

David Podhortzer Carmel

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Research interests

- The cognitive neuroscience of perceptual (particularly visual) attention and awareness.
- Interactions between attention, emotion, working memory and visual awareness.
- Top-down influences on perceptual processing.
- Foundations of cognitive science, in particular the scientific study of consciousness.

Academic appointments

- 2007 – present** **International Brain Research Foundation Postdoctoral Fellow**, Carrasco Lab.
Department of Psychology and Center for Neural Science, New York University.
- 2006 – 2007** **Postdoctoral Research Scientist**, Rees Lab.
Institute of Cognitive Neuroscience, University College London.
- 2005 – 2007** **Lecturer**, Management Studies Centre, University College London.

Education

- 2002 – 2006** **PhD**, Institute of Cognitive Neuroscience & Department of Psychology,
University College London.
Advisors: Prof Nilli Lavie and Prof Geraint Rees.
- 2001 – 2002** **M.A. studies in Neuropsychology**, Hebrew University, Jerusalem, Israel.
- 1994 – 2000** **B.A. double major: Psychology and “Amirim” Interdisciplinary Studies
Excellence Programme**, Hebrew University, Jerusalem, Israel.
Graduated Magna Cum Laude.
- 1996 – 2000** **B.Sc.Med.** Hebrew University Medical School, Jerusalem, Israel
Awarded on completion of pre-clinical medical studies.

Publications

Carmel, D., Thorne, J., Rees, G., & Lavie, N. (in press). Perceptual load alters visual excitability. *Journal of Experimental Psychology: Human Perception and Performance*.

Weil, R.S., Wykes, V, **Carmel, D.**, & Rees, G. (in press) Opposite effects of perceptual and working memory load on perceptual filling-in of an artificial scotoma. *Cognitive Neuroscience*.

Carmel, D. (2011). Experimental Philosophy: Surveys alone won't fly. (Letter) *Science*, 332, 1262.

Kanai, R., **Carmel, D.**, Bahrami, B., & Rees, G. (2011). Structural and functional fractionation of right superior parietal cortex in bistable perception. *Current Biology*, 21(3), R106-107.

Carmel, D., Walsh, V., Lavie, N., & Rees, G. (2010). Right parietal TMS shortens dominance durations in binocular rivalry. *Current Biology*, 20 (18), R799-800.

Carmel, D., Arcaro, M., Kastner, S., & Hasson, U. (2010). How to create and use binocular rivalry. *Journal of Visualized Experiments*, 45, <http://www.jove.com/index/details.stp?id=2030>, doi: 10.3791/2030

Nasrallah, M.*, **Carmel, D.*†**, & Lavie, N. (2009). Murder, she wrote: Enhanced sensitivity to negative word valence. *Emotion*, 9 (5), 609-618.

*Equal contribution, †Corresponding author

(See media coverage in *Scientific American Mind*, March 2010;

<http://www.scientificamerican.com/article.cfm?id=accentuating-the-negative>)

Carmel, D., & Carrasco, M. (2008). Perceptual learning and dynamic changes in primary visual cortex. *Neuron*, 57 (6), 799-801.

Bahrami, B., **Carmel, D.**, Walsh, V., Rees, G., & Lavie, N. (2008). Spatial attention can modulate unconscious orientation processing. *Perception*, 37 (10), 1520-1528.

Bahrami, B., **Carmel, D.**, Walsh, V., Rees, G., & Lavie, N. (2008). Unconscious orientation processing depends on perceptual load. *Journal of Vision*, 8 (3), 1-10.

Carmel, D., Saker, P., Rees, G., & Lavie, N. (2007). Perceptual load modulates conscious flicker perception. *Journal of Vision*, 7 (14), 1-13.

Carmel, D., Lavie, N., & Rees, G. (2006). Conscious awareness of flicker involves frontal and parietal cortex. *Current Biology*, 16 (9), 907-911.

Carmel, D., Dayan, Y., Naveh, A., Raveh, O., & Ben-Shakhar, G. (2003). Estimating the validity of the guilty knowledge test from simulated experiments: the external validity of mock crime studies. *Journal of Experimental Psychology: Applied*, 9 (4), 261-269.

Bentin, S., & **Carmel, D.** (2002). Accounts for the N170 face-effect: a reply to Rossion, Curran, & Gauthier. *Cognition*, 85 (2), 197-202.

Carmel, D., & Bentin, S. (2002). Domain specificity versus expertise: factors influencing distinct processing of faces. *Cognition*, 83 (1), 1-29.

Forthcoming

Carmel, D., Raio, C., Carrasco, M., & Phelps, E.A. (submitted). Unconscious fear: Quickly acquired, swiftly forgotten.

Carmel, D., Fairnie, J., & Lavie, N. (submitted). Weight and see: Loading working memory improves incidental noticing.

Carmel, D., & Carrasco, M. (in prep). Dark attention: modulating visual suppression at unattended locations.

Carmel, D., Kanai, R., Bahrami, B., & Rees, G. (in prep). The causal role of parietal cortex in bistable perception: Evidence from recent TMS studies.

Nasrallah, M., **Carmel, D.,** & Lavie, N. (in prep). Load induced emotion blindness.

Carmel, D., & Carrasco, M. (in prep). Attentional generalization of unconscious perceptual learning.

Conference presentations

Carmel, D., Raio, C., Phelps, E. A., & Carrasco, M. (2011). Fast unconscious fear acquisition. 15th meeting of the Association for the Scientific Study of Consciousness. (talk)

Carmel, D., Raio, C., Phelps, E. A., & Carrasco, M. (2011). Fast unconscious fear conditioning. Vision Sciences Society 11th annual meeting. (poster)

Kanai, R., **Carmel, D.,** Bahrami, B., & Rees, G. (2011). Human parietal cortex structure determines individual differences in perceptual rivalry. Vision Sciences Society 11th annual meeting. (talk)

Raio, C., **Carmel, D.,** Carrasco, M., & Phelps, E. A. (2011). Unconscious fear conditioning using continuous flash suppression. Cognitive Neuroscience Society 18th annual meeting. (poster)

Carmel, D., Thorne, J., Rees, G., & Lavie, N. (2010). Perceptual load alters visual excitability. 14th meeting of the Association for the Scientific Study of Consciousness. (talk)

Carmel, D., & Carrasco, M. (2010). Attentional modulation of perceptual learning without awareness. Vision Sciences Society 10th annual meeting. (talk)

Lavie, N., **Carmel, D.,** & Fairnie, J. (2009). Loading working memory can reduce inattention blindness. 13th meeting of the Association for the Scientific Study of Consciousness. (talk)

Carmel, D., & Carrasco, M. (2009). Bright and dark attention: Distinct effect of divided attention at attended and unattended locations. Vision Sciences Society 9th annual meeting. (talk)

Nasrallah, M., **Carmel, D.** & Lavie, N. (2009). It is good to be bad: Enhanced detection sensitivity to negative valence. Experimental Psychology Society Meeting, London (talk)

Carmel, D., Walsh, V., Lavie, N., & Rees, G. (2008). A causal role for right parietal cortex in binocular rivalry demonstrated with TMS. Vision Sciences Society 8th annual meeting. (poster)

Carmel, D., Bradford, E. J., Rees, G., & Lavie, N. (2008). Working memory load modulates processing of ignored emotional stimuli. Cognitive Neuroscience Society 15th annual meeting. (poster)

Carmel, D., Saker, P., Rees, G., & Lavie, N. (2007). Perceptual load modulates the temporal resolution of visual awareness. Vision Sciences Society 7th annual meeting. (talk)

Bahrani, B., **Carmel, D.,** Walsh, V., Rees, G., Lavie, N. (2007). Attentional load modulates subconscious orientation processing. Vision Sciences Society 7th annual meeting. (talk)

Carmel, D. (2007). Consciousness in time: The temporal resolution of visual awareness. 2nd Conference on the Philosophy of Psychology, Neuroscience and Biology. (talk)

Carmel, D., Rees, G., & Lavie, N. (2006). Behavioral ‘baseline shift’ effects of perceptual load. Vision Sciences Society 6th annual meeting. (poster)

Carmel, D., Lavie, N., & Rees, G. (2005). Neural correlates of conscious flicker perception. Vision Sciences Society 5th annual meeting. (poster)

Carmel, D., Freeman, E., Lavie, N., & Rees, G. (2004). Working memory maintains perceptual biases during binocular rivalry. Vision Sciences Society 4th annual meeting. (poster)

Bentin, S., & **Carmel, D. (2001).** Domain specificity versus expertise in visual face processing. Psychonomic Society 42nd Annual Meeting. (talk)

Science Communication

David Carmel, “Show and Tell” (2011). Nature, 472, p. 37.
(<http://www.nature.com/nature/journal/v472/n7341/pdf/472037a.pdf>)

Daniela Schiller and David Carmel, “How free is your will?” Scientific American – Mind Matters, March 2011. (<http://www.scientificamerican.com/article.cfm?id=how-free-is-your-will>)

David Carmel, “Zapping the brain to mess with the mind,” Live presentation at Nerd Nite NYC, 13 May 2011. (<http://galapagosartspace.com/event/nerd-nite-presentations-2>)

David Carmel, “The coolest thing in the world,” Story Collider event, 16 February 2011.
(<http://storycollider.org/podcast/2011-03-05>)

David Carmel on Consciousness: Interview for the website fivebooks.com, April 2010.
(<http://fivebooks.com/interviews/david-carmel-on-consciousness>)

David Carmel, “The summit of consciousness.” Article for the online magazine The Beautiful Brain, July 2010. (<http://thebeautifulbrain.com/2010/07/summit-of-consciousness/>)

Kamila E. Sip and David Carmel, “Can a brain scan predict a broken promise?” Scientific American – Mind Matters, February 2010
(<http://www.scientificamerican.com/article.cfm?id=brain-scan-broken-promise>)

Contributing editor and regular column writer:

Galileo Magazine (Hebrew; similar to “Scientific American” in content and level), 2000 – 2002.
Psycho Magazine (Hebrew; similar to “Popular Psychology” in content and level), 2000 – 2002.

Teaching experience

Class Teaching

- 2010/11** **Lecturer**, New York University, Department of Philosophy.
Course: Conceptual and Empirical Issues in Perception, Attention and Consciousness.
Advanced graduate class, co-taught with Ned Block.
- 2009 – 2010** **Invited guest lectures:** New York University (09/2009); Columbia University (09/2009, 02/2010); Princeton University (12/2009).
- 2005 – 2007** **Lecturer**, University College London, Management Studies Centre.
Course: Communication and Behaviour in Organizations (first year undergraduate course).
- 2004 – 2005** **Demonstrator (TA)**, University College London.
Course: Communication and Behaviour in Organizations.
- 2004 – 2005** **Teaching Assistant**, Birkbeck College, Department of Psychology.
Course: Critical Analysis (final year undergraduate course).
- 2001 – 2002** **Lecturer**, Branco-Weiss Institute, Jerusalem, Israel.
Course: Brain, Mind and Thought (Masters course).
- 1998 – 2001** **Teaching Assistant**, Hebrew University Medical School, Jerusalem, Israel.
Course: Statistics for medical students.

Mentoring

- PhD students** - **Candace Raio**, New York University, 2009-10 (1st year research project).
- **Maha Nasrallah**, University College London, 2007-8.
- Masters theses** - **Pascal Saker**, University College London, 2006 (winner, best thesis in year).
- **Jeremy Thorne**, University College London, 2007 (winner, best thesis in year).
- Undergraduates
(final year
research projects)** - **Mariel Roberts**, New York University, 2011.
- **Anna Khesin**, New York University, 2010.
- **Jake Fairnie**, University College London, 2009.
- **Emma Jane Bradford**, University College London, 2007 (winner, best research project in graduating class).
- **Matthew Weil**, University College London, 2007.
- High School** - **Lisa Famularo**, Herricks High School, Long Island, summer research project, 2010.
- **Si Chen**, Herricks High School, Long Island, summer research project, 2010.

Academic awards

- 2009 – 2012** International Brain Research Foundation Postdoctoral Fellowship.
- 2005, 2007, 2010** Brain Travel awards.
- 2002 – 2005** Graduate School Research Scholarship, UCL.
- 2002 – 2005** Overseas Research Studentship, Universities UK.
- 2002** Fulbright Scholarship for doctoral studies (declined).
- 1996 – 1999** Hebrew University Medical School: Merit-based tuition scholarships.
- 1996 – 1999** Community Involvement Project Awards.
- 1994 – 1997** Hebrew University Excellence awards + Hebrew University “Amirim” prizes.
- 1995** Gross Fund Award.

Invited talks

- 09/ 2010** Cognitive Science, CUNY Graduate Center.
- 03/2009** School of Psychology, University of Aberdeen, UK.
- 03/2009** Psychology Department, University of Essex, UK.
- 04/2008** Psychology Department, University of California Berkeley.
- 06/2007** Department of Psychology, New York University.
- 04/2007** Brain and Cognitive Sciences, Massachusetts Institute of Technology.
- 04/2007** Vision Lab, Department of Psychology, Harvard University.
- 04/2007** Martinos Center, Massachusetts General Hospital.
- 03/2006** School of Psychology, Birkbeck College, University of London, UK.

Ad-hoc reviewing

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|-----------------------------------|--|
| American Journal of Psychology | Journal of Experimental Psychology: Human Perception and Performance |
| Cerebral Cortex | Journal of Experimental Psychology: General |
| Cognition and Emotion | Journal of Vision |
| Consciousness and Cognition | Neuropsychologia |
| Cortex | Vision Research |
| Frontiers in Human Neuroscience | Quarterly Journal of Experimental Psychology |
| Journal of Cognitive Neuroscience | |

Other experience

- 2004** **Organizer**, Annual Postgraduate Psychology Conference, Cumberland Lodge, UK.
- 2000 – 2002** **Lab Manager & RA**, Brain Trauma Rehabilitation Lab, Neurological Rehabilitation Ward, Beth-Loewenstein Medical Center, Ra'anana, Israel.
- 1999 – 2001** **Research Assistant**, Cognitive Electrophysiology Lab, Department of Psychology, Hebrew University, Jerusalem, Israel.
- 1998 – 1999,**
2002 – 2004 **Exam writer**, Mofet Institute for Excellence in Education, Jerusalem, Israel.
Wrote the Israeli Education Ministry's entrance exam to teachers' training programs.
- 1997 – 2001** **Course Teacher**, Kidum Educational Enterprises inc., Israel.
- GMAT preparation courses (to graduates applying for MBA studies)
 - Psychometric exam preparation courses (Israeli equivalent of the SAT).
 - Senior Instructor in the firm's teacher training program (1999-2001)
- 1989 – 1992** **Military service**, Israel.

Academic references

1. Professor Nilli Lavie

Institute of Cognitive Neuroscience, University College London, London WC1E 6BT, UK.
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2. Professor Geraint Rees

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3. Professor Marisa Carrasco

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4. Professor Ned Block

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