Closed loop perception: Motor-sensory convergence on object location.

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WIS

On the topic of

Closed loop perception: Motor-sensory convergence on object location

ICNC lecture hall (Silverman Bldg., Wing 3, 6th floor - Edmond J. Safra Campus) March 17, 2011, at 17:00

Abstract:
Sensory organs are controlled by efferent outputs. I will argue that movements of a sensory organ are inseparable from perception via that organ. Objects can be localized by whisking rats with a hyperacuity precision. This process takes several iterative whisking cycles in which the rat palpates the objects. I will describe the motor-sensory encoding process underlying object localization, internal representations of object location that are generated sensory (mostly thalamocortical) networks, and characteristics of motor-sensory loop behavior. I will present data from whisking rats and humans suggesting that perception of object location emerges from a convergence process that lasts several (about 4 in this case) motor-sensory cycles. These data suggest a resolution of the long standing debate between ?direct? and ?indirect? perception in the form of ?closed-loop perception'
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