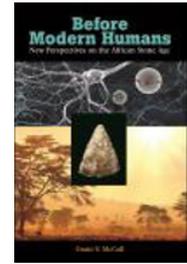

Book Review



Before Modern Humans: New Perspectives on the African Stone Age. By Grant S. McCall. Left Coast Press, Walnut Creek, California, 2014, 391 pp. ISBN 9781611322224. US\$ 99.00 (Hardcover).

Before Modern Humans ranges widely over major issues in the archaeology of human origins. Though the title suggests an exclusively African focus, McCall discusses evidence and issues from a wider geographic range. McCall is a leading advocate of an “organizational” approach to prehistory. Rather than trying to construct quasi-historical narratives of human evolution in which stone tool industries are stand-ins for actual evolutionary actors, McCall and scholars like him focus on the organizational properties of particular behaviors, such as toolmaking, subsistence choices, settlement patterns and the like. Working from principles derived from comparative methods in ethology and ethnography, they develop models for the strategic costs and benefits influencing those behaviors, and then test hypotheses about behavioral change and variability. *Before Modern Humans* is an example of this approach writ large.

The book discusses many issues, but the two to which McCall devotes the most attention are differences between Earlier and Middle Stone Age lithic assemblages, the “scavenging/hunting” debate about Lower and Middle Pleistocene zooarchaeological assemblages.

Throughout much of Africa, the period 0.2–0.3 Ma marks an inflection point in the stone tool evidence. Large accumulations of handaxes, other relatively thick and heavy stone tools are first augmented, then replaced, by stone tool assemblages featuring lighter and more carefully retouched flake tools. Unlike their predecessors, these later, Middle Stone Age assemblages often feature hearths, refitting stone tool knapping debris, cut-marked animal bones, and other evidence of prolonged habitation. McCall uses a multivariate statistical analysis of stone tool assemblages from either side of this inflection point (Olorgesailie, the Namibian Gemsbok sites, Gademotta/Kulkuletti, and Omo Kibish) to argue that differences between Earlier

and Middle Stone Age assemblages reflect an earlier pattern of “routed foraging” — in which hominins dropped stone tools along habitual pathways at the point when the costs of transporting them exceeded the benefits (*i.e.*, as they approached raw material sources). He contrasts this with a more familiar pattern dating to recent contexts in which tools were brought to and from stable residential sites from which hominins engaged in central place foraging.

The second major issue, the hunting/scavenging debate originally arose in the early 1980s over conflicting interpretations over Olduvai Gorge site FLK 22. Mary Leakey, Glynn Isaac and others interpreted the site as a “home base” much like those made by recent human hunter-gatherers. As at such sites in East Africa today, the faunal remains there were seen as primarily the results of hunting. (In fact, East African hunter-gatherers, it turns out, do a fair amount of scavenging, driving lions from their kills.) Lewis Binford challenged this interpretation, arguing instead that FLK 22 resulted from hominins scavenging carnivore kills. There followed several decades worth of actualistic research into how various parts of animal skeletons came to be preserved (or not) and into the meaning of variation in stone tool cut-marks and carnivore tooth marks on bone. Zooarchaeological analysis became increasingly quantitative, and to non-specialists increasingly impenetrable. McCall correctly notes that the subtext for this debate occurred against the backdrop of the “Washburn-Isaac Synthesis”. Named (by McCall) for Berkeley anthropologists, Sherwood Washburn and Glynn Isaac, this synthesis envisioned earlier hominins as possessing such derived human behavioral characteristics as central place foraging, division of labor, and food-sharing among non-kin. Critics of this synthesis, such as Binford, later joined by Richard Potts and others, argued these institutions were being uncritically projected back into remote

antiquity. The issue of whether the FLK 22 bones arrived from hunting or scavenging was crucial to this debate, because it was generally believed that scavenging was less cognitively demanding than hunting and that it would not have provided enough food to be worth transporting, much less sharing. McCall's analysis of faunal remains from FLK 22 and other sites, including bone assemblages accumulated by recent humans shows that there is no stereotyped pattern of hunted vs. scavenged assemblages, but rather a complexly-structured continuum of variation. The long and short of this analysis is that there is evidence that earlier hominins, and more recent humans, sought and gained regular access to high-energy-return food sources, chiefly medium-sized herbivores from earliest times onwards. Characteristics of the zooarchaeological "fallout" for hominin meat/fat procurement probably varied dynamically with environmental variables (temperature, humidity), community ecology (competition with non-human carnivores) and with hominin population densities. McCall attributes increases in quantities of smaller prey and increased dependence on technologically-assisted predation (projectile weapons, traps, *etc.*) from Later Pleistocene times onwards as a kind of intensification, as efforts to wrest ever more energy from resource-depleted catchments around favored habitation sites.

There is a lot to like in this book, and more than one can squeeze into a short review such as this one. I liked that McCall provides historical context for these debates. Human origins research is a small field populated at times by outsized personalities. A student entering the field today would have trouble understanding the ferocity with which some of these issues are debated at scientific meetings without reviewing how they developed over the last fifty years. I also liked that at each point, McCall stresses the importance of variability, not just variability in the patterning of the evidence but also variability in hominin behavior. We do not know to what degree earlier hominins possessed a capacity for behavioral variability equivalent to our own, but when we construct models for hominin behavior on geological/evolutionary timescales, about the only safe assumption to make is that hominin behavior varied.

I have really only two criticisms about *Before Modern Humans*. First, the text frequently lapses into the first person ("I argue..."). There is nothing wrong with doing this occasionally, as a rhetorical flourish, but with repeated use, it gives one the impression that the author is either claiming an idea as their own or taking a partisan stand on an issue rather than urging one to judge the facts on their own merits. In a word,

he appears to be telling rather than showing. Other than this, the text flows smoothly. The use of the term "modern humans" in the title is surprising. McCall does an excellent job in showing how dichotomizing patterns of human behavior (*e.g.*, hunting vs. scavenging) conceals complex patterns of behavioral variability, and yet the title endorses a dichotomous framework for human evolution ("archaic" vs. "modern" humans), a framework whose theoretical weaknesses are increasingly apparent to those of us who work in Africa and on the earlier phases of the archaeological record. The disconnect here is puzzling, for the book's final paragraph is a resounding call to "go beyond" debates about behavioral modernity to examine the evolutionary roots of human behavioral variability.

Before Modern Humans is also noteworthy as marking a change in how archaeologists are engaged in human origins research. Late 19th and 20th Century archaeologists were, in a sense, lesser partners in the larger enterprise of paleoanthropology. Paleontologists and geneticists told us who was ancestral to whom and archaeologists scrambled around re-organizing our data into "culture histories" so that they aligned with the latest "anthropogenic" narrative concocted by our colleagues in physical anthropology. That era is drawing to a close. McCall and others who became archaeologists around the turn of the 21st Century are increasingly defining their own specifically archaeological research goals. These goals involve developing models rooted in behavioral and evolutionary ecology, ethnology, ethnography, as well as cognitive sciences and then testing them with archaeological evidence. This new approach ("Processual Archaeology 2.0") is on good display in *Before Modern Humans*.

The physical book is handsomely made. The binding is strong, the text well-edited, and illustrations clear. (If anything, it is a bit under-illustrated. There are few pictures of sites, artifacts, or hominin fossils.) It is also available in electronic format. I enjoyed reading it and found it raised many new questions about the early prehistory of Africa and human evolution in general. In this sense, its subtitle is a more accurate characterization of its contents, for with the oldest *Homo sapiens* fossils now clocking in at 195,000 years ago in the Lower Omo Valley Kibish Formation in Ethiopia, "modern" humans were already on the scene during at least the later parts of the time period *Before Modern Humans* covers.

As luck would have it, I read sections of *Before Modern Humans* immediately before my undergraduate "Archaeology of Human Origins" class. Interjecting some of McCall's points from the book made for lively