

## Dr Carmel Mevorach BA, PhD

Lecturer

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### Qualifications

- BA (Tel Aviv)
- PhD (Birmingham)

### Biography

I graduated from Tel Aviv University, Israel, doing both psychology and computer sciences. I later moved on to develop a new computerised assessment and training batteries for children and adults with ADHD (together with Professor Yehoshua Tsal and Dr Lilach Shalev) following which I arrived at Birmingham to study for a Ph.D. with Professor Glyn Humphreys. After completion of my Ph.D. I took a couple of post-doc positions (ESRC, MRC) before taking up a lectureship position in 2010.

### Teaching

Cognitive Psychology A (Module leader)

### Research

I am generally interested in the neuroanatomy of attentional selection, and how attention complements perception through the interaction of top-down and bottom-up processes. One such form of attentional selection of particular interest is salience-based selection (see Mevorach, Humphreys and Shalev, 2006, Nature Neuroscience).

In investigating these mechanisms I combine a variety of experimental techniques including neuropsychological studies, trans-cranial magnetic stimulation (TMS), fMRI and ERP, including their simultaneous use within the same study.

My interest in attention and perception also extends to cases where they might be altered: such as in patients with brain lesion, neurodevelopmental disorders (such as ADHD or Autism) and normal ageing. By better understanding the circuitry of top-down attentional selection in health I aim to elucidate attentional functioning in these atypical scenarios so that the difficulties and also the way they might be ameliorated can be unveiled.

### Publications

Mevorach, C., Hodsoll, J., Allen H. A., Shalev, L., Humphreys, G. W. (2010). Ignoring the Elephant in the Room: A Neural Circuit to Down-regulate Salience. *Journal of Neuroscience*, 30, 6072-6079.

Riddoch, M.J., Chechlacz, M., Mevorach, C., Mavritsaki, R., Allen, H., and Humphreys, G.W. (2010). The neural mechanisms of visual selection: the view from neuropsychology. *Annals of the New York Academy of Sciences*, 1191, 156–181.

Mevorach, C., Humphreys, G. W. & Shalev, L. (2009). Reflexive and preparatory selection and suppression of saliency in the right and left posterior parietal cortex. *Journal of Cognitive Neuroscience*, 21:6, 1204-1214.

Hodsoll, J., Mevorach, C., & Humphreys, G. W. (In press). Driven to less distraction: rTMS of the right parietal cortex reduces attentional capture in visual search. *Cerebral Cortex*.

Mevorach C, Shalev L, Allen HA, Humphreys GW. (In press). The Left Intraparietal Sulcus Modulates the Selection of Low Salient Stimuli. *Journal of Cognitive Neuroscience*.

Shalev, L., Mevorach, C. & Humphreys, G.W. (2008). Letter position coding in attentional dyslexia. *Neuropsychologia*, 46(8), 2145-2151.

Shalev, L., Mevorach, C., & Humphreys, G. W. (2007) Local capture in Balint's syndrome: Effects of grouping and item familiarity. *Cognitive Neuropsychology*, 24, 115-127.

Shalev, L., Tsal Y., & Mevorach C. (2007) Computerized progressive attentional training (CPAT) program: Effective direct intervention for children with ADHD. *Child Neuropsychology*, 13, 382-388.

Mevorach, C., Humphreys, G. W., & Shalev, L. (2006). Opposite biases in salience-based selection for the left and right posterior parietal cortex. *Nature Neuroscience*, 9, 740-742.

Mevorach, C., Humphreys, G. W., & Shalev, L. (2006). Effects of saliency, not global dominance, in patients with left parietal damage. *Neuropsychologia*, 44, 307-319.

Shalev L., Humphreys, G. W., & Mevorach C. (2005). Global processing of compound letters in a patient with Balint's syndrome. *Cognitive Neuropsychology*, 22, 737-751.

Tsal, Y., Shalev, L., & Mevorach, C. (2005). The diversity of attention deficits in Attention Deficit Hyperactivity Disorder: The prevalence of four cognitive factors in ADHD vs. Controls. *Journal of Learning Disabilities*, 38, 142-157.

