



## Book Review

*The Dawn of Human Culture* by Richard Klein and Blake Edgar. New York: John Wiley and Sons, Inc. 288 pages. ISBN 0-471-25252-2.

Reviewed by John Hawks

Often, a student of prehistory encounters, sometime during his or her career, an incongruous or otherwise striking observation that may serve to crystallize a wide range of ideas into a new structure for examining the scattered evidence of the past. The observations that actually spark such flashes of insight are rarely identified in scientific papers, and indeed they may remain entirely subconscious. But occasionally an anecdote during a lecture, or a subtle mention in a conversation may leave a whisper about the source of an idea in the ear of an attentive listener. Rarely are such observations given the credit they are due, but just as a skilled scientist may use one to structure a research program, a skilled author may take such an insight to structure his prose.

In their book *The Dawn of Human Culture*, Richard Klein and Blake Edgar lead with descriptions of the archaeology of two sites, both in Africa, which form the kind of contrast that research programs are built upon. The first, Enkapune Ya Moto in central Kenya, provides 40,000 year-old evidence of ostrich eggshell beads. These beads, among the earliest instances of personal decoration in the archaeological record, document an element of the mind that Klein and Edgar consider to be

uniquely human: cognitive ability to communicate and interpret symbols. In contrast, the Klasies River Mouth caves have produced evidence of some of the earliest people to have modern human anatomies such as the absence of a browridge and the presence of a strong chin, at 100,000 years old. But these ancient people left no objects that could be inferred to have a symbolic function—only the tools and bones that were the refuse of their everyday lives. Based on this contrast, Klein and Edgar pose the question, why should it be that the earliest humans left no evidence of behaviors that are so common today? It is this apparent contradiction that they set out to resolve, ultimately with the hypothesis that most human cultural behavior was the result of a sudden change in the human brain that triggered symbolic language.

After the attention-getting introduction, the book begins a leisurely pace down a well-traveled road, describing what is now known about the early fossil record of hominids. In the early chapters, the book follows a historical chronology rather than a natural one, focusing on how interpretations have changed with subsequent discoveries. This is helpful in understanding why approaches that once were in fa-

vor are now rejected, but has the disadvantage of presenting each subsequent find as “a new twist on an old tale.” The material is largely a rehash of textbook introductions to human evolution—including Klein’s own (1999). But parts of these chapters sparkle with vivid descriptions of very recent discoveries such as the *Sahelanthropus* skull, the as-yet-undescribed Aramis *Ardipithecus* skeleton, the new *Kenyanthropus* remains, and the Dmanisi hominids from Georgia. Unlike the now-well-known finds of the 1970’s, these actually do provide “new twists” in a real sense.

Of course the bulk of attention in these early chapters goes to the toolmakers, and considerations about just which of the hominids those might have been. Klein, as a student of material culture, is in his element when talking about stone tools and their manufacture, and this technical emphasis shines through in many parts of the book. However, the emphasis is perhaps a little too narrow, in that it privileges stone tool manufacture over almost every other possible manifestation of culture. No mention is made of food sharing, foraging strategies, group sizes, possible intervention in the birth process, or many other manifestations of culture that have been suggested to be coincident with the appearance of *Homo*. Whether or not any of these possible attributes of early cultures can be substantiated by archaeological or fossil evidence would seem to be of considerable relevance to the text. Likewise, the text does not discuss cultures in other primate species (Whiten, 1999; van Schaik, 2003), which serve at least as a baseline for human cultural capabilities if not more extensively as a model for thinking about culture itself.

I assigned the book in an undergraduate seminar, intending it as both a brief introduction to the human archaeological and fossil record and as a discussion of Klein’s ideas about modern human behavioral origins. On this front, it did not disappoint: the students found the book eminently readable and took away a basic understanding of the fossil and archaeo-

logical record.

But the most interesting aspect of the students’ discussion after reading the book was the realization that the book did not at any point give a clear indication of what culture actually is—to the point that “culture” is not itself an index entry. My class used this omission to great effect, with a long and considered discussion about the nature of culture and its relationship to the mind. The assumption of the book appears to be that “culture” is synonymous with symbolic language, insofar as the authors believe that the major cultural differences between Middle and Upper Paleolithic humans all depend uniquely upon the kinds of complex interactions that language allows. This assumption leaves the expectation that relatively little about early humans was culturally interesting, other than their tool use, and Klein and Edgar are content to judge that between 1.8 million and 500,000 years ago, humans were “tall, strong, and stupid” (p. 99, quoting Alan Walker).

Chapters 5, 6, and 7, which discuss archaic humans, Neandertals, and early modern humans, fall into an area much more central to Klein’s hypothesis about cultural origins. By the Middle Pleistocene, human fossils show clear signs of increasing mental sophistication, most notable in their increasing brain sizes, but also evidenced by new toolmaking techniques, range expansions into temperate and ultimately periglacial climates, increased control of fire, and cannibalism. Here, the text presents the increasing archaeological and fossil record by vignettes, including rich descriptions of the Sima de los Huesos fossil site, the discovery of ancient DNA from Neandertal remains, and the discovery of the Lagar Velho skeleton in Portugal. Necessarily, the short presentation glosses over much of the complexity of the archaeological and fossil records, but those subjects that receive more detailed treatment are chosen well to give as balanced a view as possible of what continues to be found.

The provocative phrase on the dust jacket is

“a bold new theory on what sparked the ‘big bang’ of human consciousness.” Readers may be disappointed to find that the “bold new theory,” after a mention in chapter 1 and brief teasers elsewhere, is not actually discussed until page 270 (out of 273). This “bold new theory” is the hypothesis that the origin of human culture was the result of “a fortuitous mutation that promoted the fully modern brain” (p. 270). Klein and Edgar speculate, but do not press the argument, that this change allowed fully human language to develop. A recent report of selection on the *FOXP2* gene, whose worldwide variation in humans appears to date to the Late Pleistocene (Enard et al., 2002) is the kind of event that would appear to fit this hypothesis, and Klein and Edgar note an earlier paper on this gene. In their view, the archaeological changes present in the early Upper Paleolithic (UP, in Europe) and Late Stone Age (LSA, in Africa) constitute a truly revolutionary change in human behavior—the appearance, almost out of nothing, of symbols, complex social interactions, parietal (cave wall) art, string, fabric, and great population growth. Although they do not specify why they believe that selection for a single mutation—rather than some more complicated history of natural selection on many genes—was the cause of this revolution, it seems likely that they felt the rapidity of the adoption of UP/LSA archaeological elements to be inconsistent with any but the simplest evolutionary change.

Klein and Edgar do a fair job of presenting an account of human evolution that would allow a single-mutation model of cultural evolution to be potentially explanatory. But their prose, especially in the later chapters, does little to quell the impression that their account might be oversimplifying a rather complex Middle and Late Pleistocene evolutionary record. Especially when talking about the Neandertals, but also in the flanking chapters, after an initial presentation of cultural deficiency, the discussion devolves into a fairly long list of possible objections to that description, and their re-

sponses to them. For Neandertals, the list includes the preservation of rare art objects, a possible Mousterian flute, evidence for Neandertal survival and interbreeding with modern humans, evidence for Neandertal speech ability, burial and possible ritual behavior, and the wholesale adoption or invention by Neandertals of UP industries. If such claims could be believed, they would of course deliver a wilting assault on the premise of Neandertal cultural impotence. In particular, one wonders just what heuristic value can be found in assuming that the Mousterian/UP archaeological difference was linked to the biological Neandertal/modern human difference if, as they point out, late Neandertals made UP tools and early modern humans made Mousterian tools. The arbitrary categorization of these anatomically modern humans as “near-modern” on the basis of their lack of UP/LSA cultural elements may focus the issue on behavior instead of anatomy, but if behavioral evolution could occur in early modern humans, then why not in Neandertals as well?

Klein and Edgar do perhaps the ablest job possible of answering these areas of evidence about cultural abilities in morphologically archaic humans, including Neandertals. Each receives appropriate attention, although not every question is answered. Nevertheless, these chapters sometimes take on the appearance of a long sequence of special pleading. Especially noticeable is that the authors frequently attribute various evidentiary problems to evidence that contradicts their claims but never to evidence that supports them. From an archaeological perspective, they go to some length to explain difficulties in dating, site formation complexities such as bioturbation, and taphonomic processes that affect artifacts, but always in connection with arguing against contrary evidence. Readers for whom these concepts are new will be impressed with the many difficulties that face paleoanthropologists. Those already familiar with the sites and their difficulties may be less impressed by their clear trend toward disbelieving

evidence that disputes their claims.

In summary, *The Dawn of Human Culture* is a strong presentation of Klein's perspective on the fossil and archaeological records. It clearly discusses and reflects those aspects that have been important in creating the widespread view of a UP/LSA revolution in behavior. The hypothesis most consistently argued by Klein elsewhere—that early modern humans had not attained behavioral modernity—is in many ways the theme of the book, established by the contrasting sites presented in the first chapter. The descriptions of human evolution in most of the book support the hypothesis by establishing a slow pace for most behavioral changes and the lack of clear links between them and anatomical evolution. But in this case, the presence of a strong organizing principle has led to a sometimes-frustrating tunnel vision, which rejects a more expansive view of human and animal cultural development, and dismisses many of the most interesting aspects of human behavior prior to the UP/LSA.

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