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PRESENT

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Representing objects and actions: What is special about tools?

Research involving hand-tools provides an important contribution to the study of perception-action interactions, as tools can be characterized by their functional identity ("what" they are) as well as by their graspability ("how" to grasp). Although tools likely have numerous affordances, they typically have one appropriate way to be grasped for use. I will present several studies which have aimed to investigate the contribution of knowledge about an object's function to representations for actions. This work uses both behavioral measures of grasping and functional MRI and examines real and imagined movements. Results will be discussed with respect to cognitive and neural representations for goal-directed actions and implications for individuals with motor planning deficits. "Errorless learning is best known as a retraining technique for patients with memory impairment, but it has proven useful in other populations, as well. New studies comparing errorless and errorful forms of therapy for naming in aphasia failed to demonstrate an advantage for errorless over errorful techniques. Whether feedback was given or withheld in the errorful condition did not affect the results. Moreover, neither language skill nor language profile predicted therapy outcome. Instead, the participants who responded better overall had better recognition memory, executive/problem solving skills, and monitoring ability. These factors may be essential cognitive components for providing effective monitoring and feedback to a more general learning mechanism."

Monday, July 17, 2006
4:00 p.m. to 5:00 p.m.
Place: Korman Research Pavilion
Ground Floor Conference room

Upon completion of this activity, the participant should be able to:

1. Review the theoretical background of separable but interacting systems for object recognition and visually guided actions
2. Present empirical findings from behavioral and fMRI investigations of the influence of object knowledge on tool-use.
3. Discuss relations of current work on tool-representation and motor imagery to patient populations with motor-planning deficits.

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