

PW01-136 - SYSTEMATIC PARAMETRIC ASSESSMENT OF ATTENTIONAL FUNCTIONS BASED ON THE 'THEORY-OF-VISUAL-ATTENTION' II: DISCRIMINATING ADULT ADHD-PATIENTS FROM HEALTHY CONTROLS

W. Schwarzkopf¹, K. Henning-Fast², U. Müller³, K. Finke⁴

¹*General and Experimental Psychology*, ²*Clinic of Psychiatry and Psychotherapy, LMU, Munich, Germany*, ³*Department of Psychiatry, University of Cambridge, Cambridge, UK*, ⁴*Neuro-Cognitive Psychology, LMU, Munich, Germany*

In order to systematically specify the affected and preserved attentional components in adults with ADHD, we used an assessment tool (Finke et al, 2006) based on Bundesen's 'theory-of-visual-attention' (TVA) to compare two groups of adults with ADHD (medicated and unmedicated) and a matched healthy control group. TVA provides four quantitative, mathematically independent parameter estimates: visual perceptual processing speed (elements/s), working memory (WM) storage capacity (number of elements), spatial distribution of attentional weights, and top-down control. All parameters are assessed with highly similar stimuli (letters) and response requirements (verbal report), imposing comparable demands on perceptual and motor skills. Performance is assessed in terms of accuracy at certain exposure durations instead of response latency, avoiding confounding with motor dysfunction (e.g. hyperactivity). The WM storage capacity was reduced in unmedicated ADHD patients, was significantly higher in medicated patients but was still significantly worse compared to normal controls. The spatial distribution of attentional weights is altered in that unmedicated ADHD patients did not show the normal preference for the left visual hemi-field ('pseudoneglect'). Perceptual processing speed and top-down control of attention were comparable across groups. In conclusion, the attentional core deficit in ADHD seems to consist of a reduction in WM storage capacity, i.e. in the amount of information that can be maintained in parallel. Since no deficits in speed and top-down control have been found, slow and variable performance in response-based task might rather reflect impairments in the initiation, execution and inhibition of motor responses than impairments on the level of perceptual processing.