

CENTER FOR COGNITIVE SCIENCE

University at Buffalo, State University of New York

Wednesday, April 3, 2002

280 Park Hall
North Campus
2:00 pm –4:00 pm

“Visual Selective Attention to Objects and Their Parts”

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Our visual world is hierarchical in nature in the sense that almost any global object or scene can also be analyzed in terms of its local parts. The brain appears to process local and global information differently, revealed by well-studied phenomena such as global precedence (faster responses to global vs. local information), asymmetric interference patterns (global information interferes with local processing more than local interferes with global), lateralized neural responses (right hemisphere bias for global and left hemisphere bias for local processing), and the symmetry and automaticity of the level-repetition effect (priming of level-specific processing affects global and local elements equally even when global processing is dominant). A critical manipulation that affects many aspects of global vs. local selective processing is the variability of the information at the irrelevant level. When perceptual input at global and local levels is variable (changes from trial to trial), level-specific neural mechanisms are engaged in the left and right hemispheres producing robust competitive effects. These effects are reduced or eliminated when irrelevant perceptual input is invariable from trial to trial. I will present behavioural and event-related potential (ERP) data collected from normal subjects and from patients with unipolar depression or bipolar disorder while they direct attention to global vs. local elements. Aspects selective attention and control will be discussed in terms of competition from the irrelevant hierarchical level and in terms of perceptual and attentional dysfunction in mood disorders.

**Refreshments will be available
Everyone is welcome!**

For information please call the Cognitive Science Office at (716) 645-3794 or check
<http://wings.buffalo.edu/cogsci/html/2002spring.htm>