Ecological Neurobiology

of Spatial Memory in Animals

York Winter

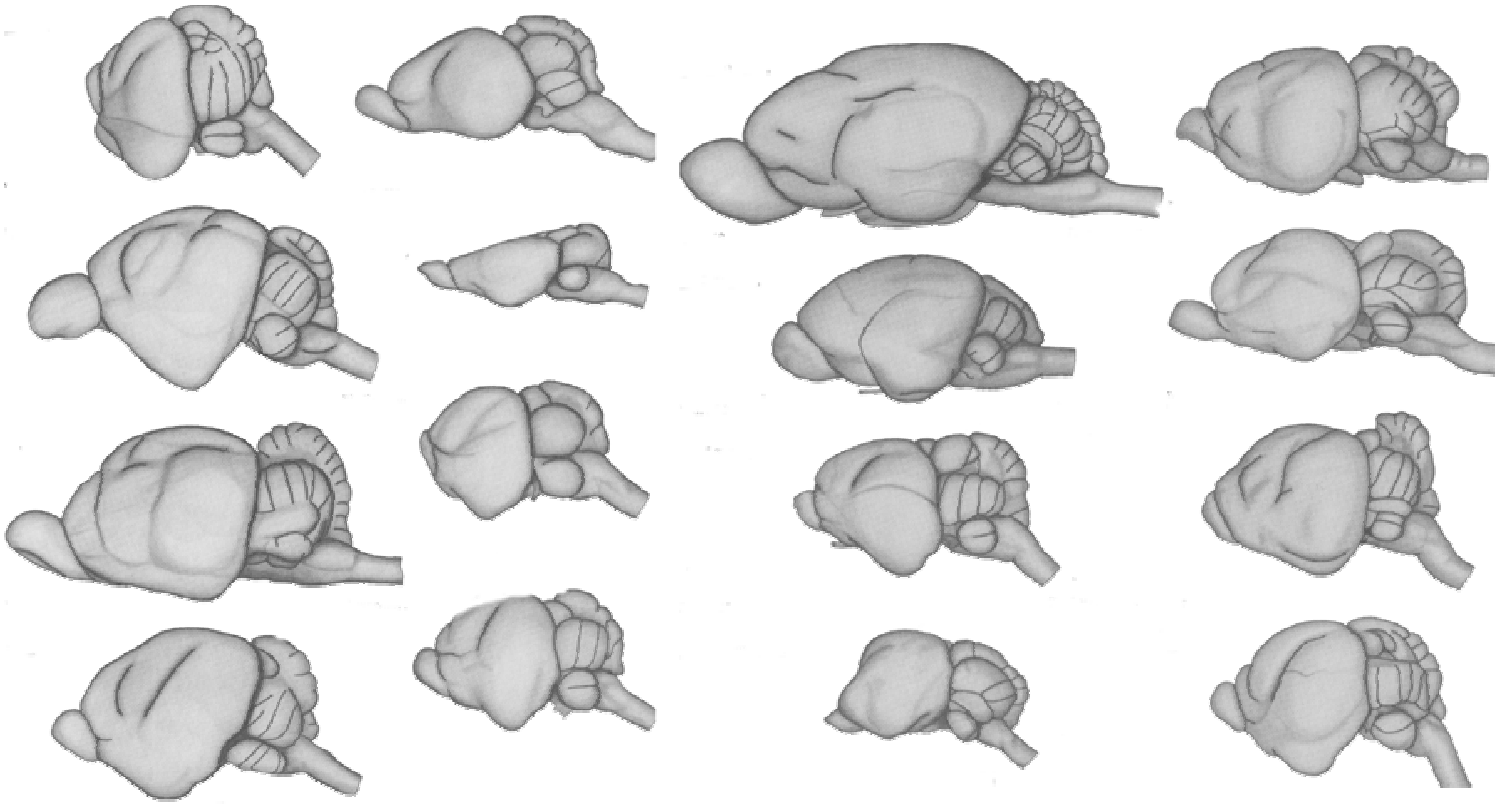
Department Biologie II der Universität München

Max-Planck Institut für Ornithologie

gefördert durch die Volkswagenstiftung

Kognitive Ökologie

Fledermausgehirne



brains of bats
from Baron et al., 1996

Research on animal behaviour

T is now written as T_i to indicate that it may be different for each patch type. The average energy from a patch is E_e .

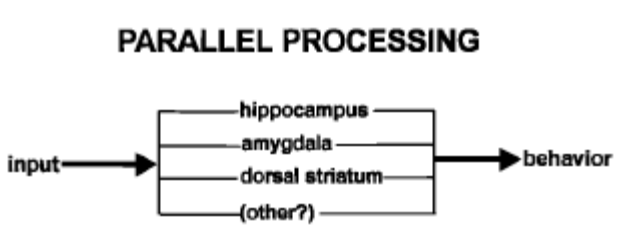
$$E_e = \sum P_i \cdot g_i(T_i).$$

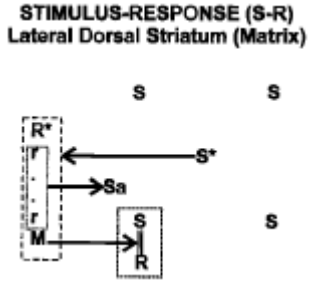
The net energy intake rate (En) is given by:

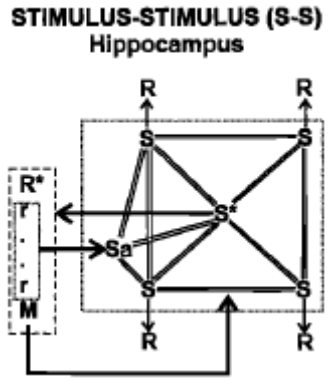
$$En = \frac{E_e - t \cdot E_T}{T_u}. \qquad (1)$$

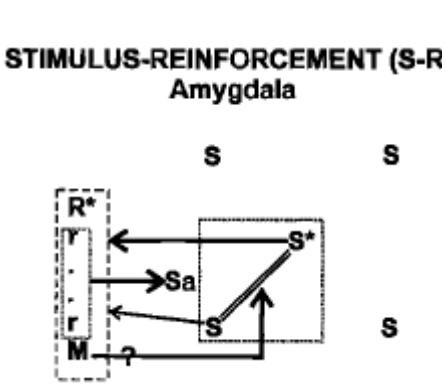
En may thus be written as

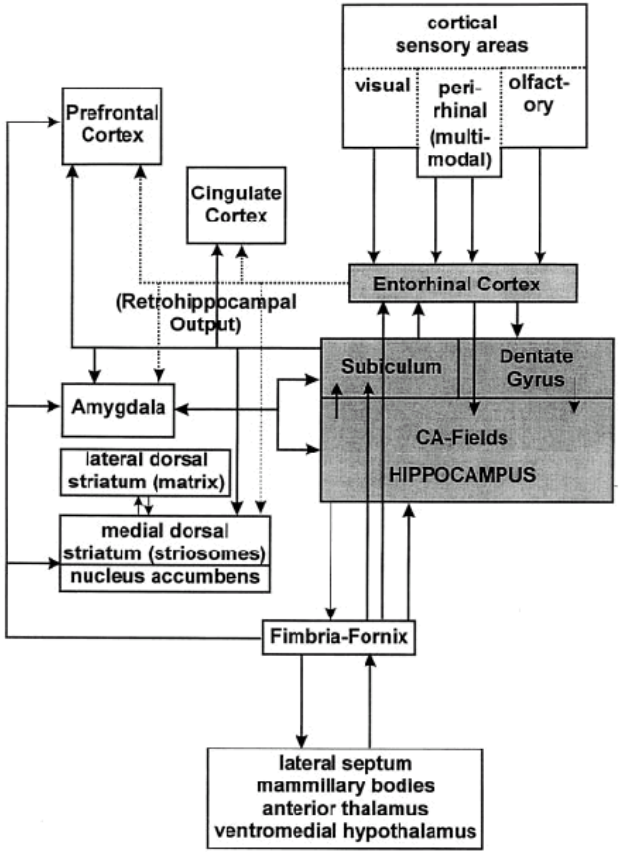
$$En = \frac{\sum P_i \cdot g_i(T_i) - t \cdot E_T}{t + \sum P_i \cdot T_i}. \qquad (2)$$









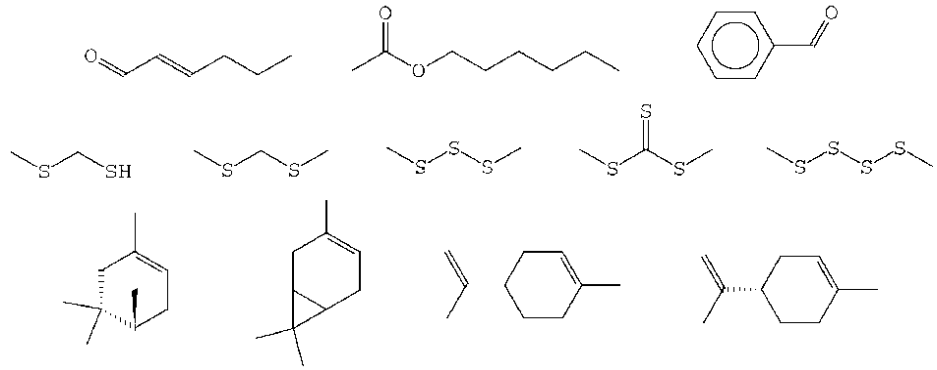


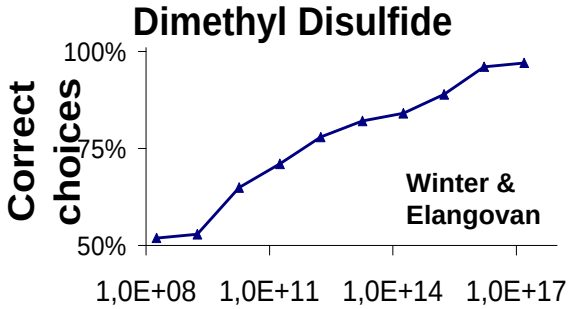
Modellorganismen: Fledermäuse und Mäuse

Blütenbesuchende Fledermäuse

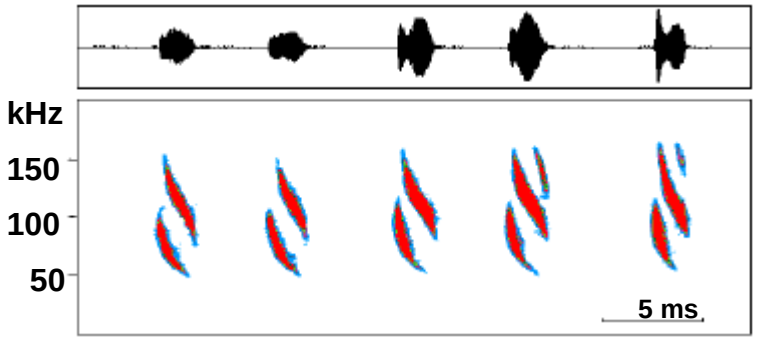
Senses for detecting flowers

Smell



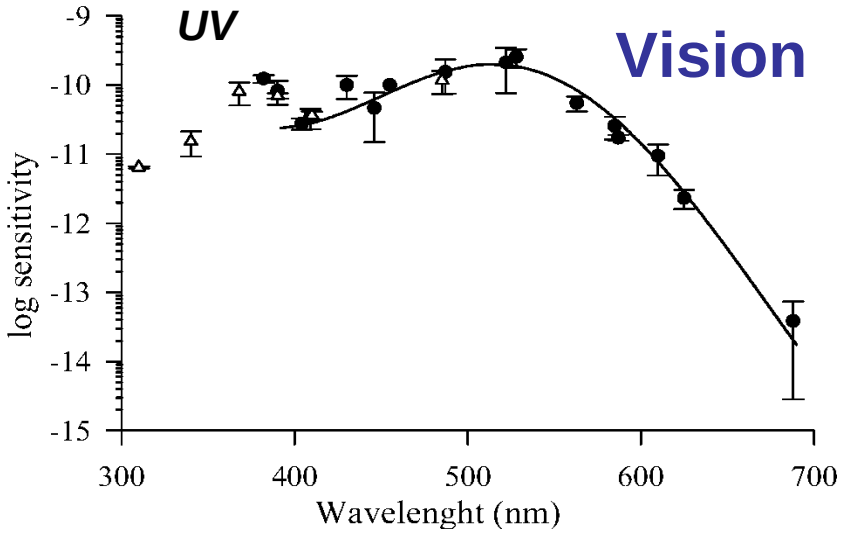


Echolocation



Lopez, Winter, v. Helversen

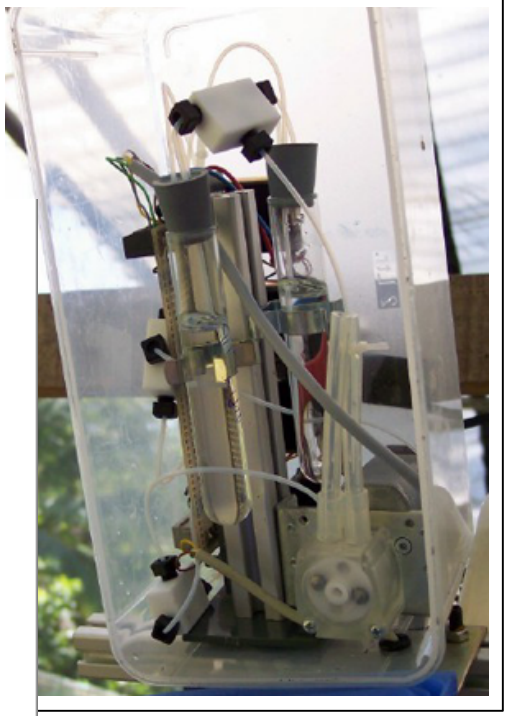
Vision

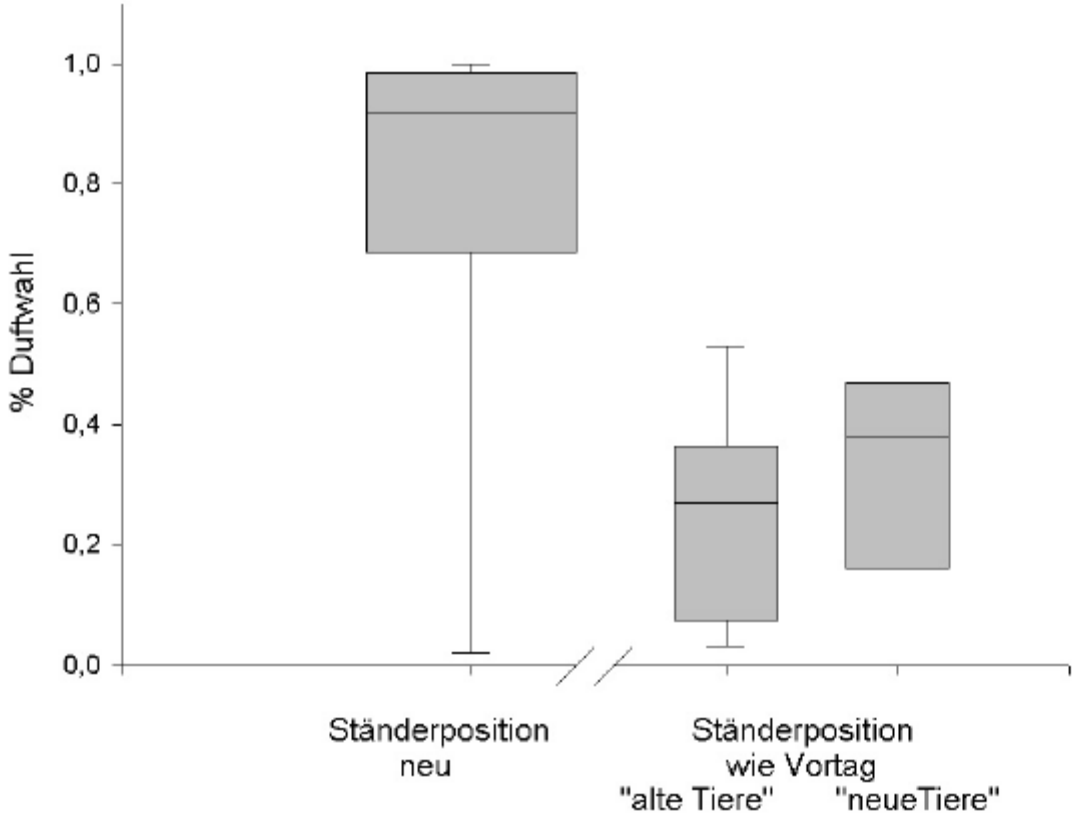


Winter et al., 2003 *Nature*

Sensory Ecology

Blütenwahl



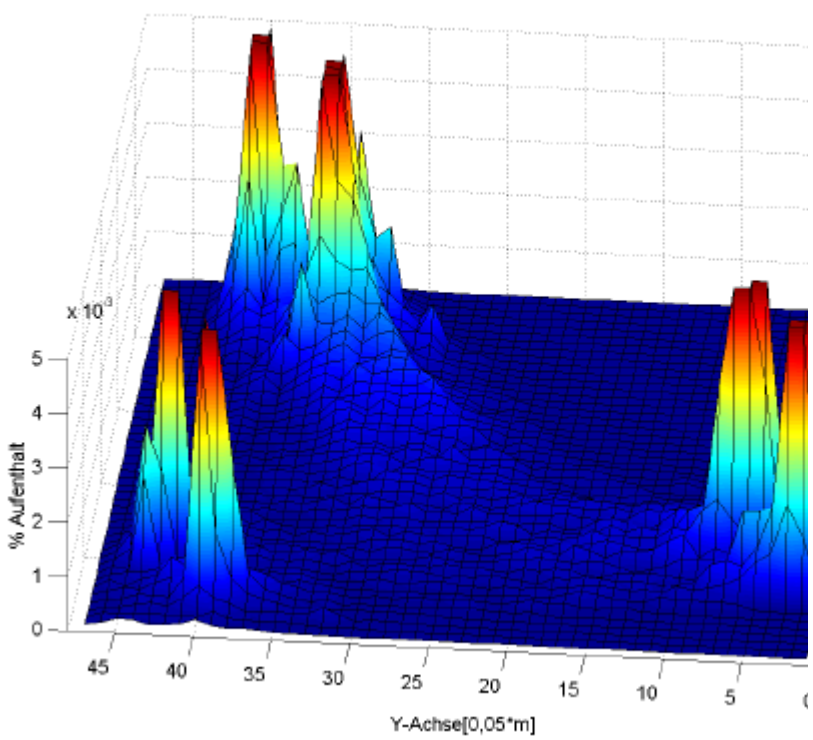


Ergebnis

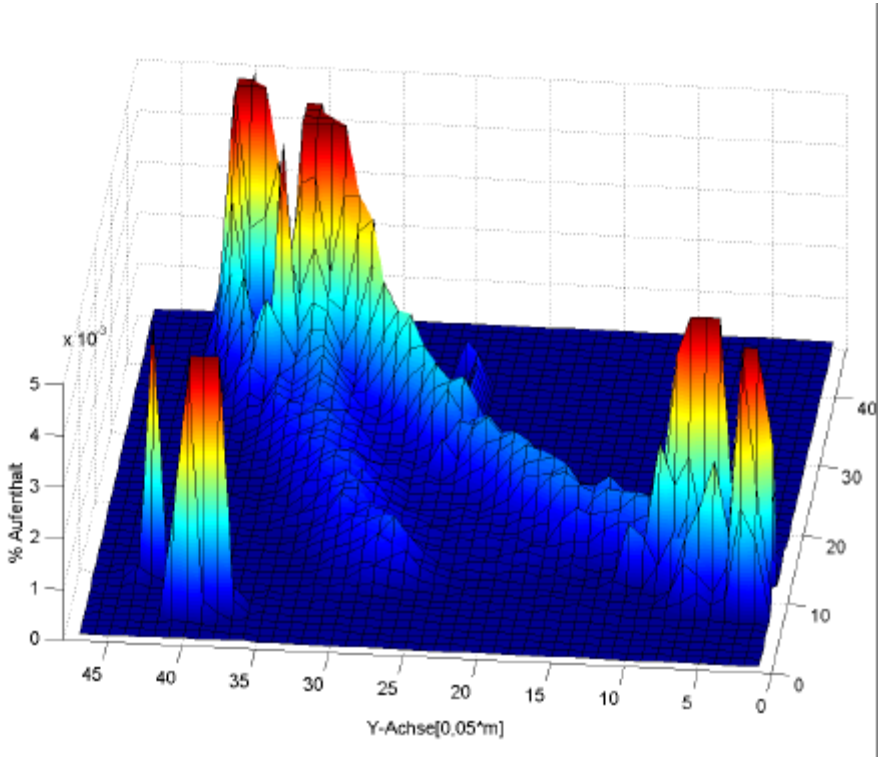
1. „Eavesdropping“
2. Duft

➢ Ortspräferenz

Ausbildung stereotyper Flugbahnen



12 h



48 h

Orientierung anhand visueller Landmarken

Blumenfledermäuse am Touchscreen