„Gießener Abendgespräche Kognition und Gehirn“

Mittwochs, 18 bis 20 Uhr, Raum: F9

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Way-finding and spatial cognition: from longterm storage to working memory processes

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In the cognitive graph approach to spatial memory, the recognition of places is the basic building block of larger representations of space. Visual information used in the recognition of places, i.e., landmark information, is generally thought to be associated with salient visual features or cues. In this view, object recognition precedes place recognition since recognized objects provide the evidence on which place recognition relies. In the talk, I will present experimental evidence showing that human observers are able to recognize places without referring to visual object recognition. The results will be discussed in the light of the so-called snapshot models of visual homing in insects as well as models of the hippocampal place cell system in rodents.

While much work has been invested to reveal the structure of long-term memory of space, the usage of such memory in everyday tasks is much less understood. Working memory is involved e.g., in the avoidance of dynamic obstacles, route planning from memory, and route optimization in spatially distributed tasks. In the second part of the talk, I will present experiments addressing spatial working-memory and its interaction with long-term memory.

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