Hang Yang

Contact:

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RESEARCH INTERESTS

- `Neural basis of mind wandering and rumination`
- `Intervention of Major Depression Disorder (MDD) with mindfulness meditation`
- `Single trial analysis and computational models of EEG`
- `Cognitive and neural correlates of brain disorders including MDD and developmental dyslexia(DD)`
- `Predictive processing of visual word recognition`

SUMMARY OF ACADEMIC SKILLS AND EXPERIENCE

- `Computational model of decision making`
- `Signal processing of EEG[1] in EEGLAB, Fieldtrip, Matlab and BrainVision Analyzer`
- `Programming with Matlab and Python`
- `Stats and data visualization in R, Python and SPSS, Oracle(PL/SQL)`
- `Extensive research experience in studies of children and adults (both healthy population and patients) using EEG (Brain Products,biosemi) and eye-tracking (Eyelink 1000) techniques`
- `fMRI data analysis in BrainVoyager`

[1]: Including ERPs, single trial analysis and time-frequency analysis, coherence analysis

EDUCATION

- PhD of Computational Cognitive Neuroscience, 10/2018 - 11/2022

  Bernoulli Institute for Mathematics, Computer Science and Artificial Intelligence, Universtiy of Groningen, the Netherlands
- Master of Education (Clinical Cognitive Neuroscience), 09/2015 - 06/2018

  Center of Cognition of Brain Disorders, Hangzhou Normal University, China
- Bachelor of Engineering (Civil Engineering),09/2009 - 06/2013 School of Mechanics and Civil Engineering, China University of Mining and Technology of Beijing, China

COURSES

School courses

- Machine Learning
- Functional MRI Data Analysis
- Multivariate Stats in R
- Developments in Psychology

- Research Methodology in Psychology

Self-study online courses

- Data science specialization of John Hopkins University (Nine courses)

PUBLICATIONS

Published paper

Yang, H.,Paller K., van Vugt, M. (2022) The Steady State Visual Evoked Potential (SSVEP) tracks "sticky" thinking, but not more general mind-wandering. *Frontiers in Human Neuroscience*(accepted)

Yang, H., Zhao, J., Gaspar, C. M., Chen, W., Tan, Y., & Weng, X. (2017). Selectivity of for words in the right hemisphere: Evidence from single trial analysis. *Psychophysiology*, 54(8), 1128–1137.

Zhao J, **Yang H**, Weng X and Wang Z (2018) Emergent Attentional Bias Toward Visual Word Forms in the Environment: Evidence From Eye Movements. *Front. Psychol.* 9:1378.

Xue, H., Wang, Z., Tan, Y., **Yang, H.**, Fu, W., Xue, L., & Zhao, J. (2020). Resting-state EEG reveals global network deficiency in dyslexic children. Neuropsychologia, 138, 107343.

Papers under preparation

1, **Yang, H.**, Jing Zhao, van Vugt, M. (2022) Separating the roles of orthographic and semantic information in the neural correlates of evidence accumulation for lexical decision-making (submitted to PLoS Computational Biology)

2, Kaushik,P., **Yang, H.**, van Vugt, M., Roy, P. Classification of worries and depression among health participants with EEG. *Scientific Reports*(submitted)

3, **Yang, H.**,van Vugt, M. Sticky form of spontaneous thought affect the evidence accumulation in pre-clinical depression (in preparation).

4, **Yang, H.**,Besten, M, van Tol, M.J.,van Vugt, M. Alpha band oscillation modulates the role of sticky thinking on decision making impairment among Major Depression Disorder (MDD) patients (in preparation).

5, **Yang, H.**,Besten, M, van Tol, M.J., van Vugt, M. Differential mechanism of mindfulness and positive fantasizing on the intervention of Major Depression Disorder (MDD)(in preparation).

Other ongoing projects in collaboration

1, **Yang, H.**, Ji, Y., Zhao, J. The role of predictive coding in logographic lexical decision: A simulation study

2, Gimple, S., **Yang, H.**, van Vugt, M. Stuck in thought. A machine learning approach for predicting stickiness of rumination in depression

3, **Yang, H.**,Besten, M, van Tol, M.J., van Vugt, M. The altered resting state connectivity in pre-clinical and clinical depression

Conference presentations

Yang, H., & Van Vugt, M. (2022, July). Separating the roles of orthographic and semantic information in the neural correlates of evidence accumulation for lexical decision-making. Paper presented at Virtual MathPsych/ICCM 2022.

Yang, H., van Vugt, M; Grabowecky M., Paller K. (March 13-16, 2021). Can the steady-state visual evoked potentials (SSVEP) predict mind wandering. Cognitive Neuroscience Society Annual Conference 2021, the United States (Virtual)

Yang, H., van Vugt, M; Taatgen N., Grabowecky M., Paller K. (Dec.19-21, 2019). Keeping track of mind wandering with Steady-state visual evoked potentials (SSVEP). 17th NVP Winter Conference on Brain and Cognition, Egmond aan Zee, the Netherlands

Yang, H., Zhao J., Tan Y., Gaspar, C., Weng X., (Dec.8-10, 2016). Selectivity of for words in the right hemisphere: Evidence from analysis. The 16th International Conference on the Processing of East Asian Languages (ICPEAL), Guangzhou, China.

Yang, H., Tan Y., Shi Y., Zhao J., Wang Z., Weng X. (Oct. 14- Oct. 15, 2016). Development of attentional bias towards forms in the environment, The 19th national conference on psychology, Xian, China.

Zhao J., Li S., **Yang H.**, Tan Y., Cheng Q., Weng X. (Dec.8-10, 2016). Fine neural tuning for print follows an inverted-U shape curve during reading development. The 16th International Conference on the Processing of East Asian Languages (ICPEAL), Guangzhou, China.

Shi Y., **Yang H.**, Ni L., He M., Zhang L. (Oct. 14- Oct. 15, 2016). The behavioral performance and electroencephalogram characteristics of self-control learning in inhibitory control, The 19th national conference on psychology, Xian, China

Experience

Peer Review (2022.4-2022.8)

- 《Reading and Writing》

Teaching Asistant (2021.4-2021.6, Master course given by Marieke van Vugt)

- Computational Cognitive Neuroscience

Supervision (2019-2021)

- 2 Master student, 3 bachelor student in Artifacial Intelligence

Collection Scorecard Analyst (2018.5-2018.10, Home Credit Consumer Finance Co., Ltd.)

- Predictive modelling in Consumer Finance

Lecturer (2018.6, Zhejiang Normal University)

- EEG & ERP Training Camp: Introduction, implementation of EEG experiment and data analysis based on MATLAB and EEGLAB (10 students, 18 hours)

Lecturer (2017.12, South China Normal University)

- Data recording in EEG experiments and data analysis of EEG and ERPs (20 students, 12 hours)

Lecturer (2017.9, Chongqing Siying Science and Technology Ltd.)

- EEG introduction and preprocessing procedures based on EEGLAB (50 students, 3 hours)
- MATLAB overview and EEG signal processing with MATLAB scripts (50 students, 3 hours)

Research assistant (2014.4 - 2015.9)

- Center of Cognition of Brain Disorders, Hangzhou Normal University

AWARDS & HONORS

- 2018-2022 China Scholarship Council for PhD study (EUR 1350/month)
- 2017 National Scholarship for Graduate Students (CNY 20K)
- 2017 Hangzhou Normal University Graduate Student Scholarship (CNY 12K)
- 2016 Hangzhou Normal University Graduate Student Scholarship (CNY 8K)
- 2015 Hangzhou Normal University Graduate Student Scholarship (CNY 9.3K)

REFERENCES

- **Dr. Marieke van Vugt, Asistant Professor**

  Bernoulli Institute for Mathematics, Computer Science and Artificial Intelligenc

Universtiy of Groningen, the Netherlands

Room 326, Nijenborgh 9

Groningen, the Netherlands, 9747AG

m.k.van.vugt@rug.nl

Relationship: Daily supervisor for 4 years (PhD study)

- **Dr. Xuchu Weng, Professor**

  Institute for Brain Research and Rehabilitation

  South China Normal University

  55 Zhongshan (West) Road

  Guangzhou Guangdong China 510631

  wengxc@psych.ac.cn

  Relationship: Professor and supervisor for 3 years (Master study)

- **Dr. Jing Zhao, Associate Professor**

  Center of Cognition of Brain Disorders

  Hangzhou Normal University

  2318 Yuhangtang Road

  Hangzhou Zhejiang China 311121

  zhaojing561@126.com

  Relationship: Researcher and supervisor for 3 years (Master study)

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