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- Wednesday, May 20, 2009

Visual spatial processing requirements determine task performance: Evidence from visuomotor adaptation and visual feedback processing

In my work, I investigate how visual 3D structure is represented in the brain and how that representation affects behavior.

In the first part of my talk, I will describe various ways in which 3D space could be represented. I will also introduce the idea that visible locations in 3-space are not coded in terms of distance and direction, but that they are represented in a more basic format (i.e. as 'pure' locations).

In the second part of my talk, I will report experiments that were designed to test the idea of 'pure' location. I will show that there is a behavioral advantage (i.e. lower variance) when subjects can rely on visual information about 'pure' locations. I will then present a quantitative analysis that suggests that the lower variance in 'pure' location conditions cannot be explained by the combined use of multiple distance & direction representations.

In the third part of my talk, I will focus on the distinction between viewer-centered (egocentric) and object-centered (allocentric) representations of location and I will describe experiments that suggest that these two different forms of spatial coding affect movement planning and control on a general level.

Lore Thaler
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