Sébastien M. Crouzet

Personal Information

Age: 30
Citizenship: French
Marital status: married, one daughter.

Contact Information

Berlin School of Mind and Brain
Luisenstraße 56, 10117 Berlin, Germany

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Current Position

Post-doctoral Associate in Niko Busch's laboratory
Charité University, Berlin, Germany
Topic: Reentrant processing and visual awareness: neural and perceptual mechanisms

Education & Academic Experience

Post-doctoral Associate in Thomas Serre's laboratory **2010-2012**
CLPS, Brown University, Providence, RI, USA
Topic: Linking behavioral and electrophysiological data to computational models

Ph.D. in Neurosciences, Université de Toulouse, CNRS, France **2010**
Advisor: Dr Simon J. Thorpe
Topic: Ultra-rapid recognition of objects in natural scenes.
Highest academic distinction: Très honorable avec les félicitations du jury à l'unanimité.
Defense date: 12 July 2010

European Summer School in Visual Neurosciences **Sep 2008**
'From Spike to Awareness', Organisation: K. Gegenfurtner, F. Bremmer, J. Braun.
Rauischholzhausen, Germany

M.S. in Cognitive Science, *Graduated magna cum laude* **2006**
ENS / EHESS / Ecole Polytechnique / Paris 5 / Paris 6, France

B.S. in Cognitive Science, *Graduated magna cum laude* **2004**
Université Bordeaux 2, France

Publications

Refereed Journal Articles

Cauchoix M, Crouzet SM, Fize D & Serre T (submitted). Early ventral visual stream activity enables rapid visual categorization.

Cauchoix M & Crouzet SM (submitted). How plausible is a subcortical account of rapid visual recognition?

Crouzet SM, Joubert OR, Thorpe SJ, Fabre-Thorpe M (2012) Animal Detection Precedes Access to Scene Category. PLoS ONE 7(12): e51471. doi:10.1371/journal.pone.0051471

Crouzet SM and Thorpe SJ (2011). Low level cues and ultra-fast face detection. Front. Psychology 2:342. doi: 10.3389/fpsyg.2011.00342

Crouzet SM and Serre T (2011). What are the visual features underlying rapid object recognition? Front. Psychology 2:326. doi: 10.3389/fpsyg.2011.00326

Crouzet, S. M., Cauchoix, M. (2011). When does the visual system need to look back? *The Journal of Neuroscience*, 15 June 2011, 31(24): 8706-8707

Crouzet, S. M., Kirchner, H., & Thorpe, S. J. (2010). Fast saccades toward faces: Face detection in just 100 ms. *Journal of Vision*, 10(4):16, 1-17, http://journalofvision.org/10/4/16/, doi:10.1167/10.4.16.

Book Chapter

M., Fabre-Thorpe, S. Crouzet, G. A. Rousselet, H. Kirchner and S. J. Thorpe (2008). Catégorisation visuelle rapide: les visages sont-ils des objets spécifiques? In *Traitement et reconnaissance des visages: du percept à la personne*. E. J. Barbeau, S. Joubert and O. Felician. Marseille, Solal: 239-260.

Conference Presentations

Crouzet SM, Hviid Del Pin S, Overgaard M, Busch NA (2013) Dynamics of saccadic responses reveal how object substitution masking interferes with reentrant processing. 55th TeaP - Tagung experimentell arbeitender Psychologen (Conference of Experimental Psychologists).

Crouzet SM, Cauchoix M, Fize D, Serre T (2011) The neural basis of rapid categorization: Linking computational models and electrophysiology. NIPS 2011 workshop on machine learning and interpretation in neuroimaging.

Cauchoix M., Crouzet S., Fize D., Serre T. (2011) Visual features and dynamics of rapid recognition in monkey visual cortex. SFN 2011

Crouzet S M, Stemmler T, Capps M, Fahle M & Serre T (2011) Single-trial decoding of binocular rivalry switches from oculometric and pupil data. Vision Science Society, Naples, Florida.

Brilhault A, Mathey M, Jolmes N, Crouzet S M & Thorpe SJ (2011) Saccades to color: an ultra-fast controllable mechanism to low-level features. Vision Science Society, Naples, Florida.

Thorpe S J, Brilhault A, Mathey M, Crouzet S M, 2010, "Colour based target selection for ultrarapid saccades: The fastest controllable selection mechanism?" Perception 39 ECVP Abstract Supplement, page 158

Mathey M A, Crouzet S M, Thorpe S J, 2010, "The accuracy of ultra-rapid saccades to faces" Perception 39 ECVP Abstract Supplement, page 171

Crouzet, S. M. & Thorpe, S. J. (2010) Power spectrum cues underlying ultra-fast saccades towards faces [Abstract]. Journal of Vision, 10(7): 634

Mathey, M. A., Crouzet, S. M. & Thorpe, S. J. (2010) Ultra-rapid saccades to faces : the effect of target size [Abstract]. Journal of Vision, 10(7): 635

Crouzet S, Mathey M, Thorpe S J (2009). Ultra-fast saccades to faces: A temporal precedence effect? Perception 38 ECVP Abstract Supplement, page 157.

Crouzet, S. M., Joubert, O. R., Thorpe, S. J., & Fabre-Thorpe, M. (2009). The bear before the forest, but the city before the cars: Revealing early object/background processing [Abstract]. Journal of Vision, 9(8):954

Fabre-Thorpe, M., Crouzet, S. M., Wu, C.-T., & Thorpe, S. J. (2009). At 130 ms you "know" where the animal is but you don't yet "know" it's a dog [Abstract]. Journal of Vision, 9(8):786

Thorpe, S. J., Crouzet, S. M., Macé, M. J., Bacon-Macé, N., & Fabre-Thorpe, M. (2009). Masking in a high-level gender discrimination task is essentially entirely pre-cortical [Abstract]. Journal of Vision, 9(8):546

S Crouzet, H Kirchner, S J Thorpe (2008). Saccading towards faces in 100 ms. What's the secret? Perception 37 ECVP Abstract Supplement, page 119.

S J Thorpe, H Kirchner, S Crouzet, P Bayerl, H Neumann (2008). Processing times for optic flow patterns measured by the saccadic choice task. Perception 37 ECVP Abstract Supplement, page 40.

Crouzet, S., Thorpe, S. J., & Kirchner, H. (2007). Category-dependent variations in visual processing time. Journal of Vision, 7(9):922,922a, http://journalofvision.org/7/9/922/, doi:10.1167/7.9.922.

Thorpe, S., Crouzet, S., & Kirchner, H. (2007). Saliency maps and ultra-rapid choice saccade tasks. Journal of Vision, 7(9):30, 30a, http://journalofvision.org/7/9/30/, doi:10.1167/7.9.30.

Simon J. Thorpe, Sébastien Crouzet, Holle Kirchner and Michèle Fabre-Thorpe (2006). Ultra-rapid face detection in natural images : implications for computation in the visual system. First French Conference on Computational Neurosciences, pp. 124-127. Abbaye des Prémontrés, Pont à Mousson, France.

Simon J. Thorpe, Sébastien Crouzet and Holle Kirchner (2006). Comparing processing speed for complex natural scenes and simple visual forms. Perception, vol. 35, p 128.

Invited Talks

Invited by David Sheinberg, Brown University, Providence, RI, USA **Mar 2012**
An early cortical basis for speed of sight.

Invited by Simon J. Thorpe, CERCO-CNRS, Toulouse, France **Jan 2012**
Rapid Visual Processing of Natural Scenes: Linking Behavioral and Electrophysiological Data to Computational Models.

In-House Seminar, Neuroscience Department, Brown University, Providence, RI, USA **Nov 2011**
Rapid Visual Processing of Natural Scenes: Linking Behavioral and Electrophysiological Data to Computational Models.

Invited by Aude Oliva, MIT, Cambridge, MA, USA **May 2009**
Revealing early visual processing of natural scenes using a saccade choice task.

Peer-review Activities

Reviewer for

Animal Cognition (x2)
Seeing and Perceiving
Frontiers in Perception Science (x2)
IEEE Transactions on Pattern Analysis and Machine Intelligence
Cerebral Cortex
Brain Topography
Psychological Science

Review Editor for

Frontiers in Perception Science

Teaching Experience

Tutorial at the Mind & Brain Institute **Dec 2012**
Mind & Brain Institute, Berlin, Germany
R for data analysis

Guest lecture **2011**
Computational Vision course, CLPS1520, Brown University, Providence, RI, USA
Object recognition in natural scenes

Teaching Assistant **2006 to 2009**
Department of Psychology, Université Toulouse Le Mirail, Toulouse, France
Introduction to Neurosciences

Instructor **2006 to 2009**
School of Psychomotricity, Faculté de Médecine de Rangueil, Toulouse, France
The visual system

Instructor **2006 to 2007**
School of Psychomotricity, Faculté de Médecine de Rangueil, Toulouse, France
Epistemology of neuropsychology

Instructor **2006**
School of Psychomotricity, Faculté de Médecine de Rangueil, Toulouse, France
Sleep, emotions

Official Commitments

Co-organizer of the J3CN **2010 to 2011**
Journal Club for Cognitive & Computational Neuroscience, Brown University
https://sites.google.com/a/brown.edu/j3cn/
Providence, USA

Header of the Organizing Committee for the CJCSC'09 **2008 to 2009**
French Cognitive Science Young Researcher Conference
http://fresco.risc.cnrs.fr/cjcsc2009/
Toulouse, France

Header of the Young Researcher Workshop for trend forecasting in Cognitive Science **2009**
Part of the PIRSTEC project funded by the French National Research Agency (ANR)
http://pirstec.risc.cnrs.fr

Students and Post-Docs representative **2006 to 2009**
Brain and Cognition Research Center lab council
Toulouse, France

Founding member of the association inCOGnu **2006 to 2009**
Association of cognitive science students of Toulouse
http://incognu.fr/
Toulouse, France

Fellowships, Grants & Scholarships

4th year of Ph.D. fellowship **Nov 2009 to May 2010**
Fondation pour la Recherche Médicale (FRM)

Postgraduate scholarship **Oct 2006 to Sep 2009**
Délégation Générale pour l'Armement (DGA, French Ministry of Defense)

Master scholarship **2005 to 2006**
René Descartes University (Paris 5)

Professional Societies

Society for Neuroscience
Society of Visual Science

Languages

French: Mother tongue
English: Fluent
German: Currently learning
Spanish: Very elementary

Professional Skills

Operating Systems: Advanced knowledge of Mac OS and GNU Linux (Ubuntu, Mandriva), Windows.
Programming languages: MATLAB, R, Python.
Experimental testing: Psychtoolbox for MATLAB.
Eye movement recording: SR Research Eyelink, SMI View Eyetracker, Chronos Eyetracker, EOG.
EEG and iEEG analysis: Homemade MATLAB functions and EEGlab.
Statistical Analysis: Parametric and non-parametric tests, Multivariate Pattern Analysis (SVM, regression).
Communication and publishing: High knowledge of the scientific typewriter LaTeX, the vector graphics editors Adobe Illustrator & Inkscape, and the presentation software Keynote; knowledge of many common software like Word, Excel, Powerpoint, etc; website creation and maintenance with HTML and CSS.

Referees

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