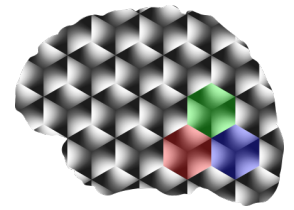


Peter J. Kohler, PhD

pjkohler@yorku.ca | York University, Toronto | <https://www.kohlerlab.com>



Employment

Assistant Professor, York University, Toronto

July 2019 – present

Research Associate, Stanford University

September 2018 – June 2019

Post-doctoral Scholar, Stanford University

September 2013 – August 2018

Doctoral Student, Dartmouth College

September 2008 – August 2013

Graduate Volunteer Researcher, Dartmouth College

October 2007 – June 2008

Education

PhD, Cognitive Neuroscience, Dartmouth College, Hanover NH

September 2008 – August 2013

B.Sc. in Psychology, University of Copenhagen, Denmark

September 2004 – July 2007

Grants

NSERC Discovery Grant 2020-2025 (awarded, \$132,500):

Symmetry as a cue to object and scene representations in human visual cortex

York University Junior Faculty Fund & Minor Research Grant 2020 (awarded, \$5000):

Symmetry in Natural Vision

Service

Center for Vision Research, Member of Steering Committee (director: Rob Allison, 2020-)

Center for Vision Research, Member of Communications Committee (2020-)

Faculty of Health Senator (2020-)

Guest Editor: *Symmetry* (IF: 2.6) special issue: Symmetry and Its Application in Visual Neuroscience (planned for April 2022)

Contributor to JsPsych, a JavaScript library for running behavioral experiments online (2020-)

Teaching

NRSC 2200: Neuroscience Laboratory Techniques, Winter 2022

PSYC 2240: Biological Bases of Behavior, Fall 2020

PSYC 4260: Seminar in Sensation and Perception, Fall 2021

PSYC 6273: Computer Programming for Experimental Psychology, Winter 2021

Mentorship

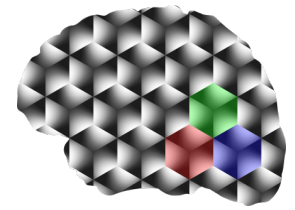
Supervisor: R. Moreau, MA-student, 2020-

Co-Supervisor: R. Gastrock, PhD-student, 2020-

Committee Member: N. Khan (PhD), R. Gastrock (MA), J. Patel (MA), R. Whiley (MSc)

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UG RAs: Christopher Lee (2020-), Linda Godley (2020-2021), Rachel Lysenko (2020-)

UG Honor's Theses: Rita Hdaki (Bio, 2021-2022), Shaya Samet (PSYC, 2021-2022)

Other mentorship: York Stem Fellowship Indicum, supervising 4 BA students (2020-2021)

Peer-reviewed Publications

Boswell, A., **Kohler**, PJ, McCarthy, JD & Caplovitz, GP (2021). Perceived group size is determined by the centroids of the component elements. *Journal of Vision* 21(13), 1.

Sievers, B, Parkinson, C, **Kohler**, PJ, Hughes, J, Fogelson, S & Wheatley, T (2021). Visual and auditory brain areas share a representational geometry for perceiving emotion. *Current Biology*, 31, 1–12

Audurier, P, Héjja-Brichard, Y, De Castro, V, **Kohler**, PJ, Norcia, AM, Durand, J-B & Cottureau, BR (2021). Symmetry processing in the macaque visual cortex. *Cerebral Cortex*.

Kohler, PJ & Clarke, A. (2021). The human visual system preserves the hierarchy of 2-dimensional pattern regularity. *Proceedings of the Royal Society B: Biological Sciences*, 288, 20211142.

Norcia, AM, Lee, A, Meredith, W, **Kohler**, PJ, Pei, F, Ghassan, S, Libove, R, Phillips, J & Hardan, AY (2021). A case-control study of visual, auditory and audio-visual sensory interactions in children with Autism Spectrum Disorder. *Journal of Vision*, 21(4), 5.

Van Rinsveld, A, Guillaume, M, **Kohler**, PJ, Schiltz, C, Gevers, W & Content, A (2020). The neural signature of numerosity by Separating numerical and continuous magnitude extraction in visual cortex with frequency-tagged EEG. *Proceedings of the National Academy of Sciences*, 117(11), 5726-5732.

Barzegaran, E, Bosse, S, **Kohler**, PJ & Norcia, AM (2019). EEGSourceSim: A framework for realistic simulation of EEG scalp data using MRI-based forward models and biologically plausible signals and noise. *Journal of Neuroscience Methods*, 328, 108377.

Kohler, PJ, Cottureau, BR & Norcia, AM (2019). Image Segmentation Based on Relative Motion and Relative Disparity Cues in Topographically Organized Areas of Human Visual Cortex. *Scientific Reports*, 9(1), 9308.

Manning C, Kaneshiro B, **Kohler** PJ, Duta M, Scerif G & Norcia AM (2019) Neural dynamics underlying coherent motion perception in children and adults. *Developmental Cognitive Neuroscience*, 38, 100670.

Kohler, PJ, Meredith, WJ and Norcia, AM (2018). Revisiting the functional significance of binocular cues for perceiving motion in depth. *Nature Communications*, 9(1), 3511.

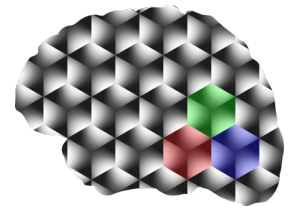
Alp, N, **Kohler**, PJ, Kogo, N, Wagemans, J and Norcia, AM (2018). Measuring Integration Processes in Visual Symmetry with Frequency-Tagged EEG. *Scientific Reports* 8(1), 6969.

Kanayet, F, Mattarella-Micke, A, **Kohler**, PJ, Norcia, AM, McCandliss, B and McClelland, JM (2018). Distinct representations of magnitude and spatial position within parietal cortex during number-space mapping. *Journal of Cognitive Neuroscience*, 30(2), 200-218.

Kohler, PJ, Cottureau, BR and Norcia, AM (2018). Dynamics of Perceptual Decisions About Symmetry in Visual Cortex. *NeuroImage*, 167, 316-330.

Norcia, AM, Pei, F & **Kohler**, PJ (2017). Evidence for long-range spatio-temporal interactions in infant and adult visual cortex. *Journal of Vision*, 17(6), 12.

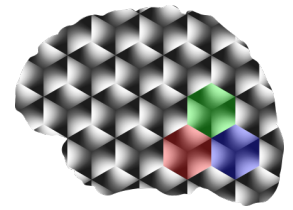
Kohler, PJ, Cavanagh, P, & Tse, PU (2017). Motion-induced position shifts activate early visual cortex. *Frontiers in Neuroscience*, 11(168).



- Kohler**, PJ, Clarke, A, Yakovleva, A, Liu, Y & Norcia, AM (2016). Representation of maximally regular textures in human visual cortex. *Journal of Neuroscience*, 36(3), 714–729.
- McCarthy, JD, **Kohler**, PJ, Tse, PU & Caplovitz, GP (2015). Extrastriate Visual Areas Integrate Form Features over Space and Time to Construct Representations of Stationary and Rigidly Rotating Objects. *Journal of Cognitive Neuroscience*, 27(11), 2158-2173.
- Kohler**, PJ, Cavanagh, P, & Tse, PU (2015). Motion-induced position shifts are influenced by global motion, but dominated by component motion. *Vision Research*, 110, 93-99.
- Schlegel, A, Alexander, P, Fogelson, SV, Li, X, Lu, Z, **Kohler**, PJ, Riley, E, Tse, PU, & Meng, M (2015). The artist emerges: Visual art learning alters neural structure and function. *NeuroImage*, 105, 440-451.
- Kohler**, PJ, Caplovitz, GP & Tse, PU (2014). The global slowdown effect: Why does perceptual grouping reduce perceived speed? *Attention, Perception and Psychophysics*, 76(3), 780-792.
- Fogelson, SV, **Kohler**, PJ, Miller, KJ, Granger, R, and Tse, PU (2014). Unconscious neural processing differs with method used to render stimuli invisible. *Frontiers in Psychology*, 5(601).
- Schlegel, AS, **Kohler**, PJ, Fogelson, SV, Alexander, P, Konuthula, D & Tse, PU (2013). Network structure and dynamics of the mental workspace. *Proceedings of the National Academy of Sciences*, 110(40), 16277-16282.
- Kohler**, PJ, Fogelson, SV, Reavis, EA, Meng, M, Guntupalli, JS, Hanke, M, Halchenko, YO, Connolly, AC, Haxby, JV & Tse, PU (2013). Pattern classification precedes regional-average hemodynamic response in early visual cortex. *NeuroImage*, 78, 249–260.
- Reavis, EA, **Kohler**, PJ, Caplovitz, CP, Wheatley, T & Tse, PU (2013). Effects of attention on visual experience during monocular rivalry. *Vision Research*, 83, 76-81.
- Parkinson, C, **Kohler**, PJ, Sievers, B & Wheatley, T (2012). Associations between auditory pitch and visual elevation do not depend on language: Evidence from a remote population. *Perception*, 47(7), 854-861.
- Porter, KB, Caplovitz, GP, **Kohler**, PJ, Ackerman, CM & Tse, PU (2011). Rotational and translational motion interact independently with form. *Vision Research*, 51(23), 2478-2487.
- Kohler**, PJ, Caplovitz, GP, Hsieh, P-J, Sun, J & Tse, PU (2010). Motion fading is driven by perceived, not actual angular velocity. *Vision Research*, 50(11), 1086–1094.
- Kohler**, PJ, Caplovitz, GP & Tse, PU (2009). The whole moves less than the spin of its parts. *Attention, Perception & Psychophysics*, 71(4), 675-679.
- Mala, H, Castro, MR, Knippel, J, **Kohler**, PJ, Lassen, P & Mogensen, J (2008). Therapeutic effects of a restraint procedure on posttraumatic place learning in fimbria-fornix transected rats. *Brain Research*, 1217, 221-231.

Book Chapters

- Caplovitz, GP, Hsieh, P-J, **Kohler**, PJ & Porter, KB (2017). The Spinning Ellipse Speed Illusion. In *Oxford Compendium of Visual Illusions* (pp. 170-173): Oxford University Press.
- Tse, PU, Reavis, EA, **Kohler**, PJ, Caplovitz, GP, & Wheatley, T (2013). How Attention can Alter Appearances. In *Handbook of Experimental Phenomenology* (pp. 291-315): John Wiley & Sons, Ltd.



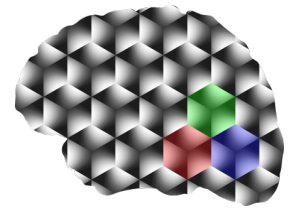
Presentations

Conference Talks

- 2021 May "Differential processing of reflection and rotation symmetries in visual textures"
student-led talk *Vision Sciences Society*, St. Petersburg, FL
- 2018 May "Characterizing late-developing binocular motion mechanisms in human visual cortex"
Vision Sciences Society, St. Petersburg, FL
- 2017 May "Neural responses to motion in 2 and 3 dimensions"
Vision Sciences Society, St. Petersburg, FL
- 2015 May "Parametric responses to rotation symmetry in mid-level visual cortex"
Vision Sciences Society, St. Petersburg, FL
- 2012 May "Neural correlates of perceptually bistable motion-based grouping"
Vision Sciences Society, Naples, FL

Invited Talks

- 2021 April "Symmetries in Visual Textures"
keynote, *Visual Properties Driving Visual Preference* workshop, University of Liverpool, UK
- 2019 March "The role of motion in organizing visual perception"
Department of Psychology, York University, Toronto
- 2019 February "Exploring perceptual organization with steady-state EEG"
Department of Neuroscience, Psychology and Behaviour, University of Leicester, UK
- 2018 February "Symmetry as a fundamental feature dimension in mid-level vision"
Department of Psychology, York University, Toronto
- 2017 July "Steady-state visual evoked potentials in EEG experiments"
Core Outreach Workshop, University of Lincoln, Nebraska
- 2016 February "Texture regularity processing in human visual cortex"
NASA Ames Research Center, Moffett Field, CA
- 2015 December "Perceptual organization at multiple stages of cortical processing"
Danish Centre For Magnetic Resonance, Hvidovre, Denmark
- 2015 August "Perceptual organization at multiple stages of cortical processing"
Cognitive Neuroscience Research Unit, Aalborg, Denmark
- 2015 August "Perceptual organization at multiple stages of cortical processing"
Department of Psychology, Lund University, Sweden
- 2015 August "Perceptual organization at multiple stages of cortical processing"
Fraunhofer Heinrich Hertz Institute, Berlin, Germany
- 2014 January "The Influence of Local and Global Motion on Shifts in Perceived position"
Institut de Neurosciences de la Timone, Marseille, France
- 2014 January "Probing the neural underpinnings of Motion-induced Position Shifts"
Université Paris Descartes, France



Posters

- Kohler, PJ, Norcia, AM & McCandliss, B (2019).** Steady-state visual evoked potentials reveal parietal contributions to abstract numerosity. Poster at *Neuroscience*, Chicago, IL.
- Kohler, PJ, Barzegaran, E, Davis, BE & Norcia, AM (2019).** Encoding- and decision-related brain activity during a motion judgment task. Poster at *Vision Sciences Society*, St. Petersburg, FL.
- Kohler, PJ, Norcia, AM & McCandliss, B (2019).** Assessing Parietal Contributions to Abstract Numerosity with Steady State Visual Evoked Potentials (SSVEPs). Poster at *Cognitive Neuroscience Society*, San Francisco, CA.
- Kohler, PJ, Cottureau, BR & Norcia, AM (2016).** Cortical areas encoding visual segmentation cues from relative motion and relative disparity. Poster at *FENS Forum of Neuroscience*, Copenhagen, Denmark.
- Kohler, PJ, Cottureau, BR & Norcia, AM (2016).** Identifying cortical areas involved in perceptual decisions about symmetry. Poster at *Vision Sciences Society*, St. Petersburg, FL.
- Kohler, PJ & Norcia, AM (2015).** Does SNR of visually evoked BOLD responses change with rapid multiplexed fMRI? Poster at *Cognitive Neuroscience Society*, San Francisco, CA.
- Kohler, PJ, Harder, LH, & Tse, PU (2013).** The influence of local and global motion on perceived position. Poster at *Vision Sciences Society*, Naples, FL.
- Kohler, PJ, Cavanagh, CEP, & Tse, PU (2012).** The influence of motion integration on shifts in perceived position. Poster at *European Conference on Visual Perception*, Alghero, Italy.
- Kohler, PJ, Fogelson, SF, Reavis, EA & Tse, PU (2011).** The neural basis of lightness constancy in the visual system. Poster at *Vision Sciences Society*, Naples, FL.
- Kohler, PJ, Zafer, M, Reavis, EA, & Tse, PU (2010).** The Ebbinghaus illusion requires consciousness of the inducers. Poster at *Association for the Scientific Study of Consciousness 14*, Toronto, Canada.
- Kohler, PJ, Fogelson, SV, Reavis, EA, Guntupalli, JS & Tse, PU (2010).** The Relationship Between Multivariate Pattern Classification Accuracy and Hemodynamic Response Level in Visual Cortical Areas. Poster at *Vision Sciences Society*, Naples, FL.
- Kohler, PJ, Caplovitz, GP & Tse, PU (2009).** The whole moves less than the spin of its parts. Poster at *Vision Sciences Society*, Naples, FL.

Peer Reviewer

NSERC Discovery Grant External Reviewer

*Attention, Perception and Psychophysics
Brain Structure and Function
Cognitive Processing
Communications Biology
eLife
Frontiers of Psychology*

*Journal of Vision
Journal of Neuroscience
NeuroImage
Neuropsychologia
Perception
PLOS one
Psychological Science
3D Research
Vision Research*