Dr Johannes (Joe) Bathelt

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PROFESSIONAL APPOINTMENTS

2022-present	**Lecturer** (permanent) Department of Psychology, Royal Holloway, University of London
2020-2022	**Lecturer** (tenure track) Department of Psychology, Royal Holloway, University of London
2019-2020	**Amsterdam Brain & Cognition Talent Grant Fellow** Dutch ADHD & Autism Research Centre, University of Amsterdam
2017-2018	**Ad-hoc Data Science Consultant** *illumr* Augmented Cognition, London
2015-2019	**Post-doctoral fellow (Medical Research Council)** MRC Cognition & Brain Sciences Unit, University of Cambridge

EDUCATION

2020-2022	**Fellowship of the Higher Education Academy,** Royal Holloway, University of London Professional certification for teaching in higher education
2011-2015	**Doctor of Philosophy (Ph.D.),** University College London & Great Ormond Street Hospital for Children NHS Foundation Trust Thesis title: "Neural and socio-cognitive sequelae of congenital visual disorders of the peripheral visual system during mid-childhood"
2010-2011	**Master of Science (M.Sc.),** University College London MSc in Neuroscience, Dissertation: "Physiological correlates of valence and arousal ratings of perceived emotional facial expressions", Merit awarded
2007-2010	**Bachelor of Science (B.Sc.) Biology,** University of Tübingen Specialisation in Physiology and Neuroscience, First-class equivalent

FUNDING & AWARDS

2022	Sponsored studentship, Royal Holloway & HEC Pakistan (£50k, as supervisor)
2022	Doctoral Network, Horizon-Europe (€2.6mil, as Co-Investigator)
2020	Seed Fund, Royal Holloway, University of London (£10k)
2018	Talent Grant, Amsterdam Brain & Cognition (€125k)
	Top 1% Reviewer in Neuroscience & Behaviour, Publons
	Travel Award, International Mind, Brain, and Education Society ($1k)
	Travel Award, Guarantors of Brain (£820)
	Research Prize, Sparrho (£500)
2017	Travel Award, Guarantors of Brain (£500)
	Accelerated promotion, MRC (£31,000 pa)
2016	Public engagement award, "I'm a scientist - get me out of here" (£500)
	Exceptional performance award, MRC
	Conference travel grant, Experimental Psychology Society (£500)
	Research Associate fellowship, Corpus Christi College
2015	Post-doctoral fellowship (Bathelt and Astle), MRC (£236k)
2014	Bogue Research Fellowships for lab visit in the US, UCL (£2,500)

PUBLICATIONS

I published 31 papers (21 first author) in peer-reviewed journals, including in the high-impact journals *Cerebral Cortex*, *Current Biology*, *Journal of Neuroscience*, and *Journal of the American Association of Child and Adolescent Psychiatry*. My papers received 587 citations. My *h*-index is 15. See Page 3 for a complete reference list.

MEDIA COVERAGE

EurekAlert!: "Early behavioural problems predict adolescent mental health difficulties" [10/2/2021]
Spectrum: "Older autistic adults may retain strong visual abilities" [2/3/2020]
Cosmos Magazine: "Learning difficulties linked to poor brain connectivity" [2/3/2020]
BBC News: "Learning difficulties 'link to brain connections'" [[27/2/2020]]
The Guardian: "Brain wiring could be behind learning difficulties" [27/2/2020]
TES Magazine: "Why a diagnosis should not dictate the intervention offered to SEND pupils" [2/11/2018]

TEACHING EXPERIENCE

Royal Holloway, University of London
Understanding Neuroscience, first-year undergraduate course (autumn, 2021)
Advanced Developmental Psychology, final-year undergraduate course (autumn, 2021)
Developmental Disorders, final-year undergraduate course (spring, 2021)
Educational Psychology, final-year undergraduate course (spring, 2021)
University of Amsterdam
Autism Spectrum Disorder, lecture for BSc in Clinical Psychology (autumn, 2020)
Developmental Cognitive Neuroscience, lecture for the BSc in Psychobiology (spring, 2019)
University of Cambridge
Developmental Cognitive Neuroscience, lecture for the Cambridge Graduate School in Cognitive Neuroscience (2016-17)
University College London
Social Neuroscience, lecture for the MSc Paediatric Neuropsychology (spring, 2017)
Visual Development, lecture for the MSc Paediatric Neuropsychology (2014-2016)

SUPERVISION

Royal Holloway, University of London
Advisor for a PhD student
Supervisor for three research projects, MSc Clinical Psychology
Supervisor for five final-year research projects, BSc Psychology
University of Amsterdam
Co-assessor of MSc projects, MRes Psychology
Supervision of research projects, BSc Psychobiology
University of Cambridge
Secondary supervisor for two PhD students
University College London
Co-supervision of a research projects, MSc Cognitive Neuroscience
Co-supervision of two research projects, MSc Paediatric Neuropsychology

OTHER ACADEMIC ACTIVITIES

Open science: I'm actively involved in data sharing efforts and make my analysis code available online (12 repositories, https://github.com/joebathelt). My code is being used by colleagues around the world and this open sharing has led to new collaborations for me.

Other training: I continuously strive to expand my skill set and make use of new technologies. I completed in-person or online training in the area of leadership in science (EMBO, 5-day); advanced statistics, data visualization, and reproducibility (via a Coursera data science specialisation); machine learning (online via a Coursera specialisation); advanced topics in neuroimaging (via the Organisation for Human Brain Mapping), and longitudinal data analysis (via the Society for Integrative Developmental Cognitive Neuroscience)

Editorial work: I serve as an associate editor for ***Cortex*** and ***Psychology & Neuroscience***

Ad-hoc peer review: I received an award for being among the top 1% of reviewers in Neuroscience & Behaviour. I acted as a reviewer for *Developmental Cognitive Neuroscience*, *Developmental Science*, *Frontiers in Psychology*, *IEEE Journal of Biomedical and Health Informatics*, *Human Brain Mapping*, *Infant and Child Development*, *Journal of Neuroscience*, *Journal of Cognitive Neuroscience*, *Journal of Neurodevelopmental Disorders*, *Journal of Neurophysiology*, *Journal of Neuropsychology*, *Molecular Psychiatry*, *PloS ONE*, and *Sage Open Psychology*. A verified list of my peer review activity can be found under: https://publons.com/a/654079

Service to the Academic Community:

2022	Steering committee member for the Flux 2022 annual meeting
2016-2018	Post-doc representative, Management Committee, University of Cambridge
2013-2015	Chair of the Student Staff Consultative Committee, UCL
2013	Student representative on the Internal Quality Review panel, UCL
2011-2015	Student academic representative, UCL
2013-2015	Mentor for 1st-year PhD students, UCL

Public engagement:

- I write a biweekly blog on Medium about neuroscience, mental health, and productivity that attracts about 2,000 views each month
- I served as a judge for Google Science Fair, an international science competition for young people between 13 and 18 years (2018)
- I won the UK science communication competition "I'm a scientist get me out of here" that lets teenagers ask questions about science. (around 450 teenagers, November 2016, https://about.imascientist.org.uk/2016/brain-zone-report-november-2016/)
- I developed a lesson "Working Memory for Kids" for schools to teach children between 7 and 11 years about working memory together with a local school (Fenstanton and Hilton Primary School, November 2017). The lesson plan and materials are now available for other teachers worldwide.
- I put together interactive demonstrations suitable for children and presented them at the Blue Dot Festival of Music, Science, and Art 2017 (~4,500 visitors from the general public, Manchester Area, June 2017).
- Writing/Podcasts for non-specialist audiences:
  Linking Brain and Behaviour, PsychologiCall
  Embracing Neurodiversity, Psych Debrief Podcast
  Apples and oranges: What distinguishes struggling learners?", BOLD Blog
  Look beyond the label, TES Magazine
  Crushed by the ivory tower - a personal account of mental health in academia, Medium

Collaborations:

- Boston Children's Hospital/Harvard Medical School, group of Prof Charles A. Nelson: Advice on multivariate methods to characterise individual differences in the development of neurodevelopmental disorders
- University of Pennsylvania, group of Dr. Allyson Mackey: Collaboration around the development of multimodal imaging approach to characterise the neurobiological effects of deprivation during childhood.
- Great Ormond Street Hospital Children NHS Foundation Trust & UCL Great Ormond Street Institute of Child Health, group of Prof Michelle de Haan: Advice on analysis and methods for a national cohort study of children with congenital visual impairment.
- University College Dublin & Queens University Belfast, groups of Dr Michelle Downs and Dr Agnieszka Jaroslawska: Collaboration to establish ecologically-valid measures of inattention in children between 5 and 7 years.

Professional society involvement*:*

- British Society for Cognitive Neuroscience (BACN)
- Cognitive Neuroscience Society (CNS)
- Flux – the society for developmental cognitive neuroscience
- International Mind, Brain, and Education Society (IMBES)
- Organization for Human Brain Mapping (OHBM)

Publication list

Published peer-reviewed articles

Deserno, M. K., **Bathelt, J.** (joint first author), Groenman, A. P., & Geurts, H. M. (2022). Probing the overarching continuum theory: data-driven phenotypic clustering of children with ASD or ADHD. *European Child & Adolescent Psychiatry*. https://doi.org/10.1007/s00787-022-01986-9

Xie, W., **Bathelt, J.** (joint first author), Fasman, A., Nelson, C. A., & Bosquet Enlow, M. (2022). Temperament and psychopathology: The "community" to which you belong matters. *Child Development*. https://doi.org/10.1111/cdev.13742

Bathelt, J., Geurts, H. M., & Borsboom, D. (2022). More than the sum of its parts: Merging network psychometrics and network neuroscience with application in autism. *Network Neuroscience*, 1–22. https://doi.org/10.1162/netn_a_00222

Bathelt, J., Koolschijn, P. C. M., & Geurts, H. M. (2021). Atypically slow processing of faces and non-faces in older autistic adults. *Autism*, 13623613211065297. https://doi.org/10.1177/13623613211065297

Visser, R. M., **Bathelt, J.** (joint first author), Scholte, H.S., & Kindt, M. (2021). Robust BOLD responses to faces but not to conditioned threat: challenging the amygdala's reputation in human fear and extinction learning. *Journal of Neuroscience*. https://doi.org/10.1523/JNEUROSCI.0857-21.2021

Blanken, T., **Bathelt, J.**, Deserno, M. K., Voge, L., Borsboom, D., & Douw, L. (2021). Connecting brain and behavior in clinical neuroscience: A network approach. *Neuroscience & Biobehavioral Reviews* 130, 81-90. https://doi.org/10.1016/j.neubiorev.2021.07.027

Bathelt, J., Vignoles, A., Astle, D. E. (2021). Just a phase? Mapping the transition of behavioural problems from childhood to adolescence. *Social Psychiatry & Psychiatric Epidemiology* https://doi.org/10.1007/s00127-020-02014-4

Johnson, A., **Bathelt, J.**, Akarca, D., the RED team, & Astle, D.E. (2020). Far and Wide: Associations between childhood socio-economic status and brain connectomics. *Developmental Cognitive Neuroscience 48*, 100888, https://doi.org/10.1016/j.dcn.2020.100888

Simpson-Kent, I. L., Fuhrmann, D., **Bathelt, J.**, Achterberg, J., Borgeest, G. S., & Kievit, R. A. (2020). Neurocognitive reorganisation between crystallized intelligence, fluid intelligence and white matter microstructure in two age-heterogeneous developmental cohorts. *Developmental Cognitive Neuroscience 41*, 100743. https://doi.org/10.1016/j.dcn.2019.100743

Bathelt, J., Geurts, H.M. (2020). Difference in default mode network subsystems in autism across childhood and adolescence. *Autism 25*(2), 556-565, https://doi.org/10.1177/1362361320969258

Siugzdaite, R., **Bathelt, J.**, Holmes, J., Astle, D. E. (2020). Transdiagnostic brain mapping in developmental disorders. *Current Biology 30*, https://doi.org/10.1016/j.cub.2020.01.078

Bathelt, J., Koolschijn, P. C., Geurts, H. M., (2020). Age-variant and invariant features of functional brain organization in middle-aged and older autistic adults. *Molecular Autism 11*(9), https://doi.org/10.1186/s13229-020-0316-y

Scheller, M., Garcia, S., **Bathelt, J.,** de Haan, M., Petrine, K. (2019). Active touch facilitates object size perception in children but not adults: A multisensory event related potential study. *Brain Research 1723*, https://doi.org/10.1016/j.brainres.2019.14638

Bathelt, J., Dale, N. J., de Haan, M., Clark, C.A. (2019). Brain structure in children with congenital visual disorders of differing levels of visual impairment. *Developmental Medicine & Child Neurology*, https://doi.org/10.1111/dmcn.14322

Fuhrmann, D., Simpson-Kent, I. L., **Bathelt, J.**, the CALM team, & Kievit, R. A. (2019). Fluid intelligence in childhood and adolescence. *Cerebral Cortex*, https://doi.org/10.1093/cercor/bhz091

Rennie, J. P., Zhang, M., Hawkins, E., **Bathelt, J.**, & Astle, D. E. (2019). Mapping differential responses to cognitive training using machine learning. *Developmental Science*. https://doi.org/10.1111/desc.12868

Bathelt, J., Scerif, G., Nobre, A.C., & Astle, D. (2019). Whole-brain white matter organization, intelligence, and educational attainment. *Trends in Neuroscience & Education* https://doi.org/10.1016/j.tine.2019.02.004

Bathelt, J., Johnson, A., Zhang, M., & Astle, D. (2019). The cingulum as a marker of individual differences in neurocognitive development. *Scientific Reports*, 9(2281) https://doi.org/ 10.1038/s41598-019-38894-z

Bathelt, J., de Haan, M., Dale, N. (2019). Adaptive behaviour and quality of life in school-age children with congenital visual disorders and different levels of visual impairment. *Research in Developmental Disabilities*, 85, 154-162, https://doi.org/10.1016/j.ridd.2018.12.003

Astle, D., **Bathelt, J.**, the CALM team, Holmes, J. (2018). Remapping the cognitive and neural profiles of children who struggle at school. *Developmental Science*, 22(1) https://doi.org/10.1111/desc.12747

Bathelt, J., Gathercole, S., Butterfield, S., & Astle, D. (2018). The role of the structural connectome in literacy and numeracy development in children. *Developmental Science*, 21(5), https://doi.org/10.1111/desc.12662

Bathelt, J., Holmes, J., the CALM team, & Astle, D. (2018). Data-driven subtyping of executive function difficulties in childhood. *Journal of the American Association of Child and Adolescent Psychiatry (JAACAP)*, https://doi.org/10.1016/j.jaac.2018.01.014

O'Reilly, M., **Bathelt, J.**, Salt, A., de Haan, M., Dale, N. (2017). Frontal EEG asymmetry and later behavior vulnerability in infants with congenital visual impairment. *Clinical Neurophysiology* 128(11), 2191-2199, https://doi.org/10.1016/j.clinph.2017.08.016

Bathelt, J., Dale, N., de Haan, M. (2017). Event-related potential response to auditory social stimuli, parent-reported social communicative deficits and autism risk in school-aged children with congenital visual impairment. *Developmental Cognitive Neuroscience*, 27, 10-18, https://doi.org/10.1016/j.dcn.2017.07.003

Bathelt, J., Gathercole, S., Johnson, A., Astle, D. (2017). Differences in brain morphology and working memory capacity across childhood. *Developmental Science*, 21:e12579, https://doi.org/10.1111/desc.12579

Bathelt, J., Barnes, J., Raymond, F. L., Baker, K., & Astle, D. (2017). Global and local connectivity differences converge with gene expression in a neurodevelopmental disorder of known genetic origin. *Cerebral Cortex*, 27(7), 3806-3817, https://doi.org/10.1093/cercor/bhx027

Downes, M., **Bathelt, J.** (joint first author) & de Haan, M. (2017). Event-related potential measures of executive functioning from preschool to adolescence. *Developmental Medicine & Child Neurology*, 59, 581-590, https://doi.org/10.1111/dmcn.13395

Bathelt, J., Astle, D., Barnes, J., Raymond, F. L., & Baker, K. (2016). Structural brain abnormalities in a single gene disorder associated with epilepsy, language impairment and intellectual disability. *NeuroImage: Clinical*, 21, 655-665, https://doi.org/10.1016/j.nicl.2016.07.016

Bathelt, J., de Haan, M., Salt, A., & Dale, N. J. (2016). Executive abilities in children with congenital visual impairment in mid-childhood. *Child Neuropsychology*, 1–19. http://doi.org/10.1080/09297049.2016.1240158

Bathelt, J., O'Reilly, H., & de Haan, M. (2014). Cortical source analysis of high-density EEG recordings in children. *JoVE (Journal of Visualized Experiments)*, (88), e51705, http://doi.org/10.3791/51705

Bathelt, J., O'Reilly, H., Clayden, J. D., Cross, J. H., & de Haan, M. (2013). Functional brain network organisation of children between 2 and 5 years derived from reconstructed activity of cortical sources of high-density EEG recordings. *NeuroImage*, 82, 595–604. https://doi.org/10.1016/j.neuroimage.2013.06.003

Book chapters:

Bathelt, J., Downes, M., & de Haan, M. (2020). Brain Development: Function. In Benson, J.B. (ed) *Encyclopedia of Infant and Early Childhood Development*, 2nd ed. (pp. 192-204). Amsterdam, Netherlands: Elsevier.

Xie, W., **Bathelt, J.**, & Downes, M. (2021). Electroencephalography. In Brown, G. (ed) *APA Handbook of Neuropsychology*. Amsterdam, Netherlands: Elsevier.

Conference Presentations (selected highlights)

Oral Presentation: "Make your data shine", Dutch Neuropsychology Society (NVN), Nijmegen 2022

Oral Presentation: "Characterising heterogeneity in neurodevelopmental disorders", Flux annual conference, 2021

Oral Presentation: "Heterogeneity in neurodevelopmental disorders", University of Amsterdam, 2019

Oral Presentation: "Subtyping executive function-related problems in struggling learners", International Mind, Brain, and Education Society (IMBES), Los Angeles, CA, September 2018

Oral Presentation: "Two sides of the same coin: Using structural connectomics to investigate the overlap between maths and reading problems", International Mind, Brain, and Education Society (IMBES), Los Angeles, CA, September 2018

Poster: "Data-driven subtypes of executive function-related behavioural difficulties in children", European Association for Research on Learning and Instruction (EARLI) Neuroscience and Education meeting, London, UK, June 2018

Poster: "Remapping the cognitive and neural profiles of children who struggle at school", Flux satellite meeting 'Big data, little brains', Chapel Hill, US, May 2018

Oral presentation & Poster: "Data-driven brain types and their cognitive consequences", Cognitive Neuroscience Association Annual Meeting, Boston, US, March 2018

Oral presentation: "Data-driven subtyping of executive function difficulties in childhood", International Conference for Cognitive Neuroscience, Amsterdam, Netherlands, August 2017

Oral presentation & Poster: "The role of the structural connectome in literacy and numeracy development in children", Cognitive Neuroscience Society Annual Meeting, San Francisco, US, March 2017

Suggested referees

Dr Duncan E. Astle
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