

Who were the later Pleistocene eastern Africans?

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Abstract

A later Pleistocene Khoisan peopling of eastern Africa has been suggested by most researchers. The evidence cited consists of a few isolated crania, archaeological occurrences described as 'Wilton', rock paintings and scattered populations of present-day hunter-gatherers speaking languages with clicks and viewed as bearing some physical resemblances to living Khoisan groups. When these different lines of evidence are evaluated, it is clear that there is no strong basis for retaining the concept of later Pleistocene Khoisan populations in eastern Africa. Instead, the available data suggest that the later Pleistocene and Holocene eastern Africans were tall, linear peoples.

Résumé

La plupart des chercheurs proposent que l'est de l'Afrique a été peuplé pendant le Pléistocène tardif par des gens Khoisan. Les témoignages cités par ces auteurs consistent en quelques crânes isolés, des mobiliers archéologiques catégorisés comme du type 'Wilton', des peintures rupestres, et la répartition actuelle de quelques groupes sociaux bien parsemés de chasseurs-cueilleurs qui parlent des langues avec des claquements et qu'on pense à ressembler physiquement à quelques peuples Khoisan d'aujourd'hui. Quand ces lignes de raisonnement sont évaluées individuellement, il se manifeste qu'il n'y a aucune base solide qui peut nous justifier à garder l'hypothèse de la présence des gens Khoisan dans l'est de l'Afrique pendant le Pléistocène tardif. Au contraire, les données disponibles nous amènent à penser que les gens est-africains au Pléistocène tardif ainsi qu'à l'Holocène étaient de haute taille et mince.

Introduction

If a gathering of Africanist archaeologists were asked the question 'Who were the later Pleistocene eastern Africans?', most would reply 'Large Khoisan (Bushman-like) hunter-gatherers', the traditional viewpoint presented in texts and major syntheses of African prehistory (see for example Murdock 1959; Coon 1962; Brothwell 1963; Cole 1963, 1970 and Phillipson 1977, 1985). 'Khoisan', 'Khoisanoid' or 'Bushman-like' (Bushmanoid) is used in

a general sense to imply morphological as well as cultural similarities to living populations of southern African Khoi and San (previously referred to as Hottentot and Bushman).

The use of the terms 'Khoisan' or 'Bushman-like' in syntheses of African prehistory presents a problem, however, because they are poorly defined (Tobias 1978). In addition, most of the morphological traits regarded as 'Khoisan' (i.e. light or yellow skin, tightly spiraled hair, steatopygia) are obviously not preserved in prehistoric skeletons. Hence prehistoric African skeletons are usually described as 'Bushmanoid' if the cranial remains appear paedomorphic with smooth rounded vaults and proportionally small faces. All of these designations should now be challenged, because all descriptions of Khoi and San cranial morphology are now known to be biased due to typological sorting of museum cranial collections (Morris 1986).

The roots of the idea that Khoisanoid peoples were once present in eastern Africa are diffuse. Surveys of eastern African prehistory are plagued with statements, often mythical in their inspiration, about the 'racial' affinities of early populations. Culture historians cite travellers' accounts of early hunter-gatherer populations with light or yellow skins (Frobenius 1933 and Baumann 1940, as cited in Zwernemann 1983; Seligman 1957), and these have been interpreted as meaning Khoisanoid peoples. Also, researchers in virtually every region of eastern Africa hear tales of the giant 'ancestors' who constructed the numerous earthworks and stone cairns that dot the African landscape.

Certainly one factor that contributes to the notion of an early Khoisan peopling of eastern Africa is the persisting image of the San (Bushmen) as *the* African hunter-gatherers, along with the idea that living hunter-gatherers are remnants of archaeological hunting and gathering populations (c.f. Murdock 1959; Coon 1962; Ambrose 1982; although counter arguments have certainly been raised, e.g. Chang 1982). Secondly, ideas from southern Africa, where evidence for prehistoric Khoisans is very strong, were imposed on eastern Africa by analogy. Eastern African archaeological and palaeoanthropological discoveries were compared with the better known record of southern Africa where the 'Boskopoid race' model, which views unreduced or large Bushmen as the prototype for prehistoric populations, held sway for many years (Goodwin 1929). The idea of a 'Boskopoid race' in Africa has since been discounted (Rightmire 1974; Hausman 1980; Tobias 1985), but this seems to have had little effect on discussions of prehistoric eastern Africa. Reference is still made to the presence of a large Khoisan stock in the later Pleistocene of eastern Africa, as population maps in Bräuer (1978) and Phillipson (1985) illustrate.

Since Khoisan peoples are a non-existent (or questionable) element in eastern Africa today, a Khoisan peopling during the later Pleistocene raises serious difficulties for the study of the process of human biological diversification in eastern Africa. How could prehistoric Khoisan populations be related to modern eastern Africans? What is the factual basis for a later Pleistocene Khoisan peopling of eastern Africa?

Palaeoanthropological evidence for 'Khoisanoids' in eastern Africa

Only two palaeoanthropological discoveries, the Homa Shell Mound skeletons and the Singa skull, have ever been proposed as representing Khoisans in eastern Africa.

Six incomplete skeletons were collected by L. S. B. Leakey from the Homa Shell Mounds along the eastern shore of Lake Victoria (Fig. 1). He described them as similar, in terms of

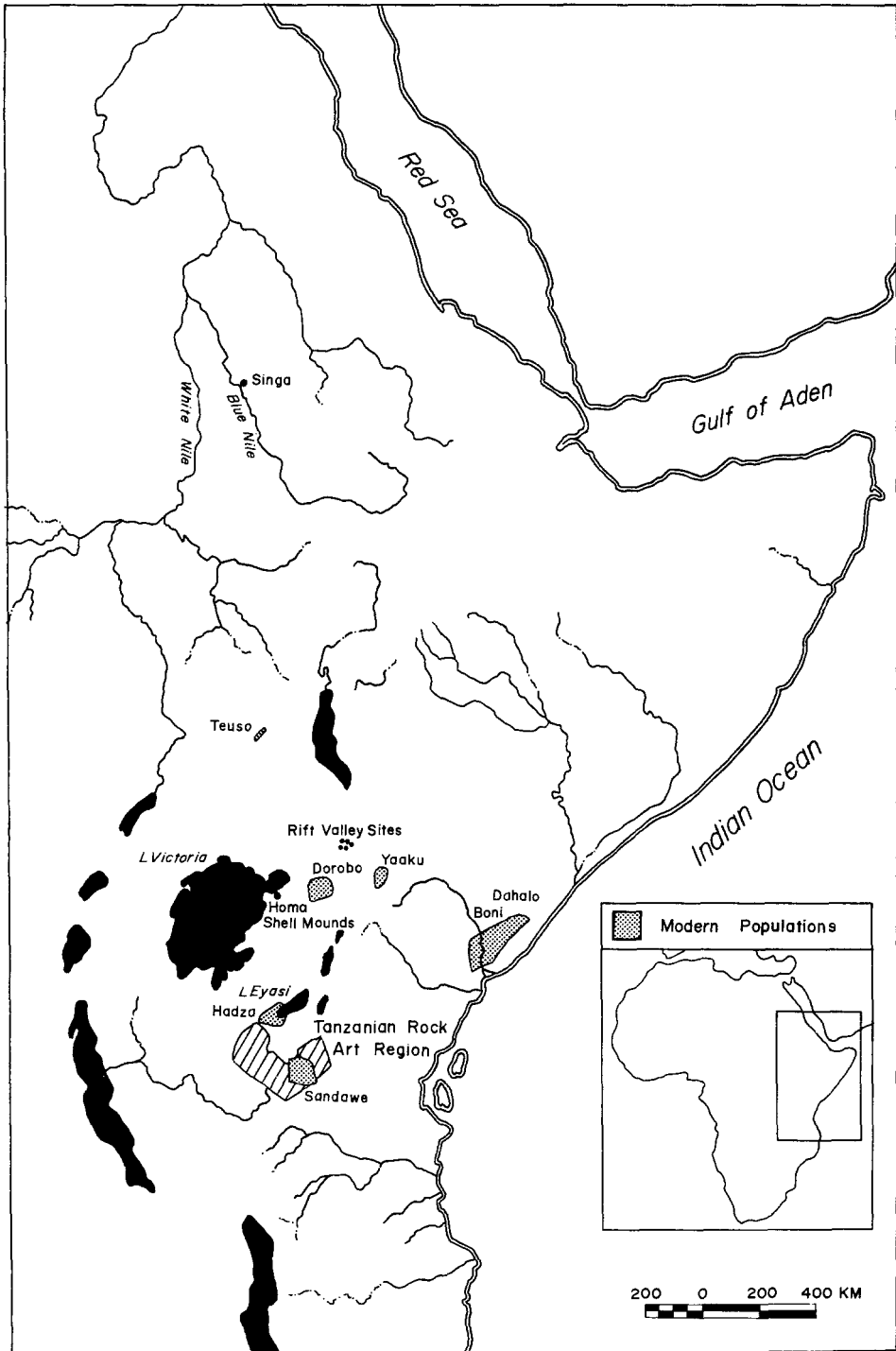


Figure 1 Distribution of archaeological sites and of modern eastern African hunter-gatherers discussed in the text.

skeletal morphology and material culture, to the Strandlooper or coastal Bushman populations from southern Africa. According to Leakey (1935), similarities between Homa and the Strandloopers included large cranial vaults with strongly arched foreheads, small facial size relative to the vault, slight dental attrition and massive limbs. But the similarity between the two groups was not very apparent, and from Leakey's description (1935:92) only individual 4 seemed to show the Strandlooper traits clearly.

Leakey was most impressed with what he viewed as the cultural similarities between Homa and the southern African sites. Like the Strandlooper groups, the Homa remains were found in shell middens and thought to be associated with a Wilton microlithic industry. The correlation between Wilton industries and Bushman populations was so widely accepted in southern Africa (Goodwin 1929) that the mere presence of Wilton at Homa was enough to make some researchers characterize the skeletons as Bushman regardless of how they looked (Cole 1970).

Unfortunately, the Homa remains have been largely ignored because of their fragmentary condition and uncertain date. Like the nearby Kanam and Kanjera localities, the age of the Homa Shell Mounds is still unverified. However, a few archaeologists have reiterated Leakey's idea that the skeletons represent early eastern African Khoisans and this perspective remains unchallenged in reviews of eastern African prehistory (Cole 1963, 1970; Phillipson 1977, 1985; Ambrose 1982).

Both M. O. Smith (personal communication 1985) and I have studied the Homa skeletons and find no morphological evidence to support Leakey's original suggestion that the Homa people bore resemblances to Khoisan groups. The Homa remains have a high frontal often seen in eastern African crania but lack the distinctive frontal bossing that is said to characterize 'Bushmanoid' skulls, as at Matjes River Cave (Bräuer 1984a). And the slight dental attrition at Homa, which L. S. B. Leakey (1935) suggested was due to a 'Strandlooper' diet of shellfish, is better explained as due to early age at death. Lastly, while the Homa individuals do have moderately robust limbs and individual 4 has a relatively small face, that is hardly evidence for labelling them as 'Khoisan'. The same morphology is seen in some individuals from other sites in eastern Africa such as Bromhead's Site and the Njoro River Cave.

The second eastern African site with possibly Khoisanoid remains is Singa, located on the Blue Nile in the Sudan (Fig. 1). The adult male cranium was originally described by Sir Arthur Smith Woodward (1938) as an early, unreduced Bushman due to the fullness and keeling of the frontal, the flattening of the middle portion of the cranial vault, the prominent parietal bosses and median parietal depression, the wide quadrangular orbits, the lowness of the squamosal portion of the temporal and the small mastoid processes. The Singa skull, he contended, was very similar to Bushman ones except that it appeared to lack the classic 'Bushmanoid' reduction of the face. Smith Woodward also noted resemblances between Singa and the skulls from Afalou-bou-Rhummel in Algeria, citing both sites as evidence for an early Bushmanoid peopling of Africa from the extreme north down into the southern regions. Singa was the evidence for this group in eastern Africa.

Wells (1951) re-examined the Singa skull and basically concurred with Smith Woodward, although he noted some features, such as the supraorbital torus and cranial length, for which he thought Singa was unique. Despite this, Wells did not reject the idea of Singa as a member of the diverse proto-Bushmanoid group. In fact, he extended the Bushmanoid paradigm in eastern Africa by suggesting that Gamble's Cave 4 and the fragmentary Eyasi cranium

shared 'Bushmanoid' features with Singa. These ideas have not been adopted by anyone else, although Galloway (1937) had earlier proposed that the Gamble's Cave specimens might be hybrids of ancestral Bushmen and Middle Eastern populations.

Smith Woodward and Wells' assessment of Singa as a later Pleistocene 'Bushmanoid' was accepted until studies by Brothwell (1974), Rightmire (1974, 1984), Stringer (1979), and Bräuer (1984b) questioned the skull's later Pleistocene age and/or the interpretation of its morphology. These researchers thought that Singa could be older than the date of *ca* 17,000 BP published by Oakley *et al.* (1977:157), and that the skull appeared, in terms of supraorbital development, morphologically distinct from modern *Homo sapiens*. According to Stringer (1979) and Rightmire (1984), Singa is archaic rather than modern *Homo sapiens*. Furthermore, Stringer views the skull's bulging 'Khoisan shape' as due to pathological thickening of the parietal diplöe. Subsequent work has failed to yield a conclusive answer as to the nature of the pathology involved (Stringer *et al.* 1985), and Singa has yet to be satisfactorily dated. The later Pleistocene date for the skull is inferred from the nearby site of Abu Hagar, where more recent work indicates that an earlier Upper Pleistocene age might be more accurate (Ziegart 1981, as cited in Bräuer 1984a).

My own morphological analysis of the Singa cranium does not support the idea that it is archaic *Homo sapiens*. I found that a comparison with the calvarium from Lukenya Hill, south of Nairobi was informative. Lukenya Hill is dated to approximately 17,000 BP (Gramly and Rightmire 1973) and so could, perhaps, be a contemporary of Singa. The two specimens show marked morphological similarities in nasal, brow, frontal and parietal form. They are not identical in supraorbital morphology, but both exhibit a development of the brow to an extent not seen in succeeding eastern African populations. The brow is a distinctive structure above the broad, flattened nasal root. The central or glabellar region is the most prominent portion but the midorbital portion is also thickened. This supraorbital morphology is robust, but certainly modern in form. Behind the brows, there is little postorbital constriction and a full wide frontal with a slight keel that continues to bregma. The similarity in frontal profile between the two specimens is clearly seen in Figure 3c of Bräuer (1984a). The frontals of Singa and Lukenya Hill are wide and full, but lack the frontal boss said to be characteristic of Khoisan skulls (Slome 1929). Similar in outline, both crania are pentagoidal in shape as seen from the top, being short and broad (discounting the exaggerated degree of parietal bossing due to pathology on Singa). Rightmire (1984) describes Lukenya Hill as lacking any Bushman-like characters; I contend that the same must be true of the morphologically similar Singa skull.

Thus the Homa Shell Mounds and Singa do not provide convincing evidence for a later Pleistocene Khoisanoid presence in eastern Africa. Comparisons with more recently discovered eastern African materials show that claims of similarity to Khoisan morphology are inaccurate, and that 'there is now little or no skeletal evidence to support a Pleistocene occurrence of San populations in East Africa' (Rightmire 1984:193). Yet the idea of a later Pleistocene Khoisanoid occupation of eastern Africa persists – because it is not based solely upon the fossil evidence. A complex tapestry of palaeoanthropological, biological, linguistic and archaeological sources is involved. Used in conjunction, these different types of information have been viewed as providing strong support for early Khoisan populations in eastern Africa. Evaluated separately, like the fossil evidence just discussed, none of the other sources appears to be any more convincing.

Biological evidence for 'Khoisanoids' in eastern Africa

The few extant hunting and gathering populations in eastern Africa have been cited as evidence for early 'Khoisanoid' peoples, for they are thought to constitute living links with the indigenous populations of the past (Fig. 1). This is partly because of their lifeway and partly because they are described as physically and linguistically different from neighbouring populations. Murdock (1959), in his classic survey of African peoples, mentions that the Kindiga (Hadza) and Sandawe hunters of northern Tanzania presently speak Khoisan click languages, and that other eastern African hunters such as the Boni, Dorobo and Teuso (Ik) allegedly exhibit physical traces of a Bushman heritage. More specifically, the Kindiga (Hadza) males are reported to be of reduced stature (Fosbrooke 1956) and the females are somewhat steatopygic; the Teuso (Ik) are also described as short and light-skinned (Murdock 1959).

To date, only the biology of the Sandawe has been studied in any detail. Early German accounts of the group mentioned the similarity of their language to that spoken by the Nama Hottentots of southern Africa and their physical resemblances to Khoisans (Dempwolff 1916, as cited in Trevor 1947). All of our information was anecdotal until Trevor (1947) collected data on Sandawe hair form, skin colour and body form. Non-metrically, he found them to be very similar to their Bantu-speaking neighbours, except that a few of the women had a slight degree of steatopygia. Using a Mahalanobis D-squared analysis of a small series of anthropometric variables, Trevor compared the Sandawe with neighbouring Nyaturu Bantu, Northern Bushmen, Southern Bushmen, Nama Hottentots (Khoi) and Dahomeans. He found the Sandawe to be closest in body build to the Nama Hottentots (Khoi), followed by the Nyaturu Bantu. Because of this result, Trevor concluded that the biological evidence for the Sandawe supported the linguistic arguments that they were related to the Khoisan.

Trevor's (1947) conclusion can be questioned because demonstrating that the Sandawe are morphologically closest to the Nama for a small set of variables is not the same as demonstrating that they are similar to Khoisans as a group. The Nama sample, while composed of culturally traditional Khoi, is itself the product of long-term admixture with southern Bantu-speaking populations. The Nama and Sandawe samples in Trevor's analysis might therefore appear most similar only because both groups have undergone admixture with populations of Bantu-speakers. Another point that buttresses the view that the Sandawe are best seen as admixed with Bantu-speakers is their closer similarity to the Nyaturu than to the two Bushmen samples.

Hiernaux (1975) is also sceptical of the classification of the Hadza and Sandawe with the Khoisan peoples, and does not group them together in his survey of the human biology of Africa. Instead, he stresses the physical similarities of the eastern African hunter-gatherers to each other and their biological closeness with neighbouring Bantu-speaking tribes like the Nyaturu and Sukuma.

Genetic studies of the eastern African hunter-gatherers should clarify their relationships to other populations. As the Khoisan are significantly different from other African groups for several genetic markers (Harpending and Jenkins 1973; Hiernaux 1975; Mourant 1983; Tobias 1985; Nurse *et al.* 1985), it should simply be a matter of determining whether the eastern African hunter-gatherers differ in a similar way. In order to suggest a genetic relationship between the eastern African hunter-gatherers and the southern African

Khoisans, it would be necessary to identify a suite of genetic markers that they hold in common because of the not unusual situation in which a particular mutation can occur more than once, and in geographically disparate locations. For example, an allele of the ABO blood system, A^{bantu}, is common in Khoisan and southern African Negro (Bantu-speaking) populations but rare or unknown in other Negro groups (Nurse *et al.* 1985). Its presence in eastern African hunter-gatherer groups, in conjunction with other 'Khoisan' genetic markers, would be strong evidence in support of a genetic relationship. Unfortunately, the frequency of A^{bantu} or other genetic marker alleles has not been determined for the eastern African hunter-gatherer groups. What information we do have on the Sandawe indicates that they show typical 'Negro' or Bantu-speakers' blood group frequencies. The Hadza have a high frequency of cDe for the Rh system, just like the San, but similarly high frequencies are also seen in the eastern African Nilotic-speaking groups (Mourant 1983), and the argument could just as easily be made that the Hadza are related to those populations.

In summary, the biological relations of the present-day eastern African hunter-gatherer populations are still largely unknown. But what we do know at this point suggests that they do not bear any specific resemblances to living Khoisan populations, and overall, they seem most similar to their Bantu-speaking neighbours. We need more precise information on the genetic make-up of groups like the Sandawe, Hadza, Boni and Dorobo before we can come to a clear understanding of their biological relationships either with their geographic neighbours or with the Khoisan populations of southern Africa. At this point, there is no definitive biological evidence that links present-day hunter-gatherers of eastern Africa to Khoisan populations.

Linguistic evidence for 'Khoisanoids' in eastern Africa

Further information on the relationships between present-day eastern Africans and their proposed Khoisan ancestors comes from linguistic studies. Several researchers have noted that the Sandawe and Hadza of Tanzania speak languages with clicks, or consonants pronounced using a velaric ingressive airstream. As the only other African languages that consistently use clicks are in the Khoisan language phylum (or have assimilated clicks from Khoisan speakers), Hadza and Sandawe are generally considered to be Khoisan languages.

Greenberg (1950, 1966) was the first formally to group Sandawe and Hadza under the Khoisan language family. His classification, which was based on small sets of data, relied mostly on the presence of clicks. Greenberg thought that the Hadza and Sandawe languages are fundamentally similar to Khoisan, but he found enough differences between them to suggest that the eastern African languages and Khoisan languages are only distantly related. Subsequently, Honken (1977) has examined the Khoisan pronominal systems and also supports the inclusion of the two Tanzanian languages in the Khoisan language family. But this taxonomy has been seriously questioned by several researchers.

Ethnographers working with the Sandawe (Newman 1970) and the Hadza (Woodburn 1970) both question whether these languages are in fact click languages. The linguists Westphal (1963, 1971) and Tucker (1967) argue that Sandawe and particularly Hadza are too inadequately known at this point and that a great reliance upon a single feature, such as the presence of clicks, cannot justify their inclusion with the Khoisan languages. Tucker

(personal communication cited in Woodburn 1968) later suggested that Hadza is not related to the click language group but instead is linked to the 'Hamito-Semitic' group. Clearly, no claim of a genetic relationship between the Hadza, Sandawe or Khoisan languages can be made in the absence of a detailed description and historical reconstruction of the eastern African hunter-gatherer languages.

An alternative hypothesis to the idea of a common origin for Hadza, Sandawe and the southern African click languages is that clicks, while unique to Africa, had two centres of origin, in both the east and the south. It is theoretically possible that a single phonetic feature like a click could have arisen more than once, and the differences between Sandawe and Hadza and the southern African Khoisan languages may reflect this. For example, clicks appear far less frequently in Hadza. When used, clicks commonly appear in the middle of Hadza words, sometimes in the middle of Sandawe words, but invariably in the initial position in the Central and Southern Khoisan languages (Greenberg 1966). Until a more detailed study of these clicks has been completed, we cannot rule out the possibility that the eastern African languages with clicks have an independent origin.

As the brief discussion above illustrates, the idea of a Khoisan-speaking prehistoric occupation of eastern Africa is based more upon inference than upon evidence, and without a reconstruction of Hadza or Sandawe, it is impossible to even speculate whether languages with clicks have any great antiquity in eastern Africa. Understanding the role of other, non-Bantu linguistic groups as possible early inhabitants of the area is proving more important for an understanding of eastern African prehistory. Linguistic evidence suggests that, prehistorically, eastern Africa was a place where speakers of at least two other language phyla might have congregated. Ehret's (1974a) reconstruction of proto-Nilotic places Nilo-Saharan-speakers in eastern Africa by at least 4–6000 BP. In keeping with this, Sutton (1974, 1977) has suggested that Nilotic language-speakers living in northern Kenya today provide a good analogy for the archaeological remains of semi-permanent lakeshore habitations in the same area dating from between 10,000 and 4000 BP (Owen *et al.* 1982). Afroasiatic is another language phylum that may have been present early in eastern Africa. Ehret (1974b) suggests Afroasiatic (Southern Cushitic) speakers began moving into eastern Africa at least 5000 years ago and that they may have been responsible for early stone cairn burials in northern Kenya (Stiles and Munro-Hay 1981). Given these linguistic arguments for early populations of Nilo-Saharan and Afroasiatic language-speakers in eastern Africa and their ties with current eastern African populations, it seems more reasonable to regard those groups as the earliest known populations in the region, and to reserve judgement on the role of click language-speakers.

Archaeological evidence for later Pleistocene 'Khoisanoids' in eastern Africa

A wealth of archaeological material has been used to support the thesis of a 'Bushmanoid' occupation in eastern Africa. One source of information is prehistoric paintings and petroglyphs, known in many parts of Africa and often attributed to hunting and gathering or pastoral peoples, because elements from those lifeways are depicted. Rock art is less frequently found in eastern Africa, and works that have been located there are often in rockshelters containing Wilton or Wilton-like microlithic industries (Phillipson 1977, Masao 1979, Willcox 1984). The postulated age of the paintings from the largest concentration in the

Kondoa region of Tanzania (Fig. 1) ranges from a minimum of 3000–200 BP based on rockshelter excavations (Masao 1979) to before 29,000 BP based on ochreous colouring implements recovered from the Kisesse II rockshelter (R. Inskip, personal communication 1986 and quoted in M. D. Leakey 1983); thus some of the art can be attributed to later Pleistocene and early Holocene populations.

The East African art has been compared to the rock art from southern Africa, most of which has a fairly well-documented Khoisan etiology (Vinnicombe 1976; J. and I. Rudner 1978; Willcox 1984). There is no comparable documentation to link the East African artwork with living populations, although similarities between the art of the two areas has led Willcox (1984) to sketch a path of artistic diffusion by 'Khoisanoids' that stretches from the Sahara to the Cape. M. D. Leakey (1983), who compares the Tanzanian drawings to southern African ones studied by Vinnicombe (1976), is more cautious in this respect when she discusses the possibility that groups like the Hadza and Sandawe, from the region northwest of the painting sites, might be linked with the Stone Age artists. Leakey finds the art in both eastern and southern Africa to be strongly characterized by a stylistic presentation that omits most details and accents the essential and unique features of the objects portrayed. There are, however, discrepancies in the percentage representation of different animals in the two areas that cannot be explained in terms of their relative population densities but instead imply the relative importance of particular species in the cultural systems. She contends that the art of both eastern and southern Africa reflects 'related codes of behaviour' although the folklore and symbolism systems were obviously not identical (M. D. Leakey 1983:115). But this is indicative of a common hunting and gathering or pastoral lifeway, and should not be interpreted as support for the presence of 'Khoisan' artists in eastern Africa.

An additional type of archaeological data that has been used in evidence of a Khoisan peopling of eastern Africa is lithic assemblages. In southern Africa, discoveries of Late Stone Age Wilton or Wilton-like microliths (especially thumb-nail scrapers) and ostrich egg shell beads have long been assumed to be indicative of a 'Bushmanoid' occupation (Goodwin 1929; Goodwin and van Riet Lowe 1929). The term 'Wilton' was later applied to some eastern African microlithic industries and the ethnic label 'Bushman' naturally attached to the eastern African tool-makers.

The eastern African microlithic industries are extremely varied, leading L. S. B. Leakey (1936) eventually to identify three 'Wilton-type' eastern African assemblages, distinguishable in terms of site locality: Wilton A was found in open air sites in Kenya, Tanzania and Ethiopia and showed Elmenteitan influences; Wilton B was found in rockshelters and often these were decorated with petroglyphs or paintings; and Wilton C was from shell middens situated along the shores of Lake Victoria and other Rift Valley lakes.

The eastern African 'Wilton' is particularly difficult to bring into focus because temporal variants are present along with geographical and raw material-based differences (Nelson 1973; Ambrose 1982). Later researchers found L. S. B. Leakey's (1936) tripartite division of the 'Wilton' inadequate for defining the diversity of the industries of eastern Africa and the Horn. Industries had been grouped under the rubric 'Wilton' because they shared a few common elements with the southern African Wilton.

Subsequent archaeological research has made clear the inappropriateness of broadly applying the single southern African term 'Wilton' to the complex variety of eastern African microlithic industries (Nelson and Posnansky 1970). L. S. B. Leakey's (1936) Wilton A and B

have been subsumed under the category 'Savanna Pastoral Neolithic', while 'Wilton' is still used to denote the lakeshore and rock painting sites of hunter-gatherer/fishing folk (Ambrose 1982). Yet even with the redefinition of the eastern African 'Wilton' assemblages, little has changed concerning what researchers think about who the 'Wilton' toolmakers were. Ambrose (1982), for example, argues that the hunter-gatherers making the Eburran Industry of the Kenyan central Rift Valley (formerly the Kenyan Capsian or Aurignacian) as well as the 'Wilton' toolmakers were Khoisan speakers. He bases this argument on the assumption that the scattered pockets of early and middle Holocene eastern African hunter-gatherers are the vestiges of an indigenous Khoisan-speaking people.

While I am in basic agreement with Ambrose's (1982) treatment of the archaeological data for the later Pleistocene and early Holocene of eastern Africa, I do not see the need to treat hunting and gathering as a 'vestigial' lifestyle in eastern Africa and then to argue that maintenance of a hunting and gathering subsistence pattern necessarily implies links with an 'indigenous Khoisan' population, as he argues in the 'Wilton' and Eburran instances. Most importantly, as the widespread distribution of differing hunting and gathering lifestyles in the later Pleistocene of eastern Africa suggests, there can be no direct correlation between subsistence pattern and ethnic or biologic identity, particularly not a correlation that is based more upon linguistic inference than on archaeology itself.

Discussion

Given the lack of convincing evidence for a Khoisan peopling of eastern Africa, what can we say about prehistoric eastern Africans? They may reveal their own 'true colours' in their rock paintings.

Representational art can only be regarded as an interpretation of the human world, yet representations of people by artists do give us a perspective on the people themselves. A most significant finding from M. D. Leakey's (1983) study is that the depiction of humans varies greatly in Tanzanian rock art. This is in contrast to the much more standardized 'Bushman' form in southern Africa. The majority of human figures in southern Africa are recognizably Khoisan with their short hair and distinctive facial features, genitalia and body ornaments. In the Tanzanian paintings, sexual organs are rarely included and facial features are never drawn (M. D. Leakey 1983).

Stone Age hunters of eastern Africa were portrayed in three different artistic styles. The first style, called 'Kolo', is characterized by long, linear bodies with elaborate long braided hair. Contrasting with the 'Kolo' style is a 'Bushman' style of painting, so-called because the individuals are small, round-headed, large-hipped and schematically drawn (Fig. 2). Lastly, Leakey describes gigantic outlined figures that are probably of very recent origin. These differences in depicting human form in eastern African rock art evoke several questions: What do the various representations of humans in Tanzania mean? Could they in fact be showing physically diverse populations? Are the 'Bushman' style drawings illustrating one morphology while the 'Kolo' figures represent another? Is the artistic evidence for different kinds of people in eastern Africa supported by other types of evidence?

A most simplistic explanation for the diversity of people portrayed in the eastern African rock art is that artistic licence and/or temporal variation is responsible. On the other hand, Lewis-Williams (1983, 1986) suggests that extended limbs on human figures from southern



Figure 2 Tanzanian rock paintings: 1 – Kolo style figure from Pahi 40, 2 – Bushman style figure from Pahi 53 (both after M. D. Leakey 1983).

Africa reflect Khoisan perceptions of the body in trance. Neither of these interpretations can be discounted, but another, more intriguing explanation is possible. If we accept M. D. Leakey's (1983) view that rock art captures the 'essential' qualities of its animal and plant subjects, should we not assume that humans are being depicted in the same manner? This being the case, the two styles of human figures could actually be showing the 'essential' physiognomic features of strikingly different eastern African peoples: from short and stocky to tall and linear. The different styles for depicting human form may be showing the actual diversity of later Pleistocene and Holocene eastern African populations.

Palaeoanthropological evidence can be used to support the idea that stylistic diversity in rock art is representative of human diversity in eastern Africa. Little data exist from the Tanzanian rock painting region, but terminal Pleistocene and Holocene archaeological sites located further to the north and west have yielded skeletal remains of populations fitting both the 'Kolo' and 'Bushman' stylistic models.

If some of the eastern African rock paintings date to the terminal Pleistocene or early Holocene, the tall 'Kolo' peoples may represent groups like the lakeshore fishing folk thought to have been in eastern Africa at least as early as 10,000 BP (Barthelme 1977, 1981; Owen *et al.* 1982). Human remains from the lakeshore sites of Lothagam, the Lake Turkana Galana Boi beds and Ishango are tall and linear, exactly the features depicted in the 'Kolo' style paintings. This link between the 'Kolo' style paintings and skeletons from the lakeshore sites is supported by other evidence. Archaeologists have proposed that ancestral populations of either Nilo-Saharan (Sutton 1974, 1977) or Afroasiatic language-speakers could have been

responsible for these lakeshore sites; and modern speakers of both linguistic phyla are among the tallest and most slender people of eastern Africa (Hiernaux 1968, 1975).

The role of tall, linearly built populations in eastern Africa's prehistory has always been debated. Traditionally, they are viewed as late migrants into the area. But as there is better palaeoanthropological and linguistic documentation for the earlier presence of these populations than for any other group in eastern Africa, it is far more likely that they are indigenous eastern Africans. I have argued elsewhere (Schepartz 1985) that these prehistoric linear populations show resemblances to both Upper Pleistocene eastern African fossils and present-day, non-Bantu-speaking groups in eastern Africa, with minor differences stemming from changes in overall robusticity of the dentition and skeleton. This suggests a longstanding tradition of linear populations in eastern Africa, contributing to the indigenous development of cultural and biological diversity from the Pleistocene up to the present.

'Bushman' style figures may represent another biocultural aspect of the eastern African prehistoric populations. The choice of the label 'Bushman' is unfortunate. These 'Bushman' style drawings, while certainly more curvaceous than the 'Kolo' figures, lack all of the distinctive features of the southern African art such as exaggerated steatopygia or semi-erect, 'barred' penises. Also, the mode of representing the head is quite different (P. V. Tobias, personal communication 1984). In the eastern African 'Bushman' examples, the head is often an oversized, featureless circle, while in southern Africa heads are much more realistically portrayed or take the unusual form of a hook which, according to Lewis-Williams (personal communication, 1986), may simply be what remains of a more elaborate head. When these details are taken into account, there appears to be little, aside from diminutive stature and stockiness, that is comparable between the eastern African 'Bushman' style figures and the southern African Bushman art. Still, if the eastern African rock art is reflecting the variation of the human populations, there should be palaeoanthropological evidence for short, stocky people in eastern Africa. Interestingly, none of the terminal Pleistocene or early Holocene sites in eastern Africa provides a good skeletal analogue for the 'Bushman' style drawings. Instead, the best skeletal analogue for the 'Bushman' style paintings comes from middle to later Holocene sites in the central Rift Valley of Kenya (Bromhead's Site, Naivasha Railway Rockshelter, Njoro River Cave, Lobo). The females from these sites are considerably shorter and stockier than the remains from the lakeshore fishing sites, and their crania are more brachycephalic (rounded). If the paintings are providing us with accurate images of eastern African populations, this suggests that the shorter, stockier individuals portrayed in the 'Bushman' style paintings are either poorly represented in the palaeoanthropological record or, more likely, were not present in eastern Africa until later in the Holocene.

Conclusion

This paper has examined the evidence for the proposed presence in eastern Africa of Khoisan or 'Khoisanoid' populations during the later Pleistocene and early Holocene time period. This 'Khoisan scheme' is a conventionally accepted idea, thought to be supported by several different lines of evidence. Taken as a whole, the data seem relatively convincing, but when each type of evidence is evaluated separately, it is evident that there is little substance to the 'Khoisan scheme' in eastern Africa.

The human skeletal evidence does not document the presence of populations characterized by a Khoisan morphology in eastern Africa. The only two individuals (Homa 4 and Singa) that have been suggested as illustrating a Khoisan pattern are either fragmentary, pathological or of uncertain antiquity. Morphological analysis of these specimens links them with other eastern African populations from the later Pleistocene and Holocene.

The currently available biological data on eastern African 'remnant' groups like the Sandawe and Hadza hunter-gatherers do not support the 'Khoisan scheme' either. Eastern African hunter-gatherers do not appear to be very similar to Bushmen (San), but instead show just as strong, if not stronger affinities with their Bantu-speaking neighbours, or with other populations, such as the Nama Hottentots (Khoi), that have high levels of Bantu admixture.

Archaeological evidence for an early Bushmanoid habitation in eastern Africa is also not very strong. Comparison of the Tanzanian and southern African rock art reveals that most of their common features can be related to broadly similar codes of behaviour and interaction with the environment. Links between the microlithic assemblages of southern Africa and eastern Africa, once thought to be discernible, are now dismissed as the complexity and variety of the eastern African technologies is better understood.

The linguistic reconstruction of eastern African prehistory and the linguistic analysis of modern eastern African languages would seem to provide the best support for the 'Khoisan scheme', as the independent development of languages with clicks (Hadza and Sandawe) in eastern Africa is unlikely. However, the linguists are hardly in agreement over the basic features of the Sandawe and Hadza languages or the relationships of these languages with the Khoisan language phylum. Comparisons that appear convincing today may become less so in the future when we know more about the languages of eastern African hunter-gatherers. We also have no data on the antiquity of the eastern African click languages and so suggestions that they represent the earliest indigenous eastern African languages are without foundation. At present, we do have linguistic reconstructions that place Nilo-Saharan and Afroasiatic language speakers in eastern Africa during the early to middle Holocene.

The answer to the question 'Who were the later Pleistocene eastern Africans?' is not 'They were large Khoisans'. The overwhelming conclusion that can be drawn from this discussion is that the concept of an early widespread Khoisan peopling of eastern Africa is an overly simplistic scheme based on unsupportable hypotheses or inconclusive data. There is no justification for correlating present-day Khoisan peoples with the prehistoric eastern Africans. The San may provide our best living examples of the African hunter-gatherer lifeway, but it is fallacious to assert that all early hunter-gatherers were like them. Undeniably, there are indications that the prehistoric populations of eastern Africa were linguistically, archaeologically and biologically diverse, and we should include the data cited in support of the 'Khoisan scheme' in order to understand the breadth of this diversity. However, our best data bearing on the question of 'Who were the later Pleistocene and early Holocene peoples of eastern Africa?' is ultimately the surviving skeletal remains of these populations.

Acknowledgements

The author was able to conduct the research for this paper through the generosity of the Boise Fund, University of Oxford; the U.S. National Science Foundation grant BNS 82-15019; the Foundation for Research into the Origins of Man; the Leakey Foundation; the Swan Fund, University of Oxford; and the Women's Research Fund, the Center for Continuing Education of Women, the Department of Anthropology and the Rackham School of Graduate Studies of the University of Michigan in Ann Arbor. Individuals who facilitated work on specimens include R. E. F. Leakey and E. Mbua of the National Museums of Kenya, C. B. Stringer and R. Kruszynski of the British Museum (Natural History), and M. O. Smith of the University of Tennessee. M. H. Wolpoff, D. S. Carlson, W. R. Farrand, F. B. Livingstone, H. T. Wright, K. R. Rosenberg, B. Mannheim, A. Edwards and D. W. Phillipson offered helpful comments and suggestions. The figures were skilfully drawn by Shannon Fie.

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