

# Curriculum Vitae

Thomas Christophel  
Born July, 31<sup>st</sup> 1983 in Hamburg

## Experience

11/19, ongoing Postdoctoral Scientist, Bernstein Center for Computational Neuroscience, Berlin  
11/18 – 10/19 Research Scientist, Max Planck Institute for Human Development, Berlin  
08/13 – 08/18 Postdoctoral Scientist, Bernstein Center for Computational Neuroscience, Berlin  
02/08 – 07/08 Intern, Bernstein Center for Computational Neuroscience, Berlin  
04/06 – 12/07 Student assistant, Department of Neuropsychology and Behavioral Neurobiology, Bremen  
03/05 Intern, Psychiatric Hospital ‚Klinikum Bremen-Ost‘, detoxification ward

## Education

11/08 – 08/13 PhD student, Bernstein Center for Computational Neuroscience, Berlin  
10/03 – 10/08 Diploma in psychology, University of Bremen

## Publications

Christophel, T. B., Hebart, M. N., & Haynes, J.-D. (2012). Decoding the Contents of Visual Short-Term Memory from Human Visual and Parietal Cortex. *Journal of Neuroscience*, 32(38), 12983–12989.

Coventry, K. R., Christophel, T. B., Fehr, T., Valdés-Conroy, B., & Herrmann, M. (2013). Multiple Routes to Mental Animation Language and Functional Relations Drive Motion Processing for Static Images. *Psychological Science*, 24(8), 1379–1388.

Christophel, T. B., & Haynes, J.-D. (2014). Decoding complex flow-field patterns in visual working memory. *NeuroImage*, 91, 43–51.

van Kemenade, B. M., Seymour, K., Christophel, T. B., Rothkirch, M., & Sterzer, P. (2014). Decoding pattern motion information in V1. *Cortex*, 57, 177–187.

Christophel, T. B., Cichy, R. M., Hebart, M. N., & Haynes, J.-D. (2015). Parietal and early visual cortices encode working memory content across mental transformations. *NeuroImage*, 106, 198–206.

Fehlner, A., Hirsch, S., Weygandt, M., Christophel, T., Barnhill, E., Kadobianskyi, M., ... Hetzer, S. (2016). Increasing the spatial resolution and sensitivity of magnetic resonance elastography by correcting for subject motion and susceptibility-induced image distortions. *Journal of Magnetic Resonance Imaging*.

Christophel, T. B.\*, Klink, P. C.\*, Spitzer, B., Roelfsema, P. R.\*, & Haynes, J.-D.\* (2017). The Distributed Nature of Working Memory. *Trends in Cognitive Sciences*, 21(2), 111–124.

Gayet, S., Guggenmos, M., Christophel, T. B., Haynes, J.-D., Paffen, C. L. E., Stigchel, S. V. der, & Sterzer, P. (2017). Visual Working Memory Enhances the Neural Response to Matching Visual Input. *Journal of Neuroscience*, 37(28), 6638–6647.

Christophel, T. B., Allefeld, C., Endisch, C., & Haynes, J.-D. (2017). View-Independent Working Memory Representations of Artificial Shapes in Prefrontal and Posterior Regions of the Human Brain. *Cerebral Cortex*, 1–16.

Christophel, T. B.\*, Iamshchinina, P.\*, Yan, C., Allefeld, C., & Haynes, J.-D. (2018). Cortical specialization for attended versus unattended working memory. *Nature Neuroscience*, 21(4), 494–496.

## Invited Talks & Symposia

Sligte, I., Olivers, C. N. L., McNab, F., Roelfsema, F., & Christophel, T. B.; Neurally informed theories on visual working memory. VSS 2015; Symposium Organized by I. Sligte.

Christophel, T. B., Peters, B., Bergmann, J., Katus, T., & Mayer, J.; Adaptive Neural Processing during Sensory Working Memory. TeaP 2016; Symposium organized by T. B. Christophel.

Liesefeld, H. R., Christophel, T. B., Conci, M., Förster, R., Hanning, N. M., Jost, K., Khader, P. K., Lin, H.-Y., Peters, B., Reeder, R. R., Schneider, D., & Töllner, T.; Visual working memory: Topics, theories, and approaches. TeaP 2018; Symposium organized by H. R. Liesefeld.

Christophel, T.B.; The distributed nature of working memory: Episode V. Colloquium at the Institute for Psychology, Otto-von-Guericke University, Magdeburg. January 16<sup>th</sup>, 2018. Organized by R. Reeder and S. Pollmann.

Rademakers R., Martinez-Trujillo J., Compte A., Mendoza-Halliday D., Christophel T.B.; The neural codes that support visual working memory representation. ECVF Trieste; Symposium organized by R. Rademakers.

## Skills

**IT** Experimental Stimulation: Cogent, Presentation, Psychtoolbox  
Analysis (imaging): SPM (2-12; incl. batching, ROIs, etc.)  
Analysis (EEG/ECOG): fieldtrip, EEGLAB, BrainVision  
Analysis (MVPA): libsvm, feature selection, searchlights, cvMANOVA, TDT  
Analysis (transforms): Scaling, ICA, PCA, MDS, filtering  
Analysis (statistics): SPSS, Statistica, Statistics Toolbox (MATLAB)  
Visualization: MRIcro(n/GL), Inkscape, Gimp

**Languages** German (native), English (fluent), Matlab, C++, Java

**Other** Building doctoral hats, App development, Event and Experience Design

## Further Experience

**Reviewer** Nature Neuroscience, Journal of Neuroscience, PLoS Biology, Cerebral Cortex, Journal of Cognitive Neuroscience, Frontiers in Neuroscience, Brain Research, Brain and Cognition, Cognitive Neuroscience

**Teaching** Charite Universitätsmedizin:  
• *Kommunikation, Interaktion, Teamarbeit* [tutorial, 2014-2016]  
Berlin School of Mind and Brain:  
• *Neuroimaging* [tutorial, 2016-2018]  
Bernstein Center for Computational Neuroscience:  
• *Attention, Emotion, Movement, Short-term Memory* [lectures, 2015/2016]  
• *Neuroimaging* [tutorial, since 2013]

**Supervision** Master's Theses:  
• Matthias Staib: *Neuronale Aktivitätsmuster bewusster motorischer Vorbereitung.* [2013, currently at UZH Zürich]  
• Chang Yan: *fMRI evidence for working memory storage of Chinese and Tangut characters in prefrontal cortex as well as posterior cortices.* [2014, currently at Charité Universitätsmedizin]  
• Polina Iamshchinina: *Decoding Attended and Unattended Items in Working Memory.* [2017, currently at Free University Berlin]  
PhD Theses:  
• Chang Yan: N.N. [ongoing]

**Activities** Member of the Ethics Committee [Institute for Psychology, Humboldt University, since 2012]  
Past member of the Student Union [Institute for Psychology, University of Bremen, 2003-2006]

## Presentations

Christophel, T. B., & Haynes, J-D.; *Early EEG Signals Predict "Free" Decisions Several Seconds Before They Are Made.* ASSC 2009.  
Christophel, T. B., & Haynes, J-D.; *Early EEG signals predict choices several seconds before they are made.* HBM 2009. **(Talk)**  
Christophel, T. B., & Haynes, J-D.; *Single trial time-frequency decoding of early choice related EEG signals.* SFN 2009  
Christophel, T. B., Hebart, M., & Haynes, J-D.; *Decoding visual working memory content from posterior parietal cortex.* SFN 2011. **(Talk)**  
Christophel, T., & Haynes, J-D.; *Identifying working memory representations of complex motion patterns in parietal cortex using fMRI.* HBM 2012.  
Christophel, T., Cichy, R. M., Hebart, M. N., & Haynes, J-D.; *Neural coding in visual working memory across mental transformations.* SFN 2012. **(Talk)**  
Christophel, T., Endisch, C., & Haynes, J-D.; *Decoding invariant visual working memory.* VSS 2013. **(Talk)**  
Christophel, T., Allefeld, C., Endisch, C., & Haynes, J-D.; *Decoding rotation-invariant and rotation-specific representations in working memory.* HBM 2014.  
Christophel, T., Yan, C., Hetzer, S., & Haynes, J-D.; *Decoding selection-specific activity during the control of visual and auditory working memory.* HBM 2016.  
Christophel, T.\*, Iamshchinina, P.\*, Allefeld, C., Yan, C., & Haynes, J-D. (2017). *Working memory contents outside the focus of attention are represented by different neural populations not in an activity-silent state.* VSS 2017. **(Talk)**  
Christophel, T., Yan, C., Hetzer, S., & Haynes, J-D. (2017). *Decoding the Control of Sensory Working Memory.* ECVF 2017.  
Christophel, T.\*, Iamshchinina, P.\*, Allefeld, C., Yan, C., & Haynes, J-D. (2017). *Working memory contents outside the focus of attention are represented by different neural populations not in an activity-silent state.* SFN 2017. **(Talk)**  
Christophel, T., Yan C., Stopak L., Hetzer S., & Haynes J.-D.; *Evidence for non-frontal control of sensory working memory.* VSS 2018. **(Talk)**