

Curriculum vitae

November 7, 2016

Contact

Department of Psychology
Durham University
South Road
DH1 3LE
Durham, UK
maria.olkkonen@durham.ac.uk

Academic positions

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|-------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 2015 – | Lecturer
Department of Psychology
Durham University |
| 2013 – 2015 | Postdoctoral fellow
Center for Cognitive Neuroscience, Department of Psychology
University of Pennsylvania
Advisor: Russell Epstein |
| 2011 – 2013 | Postdoctoral fellow
Department of Psychology
Rutgers University (Camden)
Advisor: Sarah Allred |
| 2009 – 2011 | Postdoctoral fellow
Department of Psychology
University of Pennsylvania
Advisor: David Brainard |
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Education and training

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| 2009 | PhD (Experimental psychology)
Justus Liebig University Giessen, Germany
Thesis: "Investigating the Mechanisms of Real-World Color Constancy"
Grade: Summa cum laude (with distinction)
Advisor: Prof. Karl R. Gegenfurtner |
| 2004 | MA (psychology)
University of Helsinki, Finland
Thesis: "The Interaction of luminance
and chromatic mechanisms in the perception of surface brightness" |

Grade: Eximia cum laude
Advisor: Docent Pentti I. Laurinen

2003 – 2005 Research scientist
Nokia Research Center
Helsinki

2001 – 2003 Research assistant
Department of Psychology
University of Helsinki

Grants and awards

Academy Research Fellow (€737,131)
Academy of Finland, 2015-2020

Hector Fellow Academy speaker award (€1500)
Conference “Colour in Mind”, 24.9.2016, Tuebingen

Young investigator award (€24,000)
Emil Aaltonen foundation, Finland, 2009

Best dissertation in psychology and social sciences
Justus-Liebig University Giessen, 2009

Publications

Citations (Google scholar 6.11.2016): 614
h-index (Google scholar 6.11.2016): 10

Book chapters

Olkkonen, M., Ekroll, V. E. Color constancy and contextual effects on color appearance. *Springer Series in Vision Research: Human Color Vision*, J. Kremers & R. Baras (Eds.), in press.

Olkkonen, M., Hansen, T., & Gegenfurtner, K. R. High-level perceptual influences on color appearance. (2012). In S. R. Allred & G. Hatfield (Eds.), *Visual Experience*. Oxford: Oxford University Press. pp. 179-198.

Witzel, C. & **Olkkonen, M.** Memory colour. (Invited review for Scholarpedia, *In preparation*.)

Peer-reviewed journal articles

Olkkonen, M., Saarela, T. P., & Allred, S. R. (2016). Perception-memory interactions reveal the computational strategy of surface reflectance perception. *Journal of Vision*, *16(3)*:38, 1-21.

Witzel, C., **Olkkonen, M.** & Gegenfurtner, K. R. (2016). Memory colours affect colour appearance. Commentary on Firestone, C., & Scholl, B. Cognition does not affect perception: Evaluating the evidence for 'top-down' effects. *Behavioral and brain sciences* (in press).

Bae, G.-Y., **Olkkonen, M.**, Allred, S. R., & Flombaum, J. I. Some colors are more memorable than others: Stimulus-specific category effects in color working memory and perception. *Journal of Experimental Psychology:General*, *144*(4), 744-763.

Allred S. R., & **Olkkonen, M.** (2015). The effect of memory and context changes on color matches to real objects. *Attention, Perception, and Psychophysics*, *77*(5), 1608-1624.

Olkkonen, M., McCarthy, P., & Allred, S. R. (2014). The central tendency bias in color perception: Effects of internal and external noise. *Journal of Vision*, *14*(11):5, 1-15.

Bae, G.-Y., **Olkkonen, M.**, Allred, S. R., Wilson, C., & Flombaum, J. I. (2014). Stimulus-specific variability in color working memory with delayed estimation. *Journal of Vision*, *14*, 1-23.

Olkkonen, M., & Allred, S. R. (2014). Short-term memory affects color perception in context. *PLoS ONE*, *9*(1):e8648, 1-11.

Allred S. R., & **Olkkonen, M.** (2013). The effect of background and illumination on color appearance of real, 3D objects. *Frontiers in Psychology*. *4*:821. (In Research topic: Colour and form perception: straddling the boundary).

Olkkonen, M., & Brainard, D. H. (2011). Joint effects of illumination geometry and object shape in the perception of surface reflectance *i-Perception*, *2*:9, 1014-1034.

Olkkonen, M., Witzel, C., Hansen, T., & Gegenfurtner, K. R. (2010). Categorical color constancy for real surfaces. *Journal of vision*, *10*(9):16, 1-22. Special issue: Perception of surface color and material properties.

Olkkonen, M., & Brainard, D. H. (2010). Perceived surface glossiness and lightness under real-world illumination. *Journal of vision*, *10*(9):5, 1-19. Special issue: Perception of surface color and material properties.

Olkkonen, M., Hansen, T., & Gegenfurtner, K. R. (2009). Categorical color constancy for simulated surfaces. *Journal of Vision*, *9*(12):6, 1-18.

Olkkonen, M., Hansen, T., & Gegenfurtner, K. R. (2008). Color appearance of familiar objects: Effects of object shape, texture, and illumination changes. *Journal of Vision*, *8*(5):13, 1-16.

Hansen, T., **Olkkonen, M.**, Walter, S. & Gegenfurtner, K. R. (2006). Memory modulates color appearance. *Nature Neuroscience*, *9*, 1367-1368.

Olkkonen, M. & Mustonen, T. (2005). Estimating text legibility of a mobile display on the basis of translational vibration caused by walking. *Journal of the Society for Information Display*, *13*, 657-663.

Manuscripts*

Olkkonen, M., Aguirre, G. K., & Epstein, R. A. Expectation modulates repetition priming under high stimulus variability. *In review*.

Witzel, C., **Olkkonen, M.**, & Gegenfurtner, K. R. A Bayesian model of the memory color effect. *In preparation*.

Mattar, M. G.⁺, **Olkkonen, M.**⁺, Aguirre, G. K., & Epstein, R. A. Adaptation decorrelates shape representations. *In preparation*.

⁺ These authors contributed equally to this work

Saarela, T. P., Mattar, M. G., & **Olkkonen, M.** ShapeToolbox: Generating parametric 3D shapes for visual perception and cognition experiments. *In preparation*.

* All data have been collected and analyzed for these projects. Preprints of the manuscripts are available upon request.

Conference proceedings

Vuori, T., & **Olkkonen, M.** (2006). The effect of image sharpness on quantitative eye-movement data and on image quality evaluation while viewing natural images. *Electronic Imaging 2006, Image Quality and System Performance III*, 6059. San Jose, California, USA.

Mustonen, T. **Olkkonen, M.** & Häkkinen, J. (2004) Examining mobile phone text legibility while walking. *Proceedings of the ACM CHI 2004 Conference on Human Factors in Computing Systems 2004, 2*, 1243-1246. New York: ACM Press.

Vuori, T., **Olkkonen, M.**, Pölönen, M., Siren, A., & Häkkinen, J. (2004). Can eye movements be quantitatively applied to image quality studies ? *NordiCHI2004, Proceedings of the Third Nordic Conference on Human-Computer Interaction*, 335-338, Tampere, Finland.

Oral presentations

Invited talks

“Computational strategies of perceptual constancy: The case of color”
Department of Psychology, Giessen University, Germany, 11/02/16

“Learning and memory on color perception”
Colour in Mind, Tuebingen, Germany, 09/23/16

“Probabilistic color estimation”
UK Colour group meeting, London, UK, 01/13/16

“Color memory and visual processing”
Symposium ”Color memory”
Fall Vision meeting of the Optical Society of America, San Jose, USA, 10/17/15

“The role of memory in surface color perception”
Symposium ”Advances in studying the perception of surface properties”
European Conference on Visual Perception, Belgrade, Serbia, 08/25/14

“Higher-level influences on color perception”
Flombaum lab seminar 11/08/13, Johns Hopkins University, Baltimore, MD

“Perception of surface reflectance properties under real-world illumination”
Department of Psychology, Giessen University, Germany, 11/27/09

“Higher-level influences on color appearance and color constancy”
Workshop on Perceptual Constancies, University of Pennsylvania, 02/20/09

Conference talks

“Effects of short-term memory on hue perception”
Vision Sciences Society Meeting 2013, Florida, USA

“Relationship between constancy and memory for stimulus hue and lightness”
European Conference on Visual Perception 2012, Alghero, Italy

“Shape modulates the effect of lightfield on perceived glossiness”
Vision Sciences Society Meeting 2011, Florida, USA

“Interaction of diffuse and specular reflectance in the perception of object lightness and glossiness”
Vision Sciences Society Meeting 2010, Florida, USA

“Munsell chip classification reveals stable colour categories under illuminant changes”
European Conference on Visual Perception 2008, Utrecht, The Netherlands

Workshops

06/27 –07/05/2012	Computational Vision Summer School Bernstein Center for Computational Neuroscience, Tuebingen Freudenstadt, Germany
06/01 –06/05/2011	Perception of Material Properties Justus-Liebig-University Giessen Rauischolzhausen, Germany
02/20 –02/22/2009	Cognitive and Developmental Factors in Perceptual Constancy University of Pennsylvania Philadelphia, USA
10/17 –10/19/2008	Perception of Material Properties in 3D Scenes University of Pennsylvania Philadelphia, USA
07/05–07/19/2007	Structure, Function and Development of the Visual System Cold Spring Harbor Laboratory Cold Spring Harbor, USA
09/03–09/15/2006	European Summer School on Visual Neuroscience Rauischholzhausen, Germany

Teaching

Tutorials

2015 – 2016	Topics in Cognitive Psychology (2 nd year UG)
2015 – 2017	Topics in Biological Psychology and Perception (2 nd year UG)

2015 – 2017 Classic papers in psychology (1st year UG)
Department of Psychology, Durham University

Lecture courses

2012 – 2013 Method and Theory (Research methods in psychology)
Department of Psychology, Rutgers University

2001 – 2003 Methods in psychophysics and experimental psychology (TA)
2002 – 2003 Introduction to perception (TA)
Department of Psychology, University of Helsinki

Guest lectures

“Color perception”
Class ”Sensation and perception” by Prof. Ingrid Olson, Temple University, Philadelphia,
09/12/14

“Memory colors and color perception”
Class ”Color: Psychology, Philosophy, Physics and Art” by Prof. Sarah Allred, Rutgers
University, Camden, 03/30/11

“Memory colors and color perception”
Class ”Art and Perception” by Prof. Robyn Oliver, Roosevelt University, Chicago,
10/20/10

Experimental skills

Methods: Visual psychophysics, fMRI, color science, probabilistic models
Programming: Matlab, Psychtoolbox, MGL toolbox, basics in Python and C++
Rendering: Radiance, RenderToolbox, Mitsuba
OS: Linux/Unix, MacOS, Windows

Professional activities

Memberships

UK Colour Group – Northern chapter, Membership coordinator (2016)
Vision Sciences Society (2007–present)
Society for Neuroscience (2014)
Association for Psychological Science (2011-2013)

Ad-hoc reviewer

Journal of Vision
Vision Research
Journal of the Optical Society of America A
Perception

Cortex

Ophthalmic and Physiological Optics

Seeing and Perceiving

Psychological Research

Topics in Cognitive Science

Color Research and Application

SIGGHI

Vision

Frontiers in Psychology (Review editor for sections Perception and Cognitive science)

Psychologia