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► **COVER:** 'A word in your shell-like' by Kirsten Lee, inspired by the review on p837.



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Understanding the developmental events that give rise to the huge diversity of cell types found in the vertebrate nervous system is a key challenge for neurobiologists and might provide information about how to reiterate these processes in regenerative efforts. It is increasingly being recognized that a limited number of signalling pathways are utilized at different stages and across different regions of the developing nervous system to control these cell fate decisions.

The detection of sound, balance and acceleration rely on the precise spatial arrangement of various specific cell types in the sensory epithelia of the inner ear, all of which are derived from a single region of the ectoderm. The inner ear therefore provides a useful system in which to study the molecular and cellular mechanisms that drive cell specification. Kelley's review (page 837) provides a comprehensive account of our current understanding of the extrinsic factors and signalling pathways involved in regulating the progressive restriction of cells to sensory cell fates, many of which are likely to be conserved in other sensory organs and parts of the nervous system, and outlines the remaining issues that need to be resolved.

Studying how the nervous system develops can also provide clues about how the brain has evolved into the complex structure associated with higher cognitive functions in humans. In an Opinion article (page 883), Kriegstein and colleagues discuss the proliferative events that might have contributed to the dramatic increase in cortical surface area that underlies the evolution of the highly folded primate cortex, and propose a model that could account for this expansion.

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Printed in Wales by Cambrian Printers

on acid-free paper