

A CRITICAL VIEW OF THE EVIDENCE FOR A SOUTHERN AFRICAN ORIGIN OF BEHAVIOURAL MODERNITY

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ABSTRACT

The Middle Stone Age of southern Africa has produced a wealth of new data that points to this region as a centre for cultural development during the Middle and Late Pleistocene. In South Africa it has become scientifically fashionable and politically expedient in recent years to emphasize these important findings and to suggest that southern Africa represents the source of behavioural modernity. While a case can be made for this point of view, this paper examines the strengths and weaknesses of this hypothesis and ultimately rejects the idea of a monocentric southern African origin in favour of a model for a historically contextualized, polycentric rise of cultural modernity. This model for Mosaic Polycentric Modernity (MPM), while not denying the unique role of Africa in the later phases of human evolution, better matches the global archaeological record than the models emphasizing strictly African origins.

Keywords: cultural modernity, mosaic polycentric modernity.

INTRODUCTION

In recent years, building on the important work of Bräuer (1984, 1992), Stringer (Stringer & Andrews 1988; Stringer 2002) and other researchers in the 1980s and 1990s, Africa has been recognized as the continent on which anatomically modern humans evolved. Today debate persists on the extent to which archaic and modern humans interbred across the contracting frontiers of the range of archaic hominins during the Late Pleistocene. Few, if any, scholars question the unique role that Africa played in the evolution of anatomical modernity. New data from localities including Herto (White *et al.* 2003) and Omo Kibish (McDougal *et al.* 2005) in Ethiopia push the date of the development of anatomical modernity back to at least 160 000 years ago, and genetic data are consistent with an African origin of anatomically modern humans (Forster 2004).

The question of when and where hominins became behaviourally like us is a more hotly debated issue (e.g. McBrearty & Brooks 2000; Wadley 2001; Klein & Edgar 2002, d'Errico 2003; Bolus 2004; Conard 2005). When discussing behavioural or cultural modernity, terms I use synonymously, I refer to behavioural patterns that fall within the range of variation observed among ethnographically documented hunter and gatherer societies of the subrecent past. Such societies, depending on their environmental setting and specific histories of cultural development and exchange, show highly variable technological and economic patterns, as well as considerable variation in their material culture. All of these societies, however, are characterized by the use of syntactic languages, complex systems of belief and a symbolically mediated network of social and economic relationships.

Many researchers today accept as a given that both anatomical and behavioural modernity evolved in Africa. In many discussions about this issue, researchers present two competing views (e.g. McBrearty & Stringer 2007), namely those of McBrearty and Brooks (2000) favouring a gradual African origin and of Klein (Klein & Edgar 2002; Klein 2003) supporting sudden late African origin of behavioural modernity

around 50 000 years ago in connection with a genetic mutation that caused a major advance in linguistic capacities.

Parkington's (2001) model for the development of behavioural modernity based on increasing use of coastal resources is less often cited, but addresses issues similar to those mentioned above. Parkington's model, like Klein's, provides an explicit causal mechanism for cultural evolution and behavioural innovations, with the former model being testable and potentially easy to refute. Regardless of which of these models one favours, the African origin of cultural modernity is today often viewed as a given in the scientific community. To suggest that Eurasia played an important role in the development of cultural modernity is often viewed as old-fashioned, biased or even Eurocentric.

In South Africa the enthusiasm for important discoveries at sites including Klasies River (Singer & Wymer 1982), Blombos (Henshilwood *et al.* 2002, 2004), Diepkloof (Parkington *et al.* 2005) and Pinnacle Point (Marean *et al.* 2007) has led to the perception that behavioural modernity originated in the coastal zone of South Africa. Aside from scholars, the media, politicians and funding agencies, realizing the power of such a claim, have accepted statements and innuendoes coming from the scientific community that imply a monocentric origin of cultural modernity in southern Africa. This point of view was uncritically championed, for example, by most of the researchers, politicians and members of the media that participated in the Cradle of Language Congress in Stellenbosch in November 2006.

Other models such as those of d'Errico (2003) or Zilhão (2001) that argue for cultural modernity among both modern and late archaic hominins seem to be ignored in most of the African literature. Similarly, my arguments (Conard 2005) for a mosaic, polycentric, non-exclusively African origin have not received much attention in the African literature. Models such as Lewis-Williams' (2002) model for modernity developing on the frontiers between anatomically modern and archaic populations receive little attention. Scholars mainly based outside Africa have occasionally questioned models for an exclusively African origin of behavioural modernity. Hovers and Belfer-Cohen (2006: 299), for example, argue: "Overall the late Middle-early Upper Pleistocene record speaks against the emergence of 'modernity' as a global, one-time event associated solely with *Homo sapiens sapiens*." They also state that "The spread and persistence of modern behaviour is a tale of historical contingency rather than a gradual evolutionary cultural change or an Upper Palaeolithic innovation *sensu stricto*." (Hovers & Belfer-Cohen 2006: 301). Although these views have yet to be fully articulated in concrete models, they make it clear that not all researchers accept the concept of an exclusively African monocentric origin of cultural modernity.

WHEN AND WHERE IS MODERNITY VISIBLE IN THE ARCHAEOLOGICAL RECORD?

Writing for the readers of the Goodwin Series and in a Festschrift for Prof. Lyn Wadley, one of few prominent South

African scholars who has consistently questioned the southern African origins model, I need not present a detailed description of the local archaeological record. Here it is perhaps worth noting that Wadley has always emphasized the utilitarian nature of many southern African innovations and has consistently questioned the rush to see symbolic meaning in the archaeological record of the Middle Stone Age (MSA) (Wadley 2001, 2005). In the context of this short paper, I will mention only a few of the major arguments for coastal South African origins and recommend reading the references cited to fill out this sketch.

Adept scientific and popular marketing of the important findings from Blombos Cave has produced a situation in which this site plays a particularly important role in the discourse on the origins of cultural modernity. Based on its finds of attractive lithic artefacts, simple bone implements, engraved ochre, and perforated shell ornaments, Blombos is often perceived as the place where cultural modernity emerged. The point of view that behavioural modernity evolved in southern Africa is by no means absurd when one considers the wealth of data for coastal adaptations, complex lithics, bone artefacts, the use of pigments and engraved objects, and personal ornaments from sites such as Klasies River Mouth (Singer & Wymer 1982), Diepkloof (Parkington *et al.* 2005), Peers Cave (Watts 2002), Klein Kliphuis (Mackay & Welz 2008) and Pinnacle Point (Marean *et al.* 2007). Given that all of these sites are near the coast, and that no other region in Africa provides a comparable wealth of indications of complex behaviour, the South African origin model is not without merit. I have no reason to underplay the importance of current research in southern Africa. Nonetheless, I see reason to be cautious before accepting this model.

During the first half of the Late Pleistocene, around 80 000 years ago, the MSA record includes nearly everything one would expect to see in the archaeological record of culturally fully modern humans. The key elements that are missing are figurative representation, ornaments that are given three dimensional form rather than perforated natural objects, indications of purposeful burial and complex beliefs associated with death, therianthrope imagery that does not mimic the natural world, and musical instruments (Conard 2005 and references therein).

In the view of the proponents of the South African origins model, this is not a problem for a number of sensible reasons. First, we know of numerous ethnographically recorded hunter and gatherer groups, who, despite being culturally modern, do not produce archaeologically visible artefacts that would demonstrate modernity. The taphonomic filter that separates archaeologists from the symbolic world of past societies is very real; we can be sure only that the baseline of symbolic complexity that is visible in the archaeological record always represents the minimum that existed in the past. Thus when figurative representations appear in the late MSA record of Apollo 11 Cave in southwestern Namibia between 25 000 and 28 000 radiocarbon years ago (Vogelsang 1998), this development is seen to represent the filling in of a small gap in the picture of southern African primacy, rather than being a fundamentally new innovation. Similarly, the missing parts of the record are not viewed as terribly important, because one cannot expect to find all classes of artefacts in the archaeological record of any one part of the world. Again, these are reasonable arguments.

Before rejecting or accepting a monocentric model for southern African origins, we need briefly to consider some elements of the archaeological record from other regions and the patterns by which modern humans spread across the Old

World. When we consider the broader picture, claims for a uniquely southern African origin become much less convincing.

OTHER REGIONS AND ALTERNATIVE MODELS

Moving beyond the southern African record, the situation becomes more complex and some fundamental theoretical considerations become relevant. One of these is the question of whether anatomically archaic people can be culturally modern. This is a key theme in the recent work of authors including Zilhão and d'Errico (Zilhão 2001; d'Errico 2003) and Hovers and Belfer-Cohen (2006). I argue that human behaviour is not strictly linked to anatomical form (Conard 1990) and that, in principle, anatomically archaic hominins could be culturally modern. However, this question obviously depends on the specific nature of one's definition of cultural modernity.

Another question is whether or not anatomically and culturally fully modern humans always succeeded in competition with archaic humans such as Neanderthals. The simple answer to this question is, yes. If this were not the case, one would have problems explaining why our taxon, *Homo sapiens sapiens*, is the only human form existing today. If we follow this line of argument further within an evolutionary theoretical framework, we must conclude that when anatomically and culturally fully modern humans emerged, they would have driven archaic populations to extinction. A degree of give-and-take might be expected, but over a relatively short period, archaic populations were slated for extinction unless they quickly responded to this Darwinian competition in what might be considered a cultural arms race. Using a behavioural ecological framework (Krebs & Davies 1991; O'Connell 1995; Shennan 2002), which is, more or less, the only broadly applicable model on the current scientific market, the ultimate criteria for success or failure are demographic ones, and the currency for the Darwinian competition is often caloric rather than symbolic.

With these points in mind, we can consider other regions and look at the archaeological record to see where and when anatomically modern humans gained the evolutionary advantage over archaic populations. We may also consider what aspects of the material record distinguished early fully culturally modern humans from both late archaic humans and earlier anatomically modern humans. This threshold would represent when modern humans achieved behavioural dominance over the late archaic humans and presumably became human like ourselves. For brevity's sake I will not present all of the relevant data, but will illustrate my points with only a few examples.

A particularly important region to address this question is along the borders between Africa and Eurasia. Owing to its long history of research, its lack of exclusive biogeographic boundaries, and its good archaeological record, the Levant is the key region to consider. Personal ornaments made from shells, the use of pigments and burial of the dead are all present in the archaeological record of anatomically modern humans at Skhul and Qafzeh by 100 000 years ago (Defleur 1993; Hovers *et al.* 2003; Vanhaeren *et al.* 2006). These immigrants from Africa, who seemed to be at a level of cultural evolution comparable to their contemporaries in southern Africa, the Maghreb and East Africa, did not succeed in permanently replacing Neanderthals in southwestern Asia. This observation indicates that they were culturally not fully modern. If they were culturally modern, they by definition would have had a behavioural advantage over archaic humans such as Eurasian Neanderthals. We know from many studies that anatomically modern humans from the Levantine Middle Palaeolithic used both technology and subsistence practices similar to those used by local Neanderthals (e.g. Shea 2003). The few features of the archaeological record

of early anatomically modern humans in the Levant that were absent among Neanderthals, such as the use of personal ornaments, did not give them a strong enough selective advantage over Neanderthals to displace them permanently. At a slightly later date, Neanderthals recolonized the southern Levant where millennia earlier anatomically modern humans had established stable breeding populations.

If we accept this line of argument, we need to look for the appearance of cultural modernity in the period after 100 000 years ago, or more controversially, grant the Levantine Neanderthals full cultural modernity. I prefer the former option and will discuss this option below.

The aspects of the material record lacking among the early anatomically modern humans in Africa and present in the archaeological record of the early colonizers of Eurasia include figurative representation (Hahn 1986; Floss & Rouquerol 2007), three dimensional personal ornaments with human-made form (Vanhaeren & d'Errico 2006), figurative representations of unreal forms such as therianthropes (Hahn 1986; Conard 2003; Broglio & Dalmeri 2005), and musical instruments (Buisson 1990; Conard *et al.* 2004). All of these kinds of artefacts are first known from contexts connected to the successful expansion of anatomically modern humans out of Africa into Europe. The record of such artefacts suggests that either 1) by the beginning of this later phase of anatomically modern human expansion out of Africa these kinds of artefacts existed in Africa but have not yet been discovered, or 2) they evolved in the context of the spread of anatomically modern humans across the Old World. It is noteworthy that the best record of this process is found in western Eurasia (e.g. Conard 2005 and references therein). Similar processes may well have happened as anatomically modern humans moved into central and eastern Asia and into Australia. The colonization of southern Asia and Australia dates to roughly 50 000 years ago (O'Connell & Allen 2004), whereas the successful spread of modern humans into Europe dates to about 40 000 years ago (Conard 2006 and papers therein).

Although anatomically modern humans in southern, eastern and northern Africa evolved a complex pattern of cultural innovations by the early part of the Late Pleistocene, it was not until several tens of thousands of years later that fully modern behaviour arose and allowed the successful colonization of the Old World. Thus the appearance of fully modern behaviour is not strictly speaking an African and still less a southern African event, but rather a multilineal evolutionary process that occurred in different social and economic contexts as modern humans displaced archaic humans across the Old World and ultimately drove them to extinction.

CONCLUDING REMARKS

The Middle Pleistocene record of human behaviour includes sites such as Schöningen (Thieme 1999) and Boxgrove (Roberts & Parfitt 1999) that demonstrate technological sophistication using both organic and lithic raw materials, controlled use of fire, and highly competent hunting of fast and strong game. These behaviours require a high degree of planning depth and well-developed linguistic skills that allowed communication about the present, past and future. This does not imply that Middle Pleistocene hominins in Europe were culturally modern; they were not. They were, however, by no means primitive push-overs waiting to be driven to extinction by African emigrants. Later archaic humans like Neanderthals were likely to have been still further advanced (d'Errico 2003). They buried their dead, used pigments, controlled fire and hunted at the top of the food chain across the Ice Age of

western Eurasia. During the Middle Pleistocene and first half of the Late Pleistocene important cultural innovations occurred in a mosaic pattern across Africa and Eurasia (Conard 2005). Africa was by no means the sole source of cultural and technological innovations.

The early part of the Late Pleistocene witnessed many innovations in Africa; some of these are best documented in the coastal zone of southern Africa. These innovations, such as the use of ground ochre, abstract depictions and the modification of natural forms to make personal ornaments, did not represent evolutionary breakthroughs that led to the rapid replacement of archaic hominins.

On the contrary, several tens of thousands of years later figurative art, complex religious beliefs documented in the material record in the form of therianthropic images, large numbers of personal ornaments shaped in three dimensions, and musical instruments appear in the archaeological record. These innovations reflect the appearance of fully developed, symbolically mediated lifeways among anatomically modern humans. These new behavioural adaptations in connection with highly affective lithic and organic technologies must have provided modern humans with more reliable access to caloric and nutritional resources, which in most regions of the zone of contact gave them a demographic advantage over the indigenous populations of archaic peoples. The archaeological record indicates that all of these innovations that help to define fully modern behavioural systems first appeared outside of Africa and can be taken as evidence against a strictly African origin of cultural modernity. Evidence for new technological innovations and new forms of symbolic communication like those well documented across Europe at sites like Fumane, Chauvet, Stratzing, Vogelherd, Hohlenstein-Stadel, Hohle Fels and Geißenklösterle demonstrate that many important cultural innovations initially took place outside Africa (Conard 2005 and references therein).

These new kinds of artefacts laden with symbolic meaning need not be directly connected to improved subsistence practices and did not, in and of themselves, provide demographic advantages to their makers. They instead represent the material record of the social and symbolic 'glue' that held together larger and more complex, fully modern, social groups. These artefacts and the behavioural patterns they reflect more effectively linked people and technology to their environment, while allowing culturally modern humans to out-perform indigenous archaic populations across the Old World (Conard 2006 and papers therein). These new symbolic artefacts can be seen in the archaeological record of Europe and show spatial and temporal distributions closely linked to the expansion of behaviourally modern humans across the continent.

The Asian archaeological record provides a less fine-grained picture of cultural innovations, but this model for the multi-stage, polycentric, contextually dependent evolution of cultural modernity predicts that examples of new types of artefacts and evidence for innovative behavioural patterns will be recovered across Asia and Australia. Such innovations also would have spread across Africa, where, through independent, parallel evolution and diffusion, similar adaptations would have provided advantages over earlier cultural solutions to the prevailing social and economic conditions. This model, which I call the model for **Mosaic Polycentric Modernity (MPM)**, predicts that the spatio-temporal pattern of the evolution of cultural modernity is neither monocentric nor globally contemporaneous.

The MPM model suggests that the search for a single origin of cultural modernity will be a futile enterprise. If, however,

one wished to pursue this enterprise for intellectual or rhetorical purposes, archaeological signatures and classes of artefacts lacking in the assemblages of archaic humans and present in the assemblages made by expanding modern populations should provide the key to identifying the spatial-temporal pattern of the rise of cultural modernity. Important behavioural innovations could be expected in the 'nuts and bolts' department of the archaeological record of technology, subsistence and settlement (Conard 2005) or in the area of symbolic artefacts. Classes of artefacts indicative of highly advanced symbolic communication include figurative depictions, personal ornaments crafted in three dimensions, depictions of images not existing in the material world, and musical instruments. Evidence for these cultural innovations that help to define fully modern behavioural systems is currently best documented outside of Africa and argues against a strictly African origin of cultural modernity.

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