



nature publishing group



► **COVER:** 'The emergence of the nervous system' by Kirsten Lee, inspired by this month's focus on CNS evolution.



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**O**ur special focus issue this month celebrates the contribution of Darwin's ideas to our understanding of the evolution of the nervous system, featuring articles that discuss the molecular, cellular and structural changes that have contributed to CNS evolution and the functional consequences of these changes.

The idea that the nervous systems of different species evolved from a common ancestor is one of the rationales for relating the results of animal experiments to humans. Based on evo–devo studies, Pasko Rakic (page 724) discusses how genetic events may have caused species-specific expansion and elaboration of the cerebral cortex and alerts the reader to the implications of these findings when using animal models for the study of human disorders such as schizophrenia or autism.

Comparative studies might also inspire new regeneration therapies. On page 713, Tanaka and Ferretti discuss the features that allow some species but not others to regenerate their nervous system and how this ability might have emerged or been restricted through evolution.

When did synaptic proteins first arise during evolution? In a Review on page 701, Ryan and Grant explore the molecular origins of the nervous system. They describe how recent gene duplication and diversification of upstream signalling components have probably contributed to the evolution of different neural cell types.

In the Opinion article on page 754, Ken Kosik highlights the roles of microRNAs in the development of the nervous system in different species and discusses how these transcripts could drive evolutionary change.

Thanks to sponsorship by the Wellcome Trust, all articles in the focus will be free for 6 months and, together with the accompanying web focus, can be found at <http://www.nature.com/nrn/focus/evolution>.

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