

## IN BRIEF

**DECISION MAKING**

Appetitive and aversive taste conditioning in a computer game influences real-world decision making and subsequent activation in insular cortex

McCabe, J. A. *et al. J. Neurosci.* **29**, 1046–1051 (2009)

Can 'virtual' experiences influence real-world behaviour? During a virtual cycling race subjects received nice- or nasty-tasting fluids in conjunction with the appearance of cyclists wearing jerseys with particular patterns. Later, the subjects were presented with chairs draped with towels bearing the same patterns. In a subsequent functional MRI session subjects who had avoided the chair corresponding to the 'aversive' pattern showed differential insula activation when viewing the two patterns. Thus, the motivating properties of a stimulus learnt in one context can influence behaviour and brain responses in another.

**NEUROIMAGING**

Predicting human resting-state functional connectivity from structural connectivity

Honey, C. J. *et al. Proc. Natl Acad. Sci. USA* **106**, 2035–2040 (2009)

Resting-state functional connectivity as measured by functional MRI (fMRI) generally correlates with structural connectivity as measured by diffusion tensor imaging (DTI). Here, the authors performed resting-state fMRI and DTI and developed a functional-connectivity model based on the DTI data. Both the fMRI and the model data showed that functional connections can exist between regions with no direct structural connections and that resting-state functional connectivity varies within and between scanning sessions and model runs. Thus, although structural connectivity greatly constrains functional connectivity, the former cannot be inferred from the latter.

**SLEEP**

Astrocytic modulation of sleep homeostasis and cognitive consequences of sleep loss

Halassa, M. M. *et al. Neuron* **61**, 213–219 (2009)

Adenosine promotes sleep, but its cellular source is unclear. To determine whether astrocyte-derived adenosine regulates sleep, the authors used transgenic mice in which astrocytic gliotransmission was suppressed. Sleep pressure was reduced both in baseline conditions and after sleep deprivation, and an adenosine A1 receptor antagonist did not suppress sleep in these mice. Moreover, unlike wild-type mice, they displayed no memory impairment after sleep deprivation. This suggests that astrocytes contribute to sleep homeostasis by releasing adenosine that acts on A1 receptors.

**NEUROPEPTIDES**

Oxytocin makes a face in memory familiar

Rimmele, U. *et al. J. Neurosci.* **29**, 38–42 (2009)

The evolutionarily highly conserved peptide oxytocin has been implicated in many social behaviours, and in non-human mammals it is crucial for social recognition. Here, the authors show that an oxytocin nasal spray improved the recognition of faces, but not of non-social stimuli, in humans. In particular, the peptide improved familiarity judgements, whereas recollection remained unaffected. Thus, in humans as in rodents, oxytocin seems to strengthen the memory of a conspecific.