

## IN BRIEF

**➤ SENSORY SYSTEMS****State dependence of olfactory perception as a function of taste cortical inactivation**

Fortis-Santiago, Y. *et al. Nature Neurosci.* 20 Dec 2009 (doi:10.1038/nn.2463)

Taste perception relies on the sense of smell; however whether taste similarly affects olfactory perception was unclear. Here the authors showed that inactivation of the taste cortex before training or during testing in an olfactory preference paradigm impaired olfactory perception in rats. Reciprocal interactions between the taste and olfactory systems probably contribute to multimodal sensory processing.

**➤ NEURONAL NETWORKS****Default network connectivity reflects the level of consciousness in non-communicative brain-damaged patients**

Vanhaudenhuyse, A. *et al. Brain* **133**, 161–171 (2010)

The default network — a collection of brain areas that are spontaneously active at rest — has been proposed to have a role in basic functions related to consciousness. The authors used functional MRI to examine connectivity in default network regions in healthy controls and brain-damaged patients with varying degrees of consciousness. The extent to which default network connectivity was reduced correlated with the degree of consciousness impairment. Thus, measurement of default network connectivity might help to assess consciousness in brain-damaged patients.

**➤ ADDICTION****Reducing the desire for cocaine with subthalamic nucleus deep brain stimulation**

Rouaud, T. *et al. Proc. Natl Acad. Sci. USA* 28 Dec 2009 (doi:10.1073/pnas.0908189107)

An ideal treatment for drug addiction would reduce the motivation to take the drug but leave motivation for natural rewards intact. Here the authors showed that deep brain stimulation (DBS) of the subthalamic nucleus (STN) reduced rats' motivation to work for cocaine, but increased their motivation to work for sucrose. Furthermore, STN DBS reduced the animals' preference for a place previously associated with cocaine and increased their preference for a place associated with sucrose. STN DBS might have beneficial effects in the treatment of cocaine addiction.

**➤ CONSCIOUSNESS****Reproducibility distinguishes conscious from nonconscious neural representations**

Schurger, A. *et al. Science* **327**, 97–99 (2010)

What distinguishes the processing of sensory information that reaches awareness from that which does not is poorly understood. The authors assessed brain activity during a perceptual test in which some stimuli were visible and other stimuli were masked, preventing them from reaching awareness. The similarity of patterns of neural activity across presentations of similar stimuli was higher when participants were aware of the stimuli, suggesting that reproducibility of neural activity patterns correlates with conscious encoding.