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► **COVER:** 'The machinery of colour vision' by Kirsten Lee, inspired by the Review on p276.



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The world is filled with colour. Over centuries the subject of colour perception has fascinated philosophers and scientists alike. The seventeenth century philosopher Locke proposed that objects themselves do not have colours, but that colour is merely a sensory experience in the perceiver. With more and more refined techniques, scientists have tried to explain the mechanisms involved in colour perception. On page 276 of this issue, Solomon and Lennie review our current knowledge of the neuronal machinery responsible for colour vision, from photoreceptors to the cerebral cortex. They also discuss outstanding questions and possible experimental approaches for finding answers.

The behaviour of social animals is shaped by their experiences with their peers. The use of punishment in human societies is thought to go beyond self- and kin-protection; it might also be used as a means to promote and preserve cooperation within social groups. The review on page 300 by Seymour, Singer and Dolan discusses the neurobiological processes involved in the motivation to punish others. They introduce a putative neurobiological model that integrates a number of distinct neural systems involved in learning and action which have a role in punishment, and discuss how systems that underlie learning may be involved in altruistic punishment.

In this issue we also present a poster on pain mechanisms sponsored by Boehringer Ingelheim (<http://www.nature.com/nrn/poster/pain>). The authors, McMahon and Bennett, review our current understanding of normal and chronic pain perception, including the molecules, signalling pathways and neuronal circuits involved. Understanding the signalling mechanisms underlying pain is essential for the design and development of agents for effective pain relief.

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