

## IN BRIEF

**REWARD****Fictive reward signals in the anterior cingulate cortex**

Hayden, B. Y. *et al. Science* **324**, 948–950 (2009)

**A key role for similarity in vicarious reward**

Mobbs, D. *et al. Science* **324**, 900 (2009)

Two recent papers investigated how we process rewards experienced by someone else or rewards that would have been the outcome of actions that we did not make. Hayden *et al.* recorded from neurons in the anterior cingulate cortex (ACC) of monkeys completing a choice task in which, after selection, the value of all options, including those not selected (fictive rewards), was revealed. ACC neuron responses correlated with the size of experienced rewards, fictive rewards or both, and with subsequent behavioural adjustments, suggesting that ACC neurons process both real and fictive rewards and that this information is used to guide behaviour. Mobbs *et al.* investigated the phenomenon of vicarious reward, in which individuals experience pleasure when observing other individuals gain rewards. Participants found it rewarding to watch a 'socially desirable' individual win at a card game. The level of this subjective reward correlated with activity in the ventral striatum (measured using functional MRI), and was positively correlated with the degree to which the participants rated the winning individual as similar to themselves.

**FEAR****Essential role for TRPC5 in amygdala function and fear-related behavior**

Riccio, A. *et al. Cell* **137**, 761–772 (2009)

Transient receptor potential channel 5 (TRPC5) is expressed in the amygdala, a region that regulates fear responses. The authors showed that TRPC5<sup>-/-</sup> mice exhibit reduced levels of innate fear. Interestingly, the mutant mice exhibited enhanced conditioned fear memory in certain experimental conditions. TRPC5 opening is potentiated by G protein-coupled receptors and the authors found that synaptic currents mediated by group 1 metabotropic glutamate receptors and cholecystinin 2 receptors were reduced in TRPC5<sup>-/-</sup> amygdala neurons. These results suggest that TRPC5 has a role in fear-related responses.

**ATTENTION****Mirroring of attention by neurons in macaque parietal cortex**

Shepherd, S. V. *et al. Proc. Natl Acad. Sci. USA* 22 May 2009  
(doi:10.1073/pnas.0900419106)

Humans (and monkeys) commonly direct their attention to match that of other people; however, the underlying pathways are poorly understood. The authors examined the effects of viewing a monkey face looking in a particular direction on the activity of neurons in the lateral intraparietal area (LIP) of rhesus macaques during a visual orienting task. Activity in a subset of LIP neurons was increased when the gaze of the other monkey was oriented in the preferred direction of the neuron, and this modulation occurred on a timescale consistent with the concurrent gaze-following behaviour, suggesting a role for the LIP in behavioural responses to gaze.