

## BOOK REVIEW

### Changing times in the study of human origins

#### Human Evolution through Developmental Change

N Minugh-Purvis and KJ McNamara  
*The John Hopkins University Press, Baltimore; 2002. 508 pp.*  
\$65.00, hardback. ISBN 0-8018-6732-0

*Heredity* (2003) 91, 3. doi:10.1038/sj.hdy.6800269

Reviewed by C-H Chiu

Following the rebirth of evolutionary developmental biology or 'EvoDevo' in the early 1980s, evolutionary scientists have come to recognize variation in growth and development as a major force driving the evolution of humans and other creatures. *Human Evolution through Developmental Change* highlights the theoretical and practical applications of research in the study of human heterochrony, broadly defined as the change in the timing and rate of development of individuals. Editors Nancy Minugh-Purvis and Kenneth McNamara have organized the text into three parts with chapters contributed by a group of highly respected researchers in biology, paleoanthropology, and paleontology. Part 1 'Evolution and Development' and Part 2 'The Evolution of Hominid Life-History Patterns' consider the theoretical applications of heterochronic models to the hominid fossil record and how developmental change relates to various aspects of hominid life history. Part 3 'The Evolution of Hominid Development' provides a chronology of heterochronic change in the hominid fossil

record spanning from the Pliocene to the late Pleistocene. Professor F Clark Howell has contributed an excellent Foreword.

It is clear from this volume that there are subtle but significant differences in the definitions of heterochrony and interpretations of heterochronic processes. Hence, the reader is left with the impression that there is much work ahead in the usage of a heterochronic perspective for investigating the developmental basis for the evolution of humanity. On a positive note, the extensive record of morphologic change in the fossil record reveals the remarkably diverse heritage of living hominins and generates testable hypotheses for the evolution of the human body plan and life-history patterns.

Overall, this volume is a timely contribution to an emerging field in which comparative primate genomics, modern developmental genetics, and embryology (of primarily model organisms) provide the foundation on which to build innovative studies of genotype-phenotype relations in human origins. *Human Evolution through Developmental Change* will be a valuable resource for scientists interested in understanding and interpreting the developmental basis for the diversity and adaptations of extant and fossil hominins.

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