Hao-Ting Wang, PhD

Postdoctral Research Fellow

H.Wang@bsms.ac.uk | https://wanghaoting.com/
Sackler Centre of Consciousness Science, University of Sussex, UK
Department of Biological Psychiatry, Brighton and Sussex Medical School, UK

RESEARCH POSITIONS

Research Fellow — Sept. 2019 – Present
Sackler Centre for Consciousness Science, University of Sussex — *Brighton, United Kingdom*
PI: Prof Hugo Critchley, Prof Sarah Garfinkle
Cognitive processes in psychiatric conditions with neuroimaging and physiology measures

Postdoctoral Research Associate — Nov. 2018 – Aug. 2019
University of York — *York, United Kingdom*
PI: Prof Jonathan Smallwood
Working on the ERC grant project—Wandering Minds

Research Administrator — Oct. 2015 – Oct. 2018
University of York — *York, United Kingdom*
PI: Prof Jonathan Smallwood and Prof Elizabeth Jefferies
Experiment design, project management, neuroimaging analysis pipeline development

EDUCATION

PhD in Cognitive Neuroscience and Neuroimaging — Sept. 2015 – Dec. 2018
University of York — *York, United Kingdom*
Supervisors: Prof Jonathan Smallwood and Prof Elizabeth Jefferies
Thesis: "*Towards an Ontology of Ongoing Thought*"

Master of Research in Psychology — Sept. 2013 – Sept. 2014
University of York — *York, United Kingdom*

BSc in Psychology — Sept. 2009 – June 2013
National Chengchi University — *Taipei, Taiwan*

TECHNICAL EXPERTISE

Overview: Data analysis, functional magnetic resonance imaging, signal processing, neuroinformatics, multivariate analysis.

Technologies

Neuroimaging: FSL, fMRIPrep, Freesurfer, Connectome Workbench, Brain Image Data Structure (BIDS), nipype
Statistics: nilearn, scikit-learn
Experiment design: PsychoPy
Research computing: container (docker, singularity), cluster computing (SGE), version control (git, github), continuous integration

Programming Languages

Proficient: Python2/3, shell. Competent: LaTeX, MATLAB. Familiar: R, Ruby.

Open source contribution

NiBable: GIFTI reader. fMRIPrep: Documentation on confound regressors. Brainhack book: content generation.

MENTORING EXPERIENCE

PhD		
2019–present	Will Strawson	University of Sussex (with Prof. Sarah Garfinkle)
MSc		
2019	Bronte McKeown, Will Strawson	University of York (with Prof. Jonathan Smallwood)
2018	Delali Konu, Rebecca Lowndes	University of York (with Dr Charlotte Murphy and Prof. Jonathan Smallwood)

TEACHING EXPERIENCE

OHBM Brainhack June 2020

BIDS teaching assistant.

University of York October – March 2016
Programming in Neuroimaging *York, United Kingdom*

Teaching assistant.
Basic Python, data visualization, PsychoPy, data analysis, and shell scripting.

AWARDS

2017	Travel Award	Guarantors of Brain	£600
2016	Travel Award	Brainhack Vienna	$500
2014	Department Summer Bursary Award	University of York	£1000

TALKS

2019 Recent trend in resting-state functional connectivity, University of Sussex, Brighton, UK
2019 Data simulation workshop, University of York, York, UK
2019 Multivariate mapping of functional brain and behaviour, Child Mind Institute, New York
2018 Small steps to reproducible science, University of York, York, UK

PROFESSIONAL SERVICE

Leadership Positions
Mar. 2017 Organizing committee, Brainhack York, York, UK.

Ad-hoc Peer Review
NeuroImage, Advances in Methods and Practices in Psychological Science, Brain Imaging and Behavior, Neuroinformatics

Membership
Sussex Neuroscience ECR representative, University of Sussex
Open Science Interest Group, University of York
Early Career Researcher, University of York
Organization of Human Brain Mapping

PROFESSIONAL DEVELOPMENT

Jun. 2020 OHBM Brainhack, virtual.
Aug. 2019 Neurohackademy, Seattle, USA.
Dec. 2017 Large-scale trends in cortical organization, Leipzig, Germany.
June 2017 Machine Learning Summer School, Tübingen, Germany.
Sep. 2016 Brainhack Vienna, Vienna, Austria.
Feb. 2016 Brainhack@Paris, Paris, France.

PUBLICATIONS

Peer-Reviewed Journals

[1] N. S. P. Ho, D. Baker, T. Karapanagiotidis, P. Seli, H. T. Wang, R. Leech, B. Bernhardt, D. Margulies, E. Jefferies, and J. Smallwood, "Missing the forest because of the trees: slower alternations during binocular rivalry are associated with lower levels of visual detail during ongoing thought," *Neuroscience of Consciousness*, vol. 2020, no. 1, Jan. 2020, publisher: Oxford Academic. [Online]. Available: https://academic.oup.com/nc/article/2020/1/niaa020/5917879

[2] A. Turnbull, T. Karapanagiotidis, H.-T. Wang, B. C. Bernhardt, R. Leech, D. Margulies, J. Schooler, E. Jefferies, and J. Smallwood, "Reductions in task positive neural systems occur with the passage of time and are associated with changes in ongoing thought," *Scientific Reports*, vol. 10, no. 1, p. 9912, Dec. 2020. [Online]. Available: http://www.nature.com/articles/s41598-020-66698-z

[3] B. Mckeown, W. H. Strawson, H.-T. Wang, T. Karapanagiotidis, R. Vos de Wael, O. Benkarim, A. Turnbull, D. Margulies, E. Jefferies, C. McCall, B. Bernhardt, and J. Smallwood, "The relationship between individual variation in macroscale functional gradients and distinct aspects of ongoing thought," *NeuroImage*, vol. 220, p. 117072, Oct. 2020. [Online]. Available: https://linkinghub.elsevier.com/retrieve/pii/S1053811920305589

[4] D. Konu, A. Turnbull, T. Karapanagiotidis, H.-T. Wang, L. R. Brown, E. Jefferies, and J. Smallwood, "A role for the ventromedial prefrontal cortex in self-generated episodic social cognition," *NeuroImage*, vol. 218, p. 116977, Sep. 2020. [Online]. Available: https://linkinghub.elsevier.com/retrieve/pii/S1053811920304638

[5] H.-T. Wang, J. Smallwood, J. Mourao-Miranda, C. H. Xia, T. D. Satterthwaite, D. S. Bassett, and D. Bzdok, "Finding the needle in a high-dimensional haystack: Canonical correlation analysis for neuroscientists," *NeuroImage*, vol. 216, p. 116745, Aug. 2020. [Online]. Available: https://linkinghub.elsevier.com/retrieve/pii/S1053811920302329

[6] A. Turnbull, H. T. Wang, C. Murphy, N. S. P. Ho, X. Wang, M. Sormaz, T. Karapanagiotidis, R. M. Leech, B. Bernhardt, D. S. Margulies, D. Vatansever, E. Jefferies, and J. Smallwood, "Left dorsolateral prefrontal cortex supports context-dependent prioritisation of off-task thought," *Nature Communications*, vol. 10, no. 1, Dec. 2019. [Online]. Available: http://www.nature.com/articles/s41467-019-11764-y

[7] C. Murphy, G. Poerio, M. Sormaz, H.-T. Wang, D. Vatansever, M. Allen, D. S. Margulies, E. Jefferies, and J. Smallwood, "Hello, is that me you are looking for? A re-examination of the role of the DMN in social and self relevant aspects of off-task thought," *PLOS ONE*, vol. 14, no. 11, p. e0216182, Nov. 2019. [Online]. Available: https://dx.plos.org/10.1371/journal.pone.0216182

[8] K. Krieger-Redwood, H.-T. Wang, G. Poerio, L. M. Martinon, L. M. Riby, J. Smallwood, and E. Jefferies, "Reduced semantic control in older adults is linked to intrinsic DMN connectivity," *Neuropsychologia*, vol. 132, p. 107133, Sep. 2019. [Online]. Available: http://www.sciencedirect.com/science/article/pii/S0028393219301708

[9] L. M. Martinon, L. M. Riby, G. Poerio, H.-T. Wang, E. Jefferies, and J. Smallwood, "Patterns of on-task thought in older age are associated with changes in functional connectivity between temporal and prefrontal regions," *Brain and Cognition*, vol. 132, pp. 118–128, Jun. 2019. [Online]. Available: http://www.sciencedirect.com/science/article/pii/S0278262618303981

[10] C. Murphy, H.-T. Wang, D. Konu, R. Lowndes, D. S. Margulies, E. Jefferies, and J. Smallwood, "Modes of operation: A topographic neural gradient supporting stimulus dependent and independent cognition," *NeuroImage*, vol. 186, pp. 487–496, Feb. 2019. [Online]. Available: https://linkinghub.elsevier.com/retrieve/pii/S1053811918320792

[11] A. Turnbull, H.-T. Wang, J. W. Schooler, E. Jefferies, D. S. Margulies, and J. Smallwood, "The ebb and flow of attention: Between-subject variation in intrinsic connectivity and cognition associated with the dynamics of ongoing experience," *NeuroImage*, vol. 185, pp. 286–299, Jan. 2019. [Online]. Available: http://www.sciencedirect.com/science/article/pii/S1053811918319414

[12] H.-T. Wang, G. L. Poerio, C. E. Murphy, D. Bzdok, E. Jefferies, and J. Smallwood, "Dimensions of Experience: Exploring the Ontology of the Wandering Mind," *Psychological Science*, vol. 29, no. 1, pp. 56–71, Nov. 2018. [Online]. Available: http://journals.sagepub.com/doi/10.1177/0956797617728727

[13] M. Sormaz, C. Murphy, H.-t. Wang, M. Hymers, T. Karapanagiotidis, G. Poerio, D. S. Margulies, E. Jefferies, and J. Smallwood, "Default mode network can support the level of detail in experience during active task states," *Proceedings of the National Academy of Sciences*, vol. 115, no. 37, pp. 9318–9323, Sep. 2018. [Online]. Available: https://www.pnas.org/content/115/37/9318

[14] H.-T. Wang, D. Bzdok, D. S. Margulies, R. C. Craddock, M. P. Milham, E. Jefferies, and J. Smallwood, "Patterns of thought: Population variation in the associations between large-scale network organisation and self-reported experiences at rest," *NeuroImage*, vol. 176, no. 1, pp. 518–527, Aug. 2018. [Online]. Available: http://linkinghub.elsevier.com/retrieve/pii/S1053811918303847

[15] C. Murphy, E. Jefferies, S.-A. Rueschemeyer, M. Sormaz, H.-t. Wang, D. S. Margulies, and J. Smallwood, "Distant from input: Evidence of regions within the default mode network supporting perceptually-decoupled and conceptually-guided cognition," *NeuroImage*, vol. 171, no. 2018, pp. 393–401, May 2018. [Online]. Available: http://linkinghub.elsevier.com/retrieve/pii/S1053811918300181

[16] M. Villena-Gonzalez, H.-t. Wang, M. Sormaz, G. Mollo, D. S. Margulies, E. A. Jefferies, and J. Smallwood, "Individual variation in the propensity for prospective thought is associated with functional integration between visual and retrosplenial cortex," *Cortex*, vol. 99, no. 2018, pp. 224–234, Feb. 2018. [Online]. Available: http://linkinghub.elsevier.com/retrieve/pii/S0010945217303994

[17] G. L. Poerio, M. Sormaz, H.-T. Wang, D. S. Margulies, E. Jefferies, and J. Smallwood, "The role of the default mode

network in component processes underlying the wandering mind," *Social Cognitive and Affective Neuroscience*, vol. 104, no. 7, pp. 6430–5, Mar. 2017. [Online]. Available: https://academic.oup.com/scan/article-lookup/doi/10.1093/scan/nsx041

[18] D. Vatansever, D. Bzdok, H.-T. Wang, G. Mollo, M. Sormaz, C. E. Murphy, T. Karapanagiotidis, J. Smallwood, and E. Jefferies, "Varieties of semantic cognition revealed through simultaneous decomposition of intrinsic brain connectivity and behaviour," *NeuroImage*, vol. 158, no. 1, pp. 1–11, 2017. [Online]. Available: http://www.sciencedirect.com/science/article/pii/S1053811917305384

[19] J. G. Sanders, H.-T. Wang, J. W. Schooler, and J. Smallwood, "Can I get me out of my head? Exploring strategies for controlling the self-referential aspects of the mind-wandering state during reading," *The Quarterly Journal of Experimental Psychology*, vol. 70, no. 6, pp. 1053–1062, Jun. 2017. [Online]. Available: http://www.tandfonline.com/doi/full/10.1080/17470218.2016.1216573

[20] J. Smallwood, T. Karapanagiotidis, F. Ruby, B. Medea, I. de Caso, M. Konishi, H.-T. Wang, G. Hallam, D. S. Margulies, and E. Jefferies, "Representing Representation: Integration between the Temporal Lobe and the Posterior Cingulate Influences the Content and Form of Spontaneous Thought," *PLOS ONE*, vol. 11, no. 4, p. e0152272, Apr. 2016. [Online]. Available: http://dx.plos.org/10.1371/journal.pone.0152272

PRESENTATIONS

Conference Posters

[1] H.-T. Wang, C. Rae, G. Davies, C. Gould van Praag, A. Seth, H. Critchley, and S. Garfinkel, "Insula hypoactivation is associated with dissociative experiences." Virtual Conference: OHBM, 6 2020.

[2] H.-T. Wang, N. S. P. Ho, D. Bzdok, B. C. Bernhardt, D. S. Margulies, E. Jefferies, and J. Smallwood, "Neurocognitive patterns dissociating semantic processing from executive control are linked to more detailed off-task mental time travel." Virtual Conference: OHBM, 6 2020.

[3] H.-T. Wang, N. S. Ping Ho, D. Bzdok, B. C. Bernhardt, D. S. Margulies, E. Jefferies, and J. Smallwood, "Neurocognitive patterns dissociating semantic processing from executive control are linked to more detailed off-task mental time travel." Seattle, USA: Neurohackademy, 8 2019.

[4] ——, "Neurocognitive patterns dissociating semantic processing from executive control are linked to more detailed off-task mental time travel." Rome, Italy: OHBM, 6 2019.

[5] H.-T. Wang, E. Jefferies, and J. Smallwood, "Inhibition of prior mental content contributes to content representation of on-going thoughts." Montreal, Canada: RSBC, 9 2018.

[6] H.-T. Wang, D. Bzdok, D. Margulies, C. Craddock, M. Milham, E. Jefferies, and J. Smallwood, "Decomposing self-reports of experience at rest with brain connectivity reveals links to intelligence." Singapore: OHBM, 6 2018.

[7] H.-T. Wang, G. L. Poerio, C. Murphy, D. Bzdok, E. Jefferies, and J. Smallwood, "Dimensions of experience: Exploring the heterogeneity of the wandering mind." Amsterdam, Netherlands: ICON, 8 2017.

[8] H.-T. Wang, D. Bzdok, C. Murphy, D. Vatansever, G. L. Poerio, J. Smallwood, and E. Jefferies, "Component processes and the wandering mind: Links between spontaneous thought contents, task performance and resting state brain connectivity." Vienna, Austria: RSBC, 9 2016.

Last updated: January 25, 2021