

## IN BRIEF

**OSCILLATIONS**

Boosting cortical activity at beta-band frequencies slows movement in humans

Pogosyan, A. *et al. Curr. Biol.* **19**, 1–5 (2009)

Beta oscillatory activity in the motor system increases during motor suppression and decreases before and during voluntary movements, but whether it is causally associated with motor behaviour was unknown. Here, the authors induced beta oscillations using transcranial alternating-current stimulation in healthy volunteers performing a visuomotor task and found that it slowed voluntary movement. These findings provide a direct link between oscillations and behaviour and suggest that the exaggerated beta synchrony seen in people with Parkinson's disease might play a causal part in their motor impairments.

**REWARD**

Dynamic computation of incentive salience: “wanting” what was never “liked”

Tindell, A. J. *et al. J. Neurosci.* **29**, 12220–12228 (2009)

In Pavlovian conditioning, ventral pallidum neurons increase their firing in response to cues that have been paired with a reward (such as sucrose) but not cues that predict a stimulus the animal does not like (such as saline). The authors induced a state of salt depletion in rats and found that ventral pallidum neurons fired robustly to a cue predicting saline the first time the rat encountered the cue in this state. Thus, the ventral pallidum can recompute the incentive salience of a cue acutely by combining previously learnt Pavlovian associations with information about the body's current physiological state.

**PAIN**

Visually induced analgesia: seeing the body reduces pain

Longo, M. R. *et al. J. Neurosci.* **29**, 12125–12130 (2009)

Viewing one's own body increases tactile processing and can reduce chronic phantom limb pain. This study investigated whether it has more general effects on somatosensory processing. Acute pain was induced using an infrared laser on one hand in healthy volunteers while they were looking either directly at the hand or at a mirror reflection of their other hand (creating the illusion of looking at the stimulated hand). Both settings reduced subjective pain ratings and changed cortical activity in response to the pain stimulus. This analgesic effect might have therapeutic applications.

**SPATIAL AWARENESS**

Fragmentation of grid cell maps in a multicompart-ment environment

Derdikman, D. *et al. Nature Neurosci.* **12**, 1325–1332 (2009)

The firing fields of hippocampal place cells and medial entorhinal grid cells represent the environment of the animal, but the firing pattern of these cells had not been investigated in partitioned environments. The authors recorded from grid and place cells in rats moving through a hairpin maze. The firing fields of both types of cells were mostly aligned to the preceding turning point, resulting in a repetitive pattern across the arms of the maze. This suggests that each maze compartment has its own map and that place and grid cells reset their representations when an animal moves through a partitioned environment.