Bio

I am a Cognitive Neuroscientist trying to understand how the visual system works. I am originally from Denmark, but have lived and worked in the US since 2007. I received my PhD in Cognitive Neuroscience in 2013 from Dartmouth College, and since then I have been a post-doctoral scholar at Stanford University, working with Professor Tony Norcia.

My work focuses on the domain of mid-level visual processing, which begins in primary visual cortex ~100 ms after stimulus onset, and then unfolds over the next several hundred ms, in several, mostly topographically organized visual areas. In this deceptively short time-span, the visual system infers information about the shape, location and movement of the elements in the visual world, but also resolves the perceptual organization of the scene: figure-ground relationships, perceptual grouping, constancy operations and much more. These distinct classes of information are encoded by separate neural populations, but are also deeply interdependent, and in many cases represented at multiple stages of visual processing. This means that the basic representation of the visual scene, which provides the foundation for all higher-level vision and acting in the world, is in fact instantiated in a complex and inter-related network of brain areas. I use psychophysics, EEG and functional MRI to probe this network and enhance our understanding of the visual brain as an information processing machine and generator of our vivid experience of the world. My work builds on ideas going back as far as the Gestalt psychologists of the early 20th century, but has direct implications for cutting-edge applications in computer vision and the treatment of visual and neurological disorders.

ACADEMIC APPOINTMENTS

- Social Science Research Associate, Psychology

LINKS

- My website: http://web.stanford.edu/~pjkohler/

Publications

PUBLICATIONS

- Revisiting the functional significance of binocular cues for perceiving motion-in-depth. Nature communications
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• Distinct Representations of Magnitude and Spatial Position within Parietal Cortex during Number-Space Mapping *Journal of Cognitive Neuroscience*  
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• Pattern classification precedes region-average hemodynamic response in early visual cortex *NeuroImage*  
Kohler, P. J., Fogelson, S. V., Reavis, E. A., Meng, M., Guntupalli, J. S., Hanke, M., Halchenko, Y. O., Connolly, A. C., Haxby, J. V., Tse, P. U.  
2013; 78: 249-260

• Effects of attention on visual experience during monocular rivalry *Vision Research*  
2013; 83: 76-81

• Network structure and dynamics of the mental workspace *Proceedings of the National Academy of Sciences*  
Schlegel, A., Kohler, P. J., Fogelson, S. V., Alexander, P., Konuthula, D., Tse, P. U.  
2013; 110 (40): 16277-16282

• Associations between auditory pitch and visual elevation do not depend on language: Evidence from a remote population *Perception*  
Parkinson, C., Kohler, P. J., Sievers, B., Wheatley, T.  
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