

for the multiple cores. This important element is lacking in Scott's argument about Levallois as the ideal portable toolkit.

Chapter 7 serves as a conclusion while focusing on Neanderthal behaviour and demographics. It is a nice digest of the settlement prehistory of Britain through the entire Middle Palaeolithic. Scott covers far-ranging topics such as why Britain was not re-colonised in MIS 6-5, the spread of the mammoth steppe, and the handaxe technology that came after the heyday of Levallois. Scott argues hominin populations reached their peak at MIS 8-7, then declined as the climate warmed, but did not crash. She suggests one reason might be that flint was easier to find during colder times. In interglacials there were fewer exposures, as exemplified by examples of sites that were abandoned when "raw material outcrops were masked by progressive sedimentation" (page 191). This is a logical remark. Considering hominins probably relied entirely on flint for sharp cutting tools, they would naturally have left the country when no more flint was available. Was Levallois a clever way to maximise dwindling flint resources?

Becoming Neanderthals is augmented by occasional nice extras, such as photos of John Allen Brown and Spurrell from the 1880s, stratigraphy charts, and exact dates of Brown's artefact collecting events. The summary table of results for all sites on pages 183-184 is excellent. One of the strengths of "Becoming Neanderthals" is the impressive archive work Scott has achieved on the written records of old British excavations.

There are few negative points to mention, except that it would be useful to subdivide the Table of Contents into site sub-sections. Since chapters 3 and 4 are more like data catalogues, they will most likely be used to find information, not read in sequence. The Appendix contains details of Scott's methodology and nice drawings, but no actual raw data. The Index is broad but does not cover the appendix as promised (at least, not for "tranchet"). A reference is frustratingly missing from the bibliography (White & Jacobi 2002). The site of Cotenin (or Contenin) is not shown in figure 5.1 as stated (page 194).

Occasionally Scott lets her scientific rigour lapse. She claims (page 18): "A large collection of material from Bapchild, Kent is clearly heavily reworked (personal observation)." If this is true then it should be published, as otherwise this is not a scientific way to exclude an assemblage. Furthermore, Scott does not follow her own criteria for site selection; for instance, she accepts "likely dating" (page 19) and sites with no environmental information in the deposits (pages 36 and 69) even though these go against her selection criteria (pages 17-18). In the display of data there is inappropriate use of line graphs to show numbers of pieces for each grouping of maximum dimensions (e.g. page 90).

Overall, "Becoming Neanderthals" is an impressive

piece of work which will be useful to students and professionals. Scott gives enough information on context for readers to make up their own minds about site stratigraphy. For readers seeking detailed data on specific assemblages, these are provided. The book is dedicated to Roger Jacobi, and I believe it is a very worthy tribute to his life and work.

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### Homo Symbolicus: The Dawn of Language, Imagination and Spirituality

Christopher J. Henshilwood & Francesco d'Errico (eds.), John Benjamins Publishing Company, Amsterdam & Philadelphia, 2011, 237 pages, Hardback, € 99.00, ISBN 978 90 272 1189 7

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Interdisciplinary trends in evolutionary sciences are quickly reshaping the focal lens from which archaeologists peer into the past. Integration with disciplines including cognitive science, psychology, neuroscience and ethology has dramatically increased our ability to retrieve information about the evolution of *Homo sapiens*. While this trend has expanded the scientific horizons of archaeology, it has also highlighted enormous difficulties in constructing unified theories to interpret the fragmented remains of our past. There is perhaps no better example of this challenge in archaeological research than the contentious debate surrounding the role of "symbolism" in the rise of human modernity. Symbolism as a behavioral and cognitive manifestation has long been held as a hallmark of humanity, defining the uniqueness of our species, although recent archaeological and ethological research has challenged such claims. As a result, archaeologists have been hard pressed to discuss wider issues of symbolism and cognition outside the modern human arena. Nonetheless, *Homo Symbolicus* spearheads these problems in adjoining various interdisciplinary reflections upon the "symbolic conundrum", and in doing so develops a unique

understanding of the emergence of symbolism from a multi-disciplinary point of view.

The book begins with an insightful review of issues surrounding symbolism from a primatological outlook. McGrew (Chapter 1), and Savage-Rumbaugh and Fields (Chapter 2) highlight the "Homo-centric" nature of research perspectives centering upon symbolism, and the challenges of considering the evolution of symbolic capacities from a wider comparative ethological viewpoint. These chapters, in part, contest the usefulness of the *Homo symbolicus* concept, most notably McGrew who details culturally-driven communication and behaviours within chimp populations, and the need to consider *Pan symbolicus* in these debates. Furthermore, Savage-Rumbaugh and Fields provide an in-depth review of how DNA and language are not likely to be the cornerstones of human uniqueness. Instead they propose that the divide between great apes and modern humans may lie in the motor systems of human infants, which are inherently structured to explore self/object relations from birth, unlike great apes. These motor tendencies of human infants are further structured by a robust socio-cultural scaffold that promotes reflection upon self-agency during the ontogeny of consciousness, which may account for differences in linguistic and symbolic capacities between *Pan* and *Homo*.

The volume's archaeological focus is met in d'Errico and Henshilwood's (Chapter 3) review of the current state of knowledge regarding the Palaeolithic origins of symbolism. A succinct, yet comprehensive overview of symbolic remains from Africa and Eurasia are presented in conjuncture with the latest problems plaguing our understanding of their development, including climate change. They also consider the highly debated issue of the "Symbolic Neanderthal" (p. 50), which stands to further extend the capacity for symbolism beyond *Homo sapiens*. Zilhão (Chapter 6) presents extensive evidence to support the "modern" range of Neanderthal symbolic and cognitive capacities. He correlates genetic evidence to support a multi-species argument for the emergence of symbolism that refutes the "hard-wiring" hypothesis supported by the long-standing Human Revolution model. Furthermore, Pettitt (Chapter 8) attempts to deconstruct the concept of "symbolic behavior" in archaeology and presents a detailed analysis of Middle and Upper Palaeolithic burial practices, which has been perceived as another defining characteristic of human modernity. However, Pettitt outlines the antiquity of social interactions with the dead and burial that extends well beyond our species, providing more strength to the multi-species model of symbolism.

Focusing upon modern human archaeology, Henshilwood and d'Errico (Chapter 4) and Wadley (Chapter 5) present intriguing arguments of how symbolic capacities can be observed in Middle Stone Age (MSA) personal ornaments and compound

adhesive manufacturing practices, respectively. Henshilwood and d'Errico examine the symbolic meanings embedded within engraved materials from the Still Bay levels at Blombos Cave (BBC) and the Howiesons Poort levels at Diepkloof Rock Shelter (DRS). They suggest that these engraved goods functioned on different levels of symbolic communication based upon the quantity of engraved materials and frequency of motifs, where BBC engraved ochre pieces were imbued with personal meanings, while DRS engraved ostrich eggs shells operated on a cultural scale. Wadley describes the complex cognitive competencies of modern human populations from Sibudu Cave necessary for the hafting of segments, or small, crescent-shaped stone tools. Her personal experience with manufacturing these adhesives led to the realization that the multi-level operations involved require complex cognitive capacities to manage such tasks. Wadley employs Wynn and Coolidge's (see e.g. Coolidge & Wynn 2005) model of "enhanced working memory" to structure an argument supporting the modern nature of the cognitive capacities underlying adhesive manufacturing in the MSA, including abstraction and mental rotation.

The interdisciplinary discussion of symbolism begins with Wilson's (Chapter 7) argument for the interaction of cognition, culture and cooperation as an essential component for the evolution of symbolic behaviours and language. His focus upon the suppression of competition within the hominin lineage as a driving factor in the emergence of symbolism presents a unique view from an archaeological standpoint, which may be corroborated by quantitative trends in sexual dimorphism and morphological adaptations related to tool use. Ellis (Chapter 9) focuses upon how the structure of language endows modern humans with distinct propensities for meaning-making and symbolism, which he argues as developing from the interaction between sensory, emotional and cognitive capacities. Within the framework of ontogenetic development, these internal (emotion and cognition) and external (social and natural environments) factors influence the structuring of symbolically-laden abilities that are crucial to language, including communication, theory-of-mind and recursion. Dubreuil (Chapter 10) perhaps provides the most archaeologically significant argument within the interdisciplinary chapters. He reviews important issues surrounding the use of middle range theories in archaeology that attempt to account for complex cognition and behavior linked to the emergence of symbolism within the hominin lineage. Dealing with the current models focused upon recursive syntax, working memory and theory-of-mind, he outlines a critical problem in cognitive archaeological theory, in which these capacities are suggested as the cornerstones of modern human cognition and behavior, yet they all rely upon similar neuro-cognitive structures. The problem thus being,

how do we separate one capacity from the other and prove one as the basis of modern symbolic capabilities? Dubreuil goes on to propose a new framework for investigating these issues that focuses upon comparative cognitive, developmental neuroscience and palaeo-neurological research, which can develop specific agendas for testing current cognitive models in archaeology. Lastly, Barrett (Chapter 11) closes the volume with a discussion that focuses upon the nature of meta-representation as a key for the development of *Homo symbolicus* and *Homo religiosus*. His perspective of these issues stems from the cognitive science of religion paradigm, in which he outlines current cultural and adaptational views for the emergence of religious practices. In developing an argument for the concurrent evolution of capacities for modern human behavior and religious beliefs and practices, Barrett proposes that the "lynch-pin" of symbolism lies in a *meta-representational theory-of-mind*, or the ability to think about another's thoughts, which opens new avenues for cognitive, linguistic and cultural expressions underlying religion.

The true strength of the volume is found in its interdisciplinary focus, which appeals to a common interest of researchers from different fields to gain perspective from the variety of theories and methods employed to examine the symbolic origins of language, imagination and spirituality. The intention of the volume is to discuss the wide-range of issues surrounding the emergence of symbolism from the multi-disciplinary viewpoint, which is well-developed within its chapters, and yet to maintain a common thread in focusing upon how symbolism has shaped the human condition. This goal is certainly achieved in „Homo Symbolicus“, that further focuses upon integrating biological, philosophical and psychological perspectives with archaeological research, which creates a critical review of the problems and advances for students of the evolutionary sciences who are interested in the issue of symbolism. However, the volume is not without its challenges, which might be expected of any book attempting to bring together such a wide range of disciplines to discuss a common topic (especially one as contested as symbolism). One significant issue that the volume neglects to discuss in earnest is how to define the concept of "symbolism" that might apply throughout the different disciplinary perspectives presented within its chapters. Issues such as the role of language and various cognitive capacities as either central or marginal to the capacity of symbolism make this task difficult, and as a result, each chapter seems to redefine the concepts of "symbolism" from the previous. This leaves the reader to interpret the caveats that each author emphasizes as the critical features for capacity for symbolism, which can range from very specific linguistic to cognitive to neurological structures. This also creates an unclear picture of how the primatological perspectives (which downplay the role of language

and cognition in modern human symbolism), archaeological perspectives (which primarily focus upon material culture issues) and interdisciplinary perspectives (which focus upon the linguistic and psychological uniqueness of modern humans) actually interrelate in discussing and bridging the theoretical disparities that exist between these frameworks. The last issue of the volume is its organizational structure, which presents no clear bounds between chapters written from different disciplinary viewpoints. Sections demarcating primatological, archaeological and interdisciplinary (biological, philosophical and psychological) chapters might bring about a more coherent outlook in preparing the reader for how these sections might conceptualize and define symbolism in terms of their field of study. Despite these challenges, „Homo Symbolicus“ presents a unique multi-disciplinary background for any scholar interested in the wealth of aspects surrounding the critical issue of how the capacity for symbolism has shaped humanity.

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#### Prehistoric minds: human origins as a cultural artefact, 1780-2010.

Matthew D. Eddy (ed.), *Notes & Records of the Royal Society* 65 (1), Special Issue, 2011, 98 pages.

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*Ceci n'est pas une recension* – this is not a book review. Instead, this review treats a collection of one editorial and five papers first delivered at a conference held under the auspices of the British Society for the History of Science at the Royal Society in London late in December 2009, the much-celebrated bicentennial of the birth of Charles Darwin and the publication of his *Origin*. The papers are published as a special issue of the Royal Society's very own journal dedicated to the history of science, the *Notes & Records of the Royal Society*. Not all the presentations given at that conference are represented in this special issue, but those that are – by Matthew Eddy, Paul Pettitt and Mark White, Clive Gamble and Theodora Moutsiou, Marianne Sommer, and Peter Kjærsgaard – make for