 2013.
- 2012 Model-based neurosciences. Invited talk at the Aachen University colloquium series, Aachen, Germany, December 2012.
- 2012 Bias in the brain. Invited talk at the "Motivation and Actions" workshop, Copenhagen, Denmark, August 2012.
- 2012 Individual differences in strategic decision-making. Invited talk at the Oldenburg University colloquium series, Oldenburg, Germany, July 2012.
- 2012 Impulses: A model-based decision neuroscience approach. Invited talk at the Duke University colloquium series, Durham, USA, April 2012.
- 2012 Model-based neurosciences. Invited talk at the Max Planck Institute for Neurological Research colloquium series, Cologne, Germany, March 2012.
- 2011 Model-based neuroscience. Invited talk at the University of Irvine colloquium series, Irvine, USA, November 2011.
- 2011 Model-based neuroscience. Invited talk at the Oxford University seminar series, Oxford, UK, March 2011.
- 2010 Strategic effects in decision-making. Invited talk at the CUBRIC seminar series, Cardiff, UK, December 2010.
- 2010 Neural basis of the speed-accuracy trade-off: Model-based functional and structural studies in humans. Invited talk at the "Inhibition Workshop", San Diego, USA, November 2010.
- 2010 Neural basis of the speed-accuracy trade-off: Model-based functional and structural studies in humans. Invited talk at the "Decision Neuroscience Workshop", Berlin, Germany, September 2010.
- 2010 Individual differences in cortico-striatal connections predict control over speed and accuracy in perceptual decision-making. Invited talk at the "Individual differences symposium" at the Neuro2010, Kobe, Japan, September 2010.
- 2009 Decision-making under time pressure. Invited key-note lecture at the DGfZ, Leipzig, Germany, October 2009.
- 2008 Individual differences in cognitive control revealed by fMRI. Invited talk at the University of Newcastle, Australia, January 2008.
- 2007 Combining RT distribution analysis and fMRI: Processing dynamics in the Simon task. Invited talk at the Laboratoire de Neurobiologie de la Cognition, University of Marseille, France, February 2007.
- 2006 Neural correlates of endogenous control processes in task switching investigated with functional MRI. Invited talk at the FMRIB, Oxford University, UK, May 2006.

Committee Work

- 2015-current Member of the organizing committee for the NVP meeting in Egmond aan Zee, the Netherlands.
- 2014-current Member of the advisory committee for the inaugural Cognitive Computational

- Neuroscience (CCN) meeting in New York, USA, to be held in 2017.
- 2010–current Member of the steering committee of the Spinoza Centre for Neuroimaging, Amsterdam, the Netherlands.
- 2017-current Member of the organizing committee for the ICON XIV meeting in Helsinki, Finland.
- 2014-2017 Member of the executive committee for the ICON XIII meeting in Amsterdam, the Netherlands, held in 2017.
- 2013 Member of the organizing committee for the ICON XII meeting in Brisbane, Australia.
- 2013 Member of the organizing committee for the ESCAN meeting in Dortmund, Germany.
- 2010 Member of the KNAW 7T MRI committee.

Mentoring program

- 2018 Mentor in the career development program of Bergen University, Norway.
- 2018 Mentor in the career development program of the University of Amsterdam, the Netherlands.

PhD committee member

- 2018 Lauretta Dekkers (Amsterdam University, NL)
- 2018 Yoshiuki Onuki (Rotterdam University, NL)
- 2018 Michelle Colombo (Amsterdam University, NL)
- 2017 Anne Urai (Hamburg University, NL)
- 2017 Roy de Kleijn (Leiden University, NL)
- 2017 Rudy van den Brink (Leiden University, NL)
- 2016 Mikael R. Kowal (Leiden University, NL)
- 2016 Leah Maizey (Cardiff University, UK)
- 2016 Laura Steenbergen (Leiden University, NL)
- 2016 Irene van de Vijver (University of Amsterdam, NL)
- 2016 Matthias Ekman (Donders Institute, NL)
- 2015 Alexander Diaz (Free University Amsterdam, NL)
- 2015 Niels Kloosterman (University of Amsterdam, NL)
- 2015 Dilene van Campen (University of Amsterdam, NL)
- 2015 Stephen Brown (Leiden University, NL)
- 2015 Mikael Bastian (ENS, Paris, France)
- 2014 Michiel Kleinnijenhuis (Donders Institute, NL)
- 2013 Charlotte Rae (Cambridge University, UK)

Teaching

- 2015–current Invited lecture on model-based neuroscience for the master course “Cognitive Science”, University of Amsterdam, the Netherlands.
- 2010–current Introduction to neuroscientific methods and anatomy of the human brain; Institute for Interdisciplinary Studies, University of Amsterdam, the Netherlands (6 ECTS).
- 2010–current Invited lecture on model-based neuroscience for the bachelor course “Systems Neuroscience”, University of Amsterdam, the Netherlands.
- 2011 Invited lecture on cognitive control for bachelor students from the beta gamma track, University of Amsterdam, the Netherlands.
- 2010 Invited lecture for the course “Cognitive Control”, Donders Institute for Neuroimaging, Nijmegen, the Netherlands.
- 2007–2010 Psychoneurolinguistics; Institute for Interdisciplinary Studies, University of Amsterdam, the Netherlands (6 ECTS).
- 2008 Invited lecture for the course “Cognitive and Motor Control”, Ghent University, Belgium.
- 2006-2008 Research practice: Applied (“Onderzoeksgroepen”); second year course, University of Amsterdam, the Netherlands.
- 2006 Current issues in cognitive science (with Richard Ridderinkhof and Michiel Lambalgen); Institute for Interdisciplinary Studies, University of Amsterdam, the Netherlands (9 ECTS).

Lab Members

- Faculty Anneke Alkemade (Assistant Prof), Rawien Balesar (Technical Assistant)
- Senior Scientists Pierre-Louis Bazin, Bernadette van Wijk, Max Keuken, Martijn Mulder. Senior Scientists are working in computational neuroscience and postmortem neuroanatomy.
- PhD Students Steven Miletic (with Leendert van Maanen), Bethany Isaacs (with Yasin Temel), Anne Trutti (with Bernhard Hommel), Klodiana-Daphne Tona (with Sander Nieuwenhuis & Thijs van Osch), Josephine Groot (with Matthias Mittner), Scott Isherwood (with Pierre-Louis Bazin). All students are working in cognitive neuroscience, combining quantitative mathematical models with neuroscience

Research
Assistants

data including functional and structural measures.
Nikita van Berendonk