

Four thousand years in the Blue Nile: Paths to inequality and ways of resistance

Cuatro mil años en el Nilo Azul: Caminos a la desigualdad y vías de resistencia

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Recibido: 01-10-2003

Aceptado: 15-10-2003

ABSTRACT

*As general conclusions of the papers of the Blue Nile Project dossier herein, some ideas are suggested about the prehistoric societies investigated by Spanish archaeologists in Central Sudan during the 1990's. The project included a survey of the Wadi Soba-El Hasib region east of Khartoum and excavations of two Mesolithic sites and one Neolithic site in the Wadi Soba area. Data from different sources are combined in an attempt to construct a historical narrative. Vestiges of some cultural hiatuses were noticed in the region, namely at the beginning and the end of the Mesolithic period, the latter involving the emergence of social stratification and the decline of women status. The archaeological gap at the end of the Neolithic period is interpreted as being a consequence of hindrance to social division. Early cultures of resistance and population movements towards the Ethiopian escarpment as a refuge area are proposed as *longue durée* processes among Nilo-Saharan of the Eastern Sahel.*

RESUMEN

Como conclusión de los trabajos del dossier 'Proyecto del Nilo Azul' en este volumen, se sugieren algunas ideas sobre las sociedades prehistóricas investigadas por arqueólogos españoles en el Sudán central durante los años noventa. El proyecto incluyó la prospección del área de Wadi Soba-El Hasib al este de Jartum y la excavación de dos yacimientos mesolíticos y uno neolítico en la zona de Wadi Soba. Se esboza una narrativa histórica a partir de datos de orígenes diversos. Se advierten indicios de varias discontinuidades culturales en la región, tanto al comienzo como al final del período mesolítico, la última coincidiendo con el comienzo de la estratificación social y la disminución del estatus femenino. El vacío arqueológico de finales del Neolítico se interpreta como consecuencia del rechazo a la división interna. La presencia antigua de culturas de resistencia y movimientos hacia el escarpe etíope como zona de refugio, podrían ser procesos históricos de larga duración entre las poblaciones nilo-saharianas del Sahel Oriental.

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KEY WORDS

Nilo-Saharan, Social stratification, Holocene, Central Sudan, Western Ethiopia

PALABRAS CLAVE

Nilo-Saharan, Estratificación social, Holoceno, Sudán Central, Etiopía Occidental

1. On the origin and meaning of the Mesolithic cultures

The Mesolithic sites surveyed and excavated in the Blue Nile area by the Spanish archaeological project, whose study results have been presented in this volume (Fernández *et al.* 2003a, 2003b), belong to a Holocene Saharan-Sahelian “technocomplex” called in several different ways. An “archaeographic” successful denomination has been “Khartoum-Horizon Style” (Hays 1971: 134) which refers to the uniform pottery decoration that was first discovered at the Khartoum site (Arkell 1949a). The idea is that the same pottery style was diffused to many different groups in the Sahara and Sahel, whose previous existence before the pottery diffusion is induced from their different lithic technologies (Hays 1971: 136). Recent archaeological data reveal the existence of a short “Pre-ceramic” or “Epi-palaeolithic” phase in the Sahara, chronologically placed in the interval from the onset of humid conditions and the spread of pottery techniques. Evidence has been collected at northern Mali and Niger (Camps 1974: 214-6), the Egyptian eastern desert (Gabriel 1977), the Eastern Sudan (Marks 1987; Elamin 1987) or the West Lybian Sahara (Cremaschi and Di Lernia 1998; Garcea 2001). In the latter region the cultural phase, called “Early Acacus”, is dated to c. 9800-9000 bp. The lithic industries of the period are characterised by a high frequency of backed bladelets as it is also the case in contemporary industries of the Maghreb (Capsian) (Tixier 1963; Camps 1974) and the Egyptian Nile valley (Qarunian, Shamarkian) (Wendorf 1968; Wendorf and Schild 1976).

Around 9000 bp, however, human groups all along the Sahara adopted the pottery production with a strikingly analogous decoration style that shows hardly any differences over so a wide region. The same rocker impression technique (RK) was used from the Atlantic areas, e.g. in the Western Sahara (Almagro 1946: 200-1) or Mauritania (Commelin *et al.* 1992: fig. 3, a-f), to near the Red Sea coast, as in the Saroba phase of the Khashm el Girba area (Fattovich *et al.* 1984: fig. 3; cf. Arkell 1949a: 116; Garcea 1993: 189). The technique of alternately pivoting double stamp which is a variant of the general rocker impression system, is also found throughout the Sahara and the Nile (Garcea 1998: 93). Dotted

wavy line (DWL) was also widely spread over the desert area, but it appeared in the Nile valley at a later date (Ibid.; Caneva 1983; Caneva and Marks 1990; Caneva *et al.* 1993).

The reasons for this quite rapid process of expansion of one single cultural item over such a vast area (more than 6000 km wide) still await elucidation. Since in most of the known sites the pottery horizon is the first cultural context after the Late Pleistocene demographic hiatus, the problem of pottery origins is actually the problem of the human re-occupation of the Saharan area. Comparable cases of rapid ceramic diffusion, such as the Linear Danubian pottery in Early Neolithic Europe (Whittle 1985) or the Bantu Urewe Ware in the Early Iron Age of Eastern Africa (Phillipson 1977a) have been interpreted as the result of the expansion of human groups throughout a wide geographical area.

In two widely circulated and classical articles, J.E.G. Sutton (1974, 1977) interpreted the rocker pottery technocomplex as the first migration of Negroid peoples, speaking ancient variants of the current Nilo-Saharan language phylum, outside their homeland in Central Africa (the second would be the Bantu expansion, several millennia later). The expansion was propelled by the onset of newly humid conditions in the Sahara, and the migrant groups consequently adopted an economic orientation based on river and lake resources, hence the name “aqualthic” proposed for the cultural complex. Sutton’s belief that the movement was also pushed by the expansion of tropical forest in Central Africa (Sutton 1977: 27), seems to be confirmed by more recent data. After being confined to a few “sanctuaries” during the maximum glacial conditions at the end of the Pleistocene, the rainforest expanded to reach its highest extension about the mid-Holocene period (Lieth and Werger 1989). According to a well-known yet controversial theory (Bailey and Headland 1991), tropical forest was an inaccessible niche for humans before the establishment of a Neolithic technology. Therefore, foraging groups would have reacted to the forest growth by migrating towards more open areas and in the band immediately north of “Middle Africa” this direction would be northwards.

As for the physical anthropological features, the idea of a fundamentally Negroid stock spreading through the Sahara during the Holo-

cene, which was common when Sutton wrote his articles (after data on single skeletal variables from Early Khartoum and other sites, cf. Derry in Arkell 1949a: 30-3), was later rejected on the basis of multivariate data supporting the presence of northern Mechtoid populations (Petit-Maire and Dutour 1987). Recent investigations based on genetic variables have shown, however, that both in the Nile and the desert areas there is currently an almost continuous gene variation between Negroid features prevailing in the south and Caucasoid in the north (Tay and Saha 1988; Fox 1997). Irrespective of this fact being interpreted as coming from gene flow or local selection, the scenario is one of gradual variation throughout the area. The earliest rock art images of the Central Sahara, the "Round Heads" style roughly contemporaneous to the Mesolithic period, show human figures usually interpreted as "Negroid" (Sansoni 1994; 1998). In the following, Bovidian period dated after the beginning of animal husbandry in the VII millennium bp, the presence is attested of different racial types in the region, Negroid being allegedly earlier than the Europoid figures (Muzzolini 1986; Gally 1987).

From a linguistic point of view, the relations between the current Nilo-Saharan languages and the Saharan-Sahelian expansion have been but strengthened by several authors in the recent years (Bender 1982; Blench 1993: 136; Ehret 2000: 281-9). Archaeologically, the southern origin seems also reinforced, as the great antiquity of bone harpoons (the other *fossil directeur* of the complex, besides pottery) and generally of the aquatic economic adaptation has been recently reported for Central Africa, with the early dates for the R.D. Congo sites such as Ishango and Katanda (McBrearty and Brooks 2000: 503-6, 510-13). This greater age appears to match and even supersede the alleged significance of the Nile valley or the Eastern African lakes as other areas of origin for the Saharan Holocene cultural events (Stewart 1989).

There have been quite a number of theories on the causes of pottery invention and its first functions. Most authors have insisted on the new possibility of processing food by boiling and steaming that render meal more digestible and palatable (e.g. Haaland 1992: 48). Among the Mesolithic groups of the Sahara and Nile Valley the meal could have consisted of gath-

ered plants (Ibid.), mostly cereals whose seeds have been found in some archaeological deposits (Barakat and Fahmy 1999) and impressions were recorded on sherds from several excavated Mesolithic and Neolithic sites (Magid 1989, 1995, 1999, 2003; Stemler 1990). Also the fish has been naturally proposed as being processed in the form of stews or soups in the pottery vessels (Sutton 1974; Stewart 1989; Haaland 1992, among others). Plant gathering and domestic pottery making have been usually interpreted as female activities, on the basis of widespread ethnological data (Murdock and Provost 1973: table 1). About fishing, information exists that today is mostly, and thus was probably in the past, a quasi-masculine activity up to 82% of the African study cases (Ibid.: table 3). Men perform most of the current fishing activities in the Sahel and the Lakes areas, though some cases are known of female participation as among the Nuer (Murdock 1967: 188). Nonetheless, in some of the more traditional groups of the Ethiopia-Sudan border formerly called "pre-nilotes" (see map in Fernández *et al.* 2003a: fig. 1), such as the Gumuz, Meban or Koma, fishing is a predominantly female task (Grottanelli 1948: 300; Cerulli 1956: 18-9).

The contribution of women to fishing being only probable (Barich 1998: 108), their nearly certain association with pottery and food-plants makes a good case for an important female role in the Mesolithic expansion. A broad system of women exchange marriage has been advanced as a possible explanation for the similarities of Saharan pottery decoration (Caneva 1988b: 369). If decoration and generally stylistic behaviour may be considered as a system for information display, aimed at a target population group that both need and can decode the messages (Wobst 1977), then the symbols embedded in the pots could be "read" from the Atlantic Ocean to the Red Sea. One is tempted to imagine one single shared ideology for all that vast area. A distant glimpse of this ideological domain can be caught in the strange scenes of the Round Heads style of rock art from the Central Sahara. Here male figures outnumber women but these appear often playing a prominent role (Sansoni 1994: 208, 1998: 149). Sometimes women are represented next to hemispherical containers with probable seeds, or dancing in "worship" scenes, their bodies richly decorated with

motifs (scars?) that remind the ceramic decoration repertoire (Barich 1998: 112-3). Regular association of motifs on pots and on the human body has been reported in Africa, as also the possibility that scarification was one of the primary arts of the continent (Barley 1994: 128-32; Rubin 1988: 15). Moreover, early pottery excavated at Nabta in the Egyptian western desert has been ascribed a social and symbolic function because of its scarcity (Close 1992: 162-3), and the long tradition of Sudanese finely decorated pottery that continues until the Meroitic and even the Christian period, has been also interpreted as evidence of its probable ritual purpose (Edwards 1996: 74-5).

Women and children are clearly over-represented in the meagre funerary evidence known from the Mesolithic period. At the Sudanese site of Saggai, four out of five excavated burials belong to women (Coppa and Macchiarelli 1983: 118-22), and the few graves excavated in the Sahara, for instance at Uan Muhuggiag (Libya) and Amekni (Algeria) belong also to women and children (Barich 1998: 111). At the Egyptian Neolithic site of Merimda Beni Salama, the exclusive internment of women and children has been interpreted as a probable indication of matrilineality (Hassan 1988: 169). In Nubia, women also played an important role in Early Neolithic society, as it is evidenced by the almost exclusive female and children burials in El-Barga cemetery near Kerma (Honegger 2003: 289; pers. comm.) and the prominent location of some female graves in the Kadruka 18 cemetery (Reinold 2000: 80-1, 2001: 6). Sometime later, data from the small Kerma cemetery of Abri in Northern Sudan (Fernández 1982: 289-302), where women graves are more richly furnished than men burials, suggest the probable persistence of female status in the rural areas far from the power centres such as the Kerma capital itself.

2. The Mesolithic period in the Blue Nile region

The survey has revealed very few data on the Palaeolithic period in the region. The few Middle Palaeolithic remains found suggest that the area was not totally uninhabited, yet they do not add much to what was already known from other few localities, such as Singa or Abu Hugar (Arkell 1949b: 45-7, pl. 27: 5-7). No Upper Pa-

laeolithic sites were recognised, though lithic tools considered as typical of that period are more abundant in the Mesolithic sites of the wadi at east than in the river ones, maybe as a result of cultural influences from Eastern Sudan where Late Palaeolithic industries have been recorded (Elamin 1987; Marks 1987).

Geochemical evidence from the basal levels of El Mahalab (EM) site suggests that climate was wetter before 8000 bp than in the following years (Lario *et al.* 1997). It seems that the whole research area was almost empty before the eighth millennium, probably because of frequent Blue Nile floods and the formation of swampy areas close to the riverbed and in the wadis (Wickens 1982: fig. 6). Significantly, most dates from other Mesolithic sites in the Khartoum region are also younger than that date, the few earlier ones (from one single site, Sarurab, cf. Khabir 1987) being not very reliable as probably not associated with the cultural remains (Caneva 1999: 33). Six dates from Abu Darbein near Atbara in Eastern Sudan are between 8640 and 8330 bp (Haaland and Magid 1995: 49), this being perhaps another indication of the pre-eminence of eastern influences on the area. Dates from the scarce sites known south of Khartoum hint at an even later date for the Mesolithic adaptation: e.g. 7470-7050 bp at Shabona (Clark 1989: 389). Furthermore, not one single important Mesolithic site was found during our exploration of the Blue Nile area from Wad Medani to Singa (Fernández *et al.* 2003a: sites nos. 85-6, 92). Several Mesolithic-like sherds were found by the author in a recent excavation in Ethiopia near the Sudanese border (Bel Kurkumu rock shelter in Assosa, Benishangul), in a level dated to c. 5000-4500 bp. A slightly earlier chronology has been proposed for the few wavy line sherds discovered in the Lake Turkana basin (Phillipson 1977a: fig. 16, 10, 1977b: fig. 19, 3). All this evidence, albeit scanty, hint at a Saharan rather than a Central African origin for the Early Khartoum culture, which thus probably begun at a later date than in the Mesolithic core area (cf. Close 1995: table 3.1).

What clearly distinguishes the Khartoum region, when compared with neighbouring areas, is the abundance of incised wavy line (WL) over other decoration types, namely rocker impression which is characteristic of other regions. WL is also found in other Nilotic areas, but quite less

frequently: 4% at Shabona (Clark 1989: fig. 12), 11% at Abu Darbein (Haaland 1995: 113) and around 16% in the Dongola reach (Shiner 1971: 141). Some of our surveyed and excavated sites, such as Karnus or Sheikh Mustafa (SM), have percentages of WL amounting to more than 60% of the pottery sherds (see Fernández *et al.* 2003a: table 5). A high frequency has also been recorded at the Early Khartoum site (Mohammed-Ali 1982: 76). Our seriation results further suggest that even earlier sites producing only WL pottery without the rocker variety could exist and be found in the future (Fernández *et al.* 2003a: fig. 46). That WL technique was invented in this region can be confidently postulated and perhaps it is no coincidence that the undulating lines originated in the best-watered region of all the aqualithic complex extension. Later, the same symbol was used to represent water in the Egyptian hieroglyph script (Wilkinson 1992). The ensuing gradual substitution of RK for WL as the main decoration technique, which is evidenced by seriation and stratigraphical data both in the Blue and the main Nile, may be a reflection of progressive cultural influences from the Saharan area. Also the early arrival of DWL pottery to the Nile, attested at some of our sites, suggests that Saharan connections existed during most of the Mesolithic period. Culturally, the Central Sudanese area ended up by losing its originality and integrating itself in the larger desert region. A few of the sites discovered in the survey can be associated with a later phase of the Mesolithic period in the region, characterised by the vanishing of WL pottery and the abundance of RK and DWL types (Caneva and Marks 1990: 21-2; Caneva *et al.* 1993: 247-8).

In the light of the distribution of Mesolithic settlements over the Blue Nile landscape, a model of seasonal movements between the river and wadi areas has been inferred. Probably as the Nuer in recent times (Evans-Pritchard 1940), the groups moved towards the river and split up into small parts at the beginning of the dry season, gradually concentrating on the last available water sources at the end of the season. Small and big archaeological sites recorded in the riverine area could correspond to camps at the beginning and end of that period. More permanent villages seem to have been erected during the rainy season and the river flooding, when people would leave the alluvial plain and move

to the wadi area where elevated land made settlements more feasible. Analysis of fish remains (Chaix 2003) and pollen (López and López 2003) indicate the proximity of deep waters at the wadi site (El Mahalab). Also the ceramic seriation and settlement patterns (Fernández *et al.* 2003a: section 6) agree with the model, which had been already proposed on the basis of ethnographic analogy (Clark 1989: fig. 14).

The copious material inventory found at most of the sites suggests that groups came every year to the same spot, where they probably kept safe part of their material paraphernalia, for example the heavy stone grinders, when they moved to the new camps and villages. Perhaps they also abandoned some of their pots, and that is why we now find so many sherds on the sites. Some 150 sherds per cubic meter of archaeological deposit were recorded at Sheikh Mustafa, and even more, 275 sherds per cubic meter at El Mahalab. The mean size of the sherds at Sheikh Mustafa site is 7.3 cm², which represents a mere 0.4% of the total area of a hemispherical bowl with 35 cm in mouth diameter (approx. mean value, see Fernández *et al.* 2003b: table 4). As an average value, then, each pot broke in 250 fragments. Could it have been the result of a deliberate process? As Nigel Barley puts it, "in Africa death involves the breaking of pots while marriage involves making them" and it is the very friability of pots which makes them "a source of ritual power" (Barley 1994: 92, 112).

Besides the aforementioned synchronic differences, historical trends can also be inferred. Multivariate statistical analysis of in-site artefacts distribution has allowed to compensate partly for the deflation processes operating since Prehistoric times, and some of the original stratigraphic array could be reconstructed linking data from the central and peripheral areas of each site (Fernández *et al.* 2003b: fig. 11, *passim*). Results of ceramic seriation offer some evidence of a gradual shift of settlements from the wadi to the river towards the end of the Mesolithic period, possibly influenced by the climatic deterioration at the time. Faunal remains also give some clues about a general humidity reduction during the Mesolithic period. Thus, fish bones are more abundant in the lower levels excavated at Sheikh Mustafa, dated to c. 7930 bp, than in its upper levels and in El Mahalab, dated to 7705-6940 bp (Chaix 2003). The tendency is further confirmed

by a sandy level in the upper levels of El Mahalab site indicating arid conditions sometime between c. 7400 and 6900 bp (Fernández *et al.* 2003: section 1).

The lithic material analysis in Sheikh Mustafa and El Mahalab also shows a change from many backed points and few lunates to the opposite, many lunates, especially broad types, and few backed points. The trend continued during the Neolithic period when broad lunates are predominant. The change has been interpreted as related to climatic change and consequent game availability. Many of the narrow backed bi-pointed bladelets from the earliest times, particularly frequent in the lower levels of Sheikh Mustafa, could have served as fishhooks, since bone harpoons have not been found. Both the faunal analysis (Chaix 2003) and the palaeodietary analysis of human bones (Trancho and Robledo 2003) from the same level indicate abundant fish consumption. Some points and narrow lunates were probably used as sharpened arrowheads, especially effective to kill big animals, while broad lunates were more efficient as chisel-ended arrowheads to hunt smaller and faster game (Clark *et al.* 1974; Nuzhnyi 1989). Faunal data from the three sites show a constant reduction in game size from the earlier to the later Mesolithic sites (SM to EM) and then in the Neolithic site of Sheikh el Amin (SA) (Chaix 2003; Fernández *et al.* 2003b: fig. 66).

3. The transition to a Neolithic economy

While it has been commonly held that the Khartoum Neolithic developed out of the Khartoum Mesolithic, there is a paucity of radiocarbon dates and archaeological information from the period of transition that has puzzled researchers for many years (Marks *et al.* 1985: 262-3). Later inquiry came to fill the gap in a certain way, with a few sites dated to the second half of the seventh millennium bp: El Qala'a and Kabbashi on the main Nile north of Khartoum (6620-6150 bp; Caneva *et al.* 1993: table 1) or the middle levels of Shaqadud cave in the northern Butana (Caneva and Marks 1990). One of the radiocarbon dates from the Sheikh Mustafa site falls within the referred period (6295 bp), but it contradicts the evidence coming from the rest of the accepted dates and the general earlier appearance of the material culture at the site.

A comparison of the ceramic seriation models proposed for the Mesolithic and Neolithic sites in our survey (Fernández *et al.* 2003a: figs. 46 & 56) shows that both at the end of the first period and the beginning of the second, the pottery decoration was predominantly based on the same technique, namely rocker impression. Notwithstanding, most of the other variables are different: the Neolithic pots are more finely made, with thinner walls, burnished and often slipped outer surfaces, and new smaller vessel types and decoration types appear just from the beginning, such as incision or black topped. The overall impression about pottery at hand is that of being of a quite different kind. Even the old rocker impression looks now mutated, combining different and finer comb-tools.

A significant shift also occurs in the settlement pattern: not one single important Mesolithic site was inhabited during the following period. Most, if not all, Neolithic settlements were occupied then for the first time. Although Mesolithic sherds have been found in some Neolithic sites (Arkell 1953: 68; Krzyzaniak 1978: 171), they come from small sites that were probably short-term camps such as those we have found during our research (Fernández *et al.* 2003a, fig. 48). Even if we take into consideration the case of the Sheikh el Amin Neolithic site, where our excavations have revealed a certain amount of Mesolithic DWL sherds all over the site, evidence of local transition between both periods does not seem to be at hand. My general impression is, then, that an important change took place in the region with the arrival of new groups with a different, livestock herding economy.

Climatic changes going on around 6000 bp represent the "great mid-Holocene arid phase" in the Sahara (Muzzolini 1995: fig. 30), which corresponds to the lower sea surface temperatures recorded after 5900 bp (Hassan 2002: 322) and the "Post-Late Neolithic arid phase" of the Nabta Playa record in the South Western desert of Egypt (Schild and Wendorf 2002: 24). This deterioration was perhaps the origin of a contraction of the aquatic economy that had been predominant in Central Sudan throughout the precedent millennia. In fact, only the riverside Neolithic settlements such as Shaheinab or Geili have significant fish remains in their faunal collection (Krzyzaniak 1978: 165; Gautier 1988). In Sheikh el Amin, though a shell fishhook was

found during the excavation, fish remains are insignificant (Chaix 2003: table 12). When facing climatic deterioration, Africans are forced to choose “between their homes and their environment” (David 1982: 50), and the possibility that some of the Mesolithic people migrated further south where humidity was still high, cannot be ruled out.

The Lokabulo tradition, named after a rock shelter in Eastern Equatoria some 1000 km south of Khartoum and dated to 3800 bp, even though poorly known because of the research disruption caused by the recent war, presents some characteristics reminiscent of the Central Sudan Mesolithic (David *et al.* 1981). The pottery is quartz tempered and decorated mostly by rocker impression (though excavators only recognised the spaced zigzag pattern as such), including some DWL sherds (Ibid.: fig. 6, pl. 1). Peter Robertshaw warns against paralleling the same decoration technique (generally, comb-impression) from distant areas, arguing that Lokabulo sherds differ from Jebel Moya ones and thus rejecting relations of southern and central Sudanese prehistoric cultures (Robertshaw 1982: 92). Nonetheless, central Sudan Mesolithic rocker pottery is also clearly distinct and earlier to the simple impressed Jebel Moya pots, and Robertshaw’s comparison of Lokabulo and Kenyan Kansyore pottery, from which a part appears to be also made by simple impression, seems neither substantiated (Ibid.: fig. 2). The faunal remains of Lokabulo consisted only of hunted wild fauna and the excavated deposits yielded quite a good number of mollusc shells, though they were devoid of fish remains (David *et al.* 1981: 11-19; David 1982: 52-3). Yet, linguistic data suggest the presence of a food-producing economy in Southern Sudan since the third millennium bc (Ehret 1982: 28) and thus contradict the scenario resulting from Lokabulo and other sites in the Eastern Equatoria, which implies a Later Stone Age hunting economy well into the first millennium AD (David 1982: 53). The more western site of Jebel Tuky, with a younger date (2130 bp), produced large domestic cattle (Ibid.: 51) and rocker impressed pottery which Randi Haaland has identified as similar to the Khartoum Neolithic tradition (Haaland 1992: fig. 11, 61-2).

Some unpublished data from the recent Spanish research directed by the author in Benis-

hangul, West Ethiopia, at half way between the Khartoum and Eastern Equatoria regions, are of possible relevance here. Excavations at several rock shelters near Assosa town yielded abundant quartz tempered, Mesolithic-like sherds with WL, DWL and especially RK decoration. As in the Lokabulo site, at the Bel Kurkumu rock shelter pottery appears in the upper part (radiocarbon dated to 4965-4470 bp) of a Late Stone Age level with an undiagnostic flake and bladelet quartz industry with end scrapers and rare microliths. The same pottery types continue in the upper level, together with a similar industry yet with less formal tools, dated to 2020-875 bp. In another excavated shelter in the nearby, RK and DWL sherds appear together with different pottery types, dated to the beginning of the second millennium AD. The economy of these groups is not yet known since bones were not preserved in the shelters acid soils, neither plant remains were found in the deposits and the pottery sherds. A fragmented “net-sinker” in pottery (Haaland 1992: fig. 3) found in the shelter could indicate some fishing practices. Anyway, the persistence of old pottery types up to the first millennium AD recalls the Eastern Equatoria evidence, as also the archaic features of the “pre-Nilotic” peoples in the border region between Sudan and Ethiopia (Grottanelli 1948). Some of these traits, such as the relevance of plant gathering and fishing, lack of big livestock, matrilineal kinship remnants, incisor teeth extraction (Murdock 1959: 170-80; Bender 1975: 9-19) and even the racial morphological characteristics (Arkel 1949a: 114) remind to some extent of the Khartoum Mesolithic features.

The site of Sheikh el Amin shows important differences when compared with other known Neolithic sites in the region. First of all it is located in the Butana plain far from the Nile, and this means a savanna economic orientation with very little fish exploitation. Livestock also appears to have been of reduced relevance to its inhabitants, since faunal remains are mostly of hunted wild fauna (Chaix 2003: table 12). After the aforementioned crisis at the beginning of the Neolithic period, the climate became humid again as the faunal (e.g. *Phacochoerus*) and the vegetal remains (e.g. *Carex*, *Celtis* and *Sorghum*, see Magid 2003: table 1) suggest. Food-plants exploitation seems to have been intensive in this site, where 30 plant impressions on pot-

tery have been recorded. The proportion of sherds with plant impressions, nonetheless, is not higher but lower than in the Mesolithic sites, with respect to the total number of recovered and examined sherds (0.071% in SM, 0.085% in EM, 0.053% in SA). If the greater variation in plant species at SA is not an effect of the bigger pottery sample analysed (56761 sherds, as contrasted with 7001 in SM and 4680 in EM), or of any other factor concerning pottery making and plant impression processes, it would indicate a stronger orientation to gathering activities during the Neolithic times in the Butana plain. The large quantity of stone grinders excavated at the site, one of the biggest figures for the entire region, also hints at the same explanation. Their lower number at the later parts of the site possibly indicates the decreasing importance of plant exploitation when climate changed towards the current arid conditions in the Late Neolithic period. As regards the much debated issue of early plant cultivation during the Mesolithic and Neolithic (see recent arguments in Haaland 1996, 1999; Magid and Caneva 1998), the wide variation in species of our data, with 10 different plants identified in 39 pottery impressions, suggest a broad-spectrum exploitation of the environment, oriented to seeds and fruits, rather than a concentrated strategy on a particular cereal plant, even if sorghum is the most represented species as it also happens in other Sudanese sites (Magid 1989, 2003; Magid and Caneva 1998).

4. The gap in the archaeological record: retreat or resistance?

The Neolithic societies all over the Sahara underwent important changes towards “complexity”, as it has been often called by archaeologists and historians, but it would rather be described as “inequality” (Paynter 1989; McGuire and Paynter 1991; Price and Feinman 1995). As it is argued from anthropological data, the tending of animals, particularly cattle involves such an assiduous commitment that there is an ubiquitous tendency for the herds to be the private property of extended families inside the clans. This involves a major transformation in the social relations of production and the ideology of prestige (Ingold 1980). Archaeologically, the appearance of independent animal enclosures in the first farming societies has been interpreted as

evidence of some kind of private property. In the Egyptian sites of Merimda and El Omari this feature goes together with the separation of grain silos in the huts, as opposed to the communal silos recorded at the earlier site of Fayum (Hassan 1988: 154-5; Midant-Reynes 2000: 116). In the Saharan area, Bovidian rock art scenes do change with respect to the previous Round Head style, with an under-representation of the female figure in the drawings that conforms to the emergence of a pastoral ideology that attributes a greater meaning to the masculine figure (Barich 1998; Gifford-Gonzalez 1998).

Even though no evidence of that kind –individual silos or enclosures– has been detected in the Khartoum Neolithic, several indications point to the inception of social inequality taking place also in this area. At the Neolithic cemetery of Kadero, both location and furniture quantity of the graves were used to differentiate the dead (Krzyzaniak 1991: table 1, figs. 2-3), most probably according to their social status (Binford 1971: table 4). The importance of men at the site is manifest, with 20 out of 28 adult graves whose sex could be ascertained, and six out of the eight richest tombs belonging to male individuals (Krzyzaniak 1991: table 2). Important socio-technic artefacts, such as porphyry maceheads were found in all cases associated with adult men graves (Ibid.: 523). The social élite was also ascribed grave furnishings of marine shells and malachite/amazonite objects traded from abroad (Ibid.: 531). The very fact that the two richest grave categories include children could even indicate that prestige was not merely acquired during life but inherited, just as it has been postulated an idiosyncratic feature of hierarchical chiefdom societies (Peebles and Kus 1977). Proof that this process was constantly proceeding in the Central Sudan comes from the cemeteries of Kadada, where only a few centuries later (Kadero is dated to 5900-5000 bp; Kadada to 4800-4600 bp) the graves show an extraordinary array of differences in furniture richness, including human sacrificial secondary burials (Reinold 2000: 70-1).

The site of Sheikh el Amin may be of relevance to this question. It was excavated rather intensively on 140 square meters, yet not any sign of Neolithic human burials was detected. Sherds from pottery vessels considered as prestige emblems and exclusively associated with

graves, such as the flare-mouthed finely decorated beakers (Reinold 2002: fig. 4) weren't found either. Even rhyolite gouges, whose socio-technic character has been occasionally denoted (Haaland 1987: 221) are infrequent in the site, where only 26 pieces were found. In the riverine Neolithic settlement of Shaheinab, 467 pieces were counted excluding those broken to less than half the original size (Arkell 1953: 31). This lack of evidence suggests a more egalitarian organisation of the group than those living at the riverine sites, maybe connected to its economic adaptation, based on hunting-gathering with a small herding component (13.1% of identified bones, cf. Chaix 2003: table 12). Several authors have discussed the difficulties that modern hunters have in making the transition to food production, particularly to integrate herding (Smith 1990; Marshall 2000: 215), on the grounds of current evidence of hunting people living on the edge of pastoral societies (Smith 1998: 26), and the persistence of hunting as a component of generalised pastoralism (Marshall and Hildebrand 2002: 121).

Sheikh el Amin probably represents a short-lived kind of adaptation to the savanna ecosystem, based on multi-resource food procurement in small semi-sedentary villages. Shaqadud cave, a permanent post of hunter-gatherers without livestock until a very late date, could have corresponded to the same adaptation of groups far from the Nile at about the same period (Marks and Mohammed-Ali 1991).

Further cultural and economic changes are visible in the archaeological record several centuries later. Late Neolithic sites investigated during our survey, such as Rabob and Wad el Amin dated to after 4500 bp, present somewhat different features. Surface distribution of artefacts follows a model of "sheet midden" that has been interpreted as the result of seasonally reoccupation of the settlement, with people erecting their tents or temporary huts and choosing the waste zones in different places every year (Sadr 1991: 21-3). The site layout at Sheikh el Amin is different, with cluster midden mounds surrounded by empty spaces –cleared habitation zones– that could correspond to a permanent or at least a "medium" term occupation where people lived for a long time in the same structures (Ibid.). Thus a change to a more mobile economic system is noticeable at the end of the Neolithic peri-

od, which could correspond to the inception of a more intensive pastoral economy in the region as it has been argued by several authors (Krzyszaniak 1978; Haaland 1987; Caneva 1988b).

Ceramic analysis and seriation of the surveyed Neolithic sites demonstrate that there is a fairly substantial continuity both in the pottery manufacturing techniques and decoration types throughout the period (Fernández *et al.* 2003a: fig. 56). Similar models of archaeological type variation have been proposed elsewhere as evidence of uninterrupted cultural and demographic permanence (for the Epipalaeolithic in the Maghreb, see Lubell *et al.* 1984: fig. 3.4). Thus it seems that, contrary to the aforementioned evidence for the beginning of the period, there is not proof of cultural and/or demographic gap during the Sudanese Neolithic as it has been postulated by Haaland (1987, 1992). It does appear more probable that the same Butana Early Neolithic groups from Sheikh el Amin and other sites as El Lahamda (Fernández *et al.* 2003a: section 7), progressively abandoned their sedentary economy adopting a more mobile herding economy. The resultant enlargement of their annual territories induced more frequent contacts with groups of the Eastern Sudan, as it is reflected in the increase of simple impression and scraping decorations on their pots all through the period.

The progressive intensification of arid conditions in the area (Wickens 1982: 44-7; Hassan 2002: 323) was most likely one of the main causes of the higher mobility of the savanna groups. But the riverine areas were still very apt for human sedentary living and yet they appear almost completely devoid of archaeological remains from this period. Later on, a time comes from when there are not known archaeological sites both in the savanna and the river, with the possible exception of some burial mounds (Caneva 2002). The period roughly corresponds to the interval between 4000 and 2500 bp (c. 2500-700 BC calibrated) the latest date marking the beginning of the Napatan-Meroitic periods in the first millennium BC. This "disappearance" of Late Neolithic cultures in Central Sudan has been related to the demise of the Nubian A-Group, both of them probably induced by changes of power balance in Egypt and Northern Sudan, namely the emergence of the Egyptian state and the Kingdom of Kush at Ker-

ma (Caneva 1988b: 371). An external origin has been also alleged by Haaland (1987: 224-231, 1992: 58-61) who presents an interesting scenario of competition between Nilo-Saharan-speaking groups with multi-resource adaptation (Khartoum Neolithic) and Cushitic-speaking specialised pastoralists (Butana-Khashm el Girba tradition). The first would have migrated towards the south, preserving their way of life in more humid ecosystems while the Khartoum region was occupied by the second groups coming from Eastern Sudan. The recent finding in the Khartoum region of tumuli, dated to 3220 bp and with some cross-hatched pottery similar to that of the Nubian Pan-Grave culture in Northern Sudan and the Mokram group in Eastern Sudan (Caneva 2002), ancestors of the present-day Beja Cushitic-speakers (Sadr 1990), appears to be a further support for the hypothesis of culture contact in Central Sudan.

The results of our survey do not endorse, however, such conclusions. Pottery from the Late Neolithic sites bears only some similarities to the eastern wares, and the substantially gradual variation of decoration types during Early and Late Neolithic times seems to continue without important breaks even until the richly-decorated hand-made wares of the Meroitic period (Fernández *et al.* 2003a: section 7). In addition, the language that was written in the Meroitic script at the end of the I millennium BC and the first centuries AD, probably spoken in much of Central Sudan, was not Cushitic but belonged to or at least had some relations with the Nilo-Saharan phylum (Bender 2000: 56).

Archaeological investigations of Sudanese Neolithic graveyards, such as Kadruka and Kadada reveal that a nearly “pre-dynastic” stage was achieved both in Nubia and the central Sudan at roughly the same time, the second half of the 6th and the first half of the 5th millennium bp, i.e. at the end of the 5th and during the 4th millennium BC in calibrated dates (Reinold 2000: 58-85). Yet the transition to state organisation was completed only in the northern region, with the onset of the Kerma kingdom. Significantly, the Nubian Nile Valley, like the Egyptian, meets one important specific pre-condition which Robert Carneiro (1970) argued in his well-known theory on the state origins, namely the “environmental circumscription”. This circumstance is met when a growing population lives in a con-

finied area, delimited by mountains, jungles, deserts or seas (Claessen and Skalník 1978: 13). Extreme deserts did not restrain the Central Sudanese groups and the availability of close suitable and nearly uninhabited lands made it possible for them to avoid the transit to an unequal social organisation.

It is known that hunting and simpler farming communities ubiquitously follow customary strategies to keep to social equality (Clastres 1978). One of them could have been in this case the shift to a more mobile economy, approaching specialised pastoralism. Instead of adopting agropastoral strategies in the alluvial plains as the Egyptian and Nubian communities did, groups in the Sahelian Nile chose to flee from the river and wander the increasingly arid savannah. (Could this circumstance be a main reason for the time lag of agricultural practices in the region?) African nomadic communities have often been considered as intrinsically egalitarian polities, being frequently without centralised authority and endorsed with a “democratic” ideology (Bonte and Galaty 1991: 23-4). The material basis of this condition lies on the fact that livestock wealth, self-reproductive and mobile, cannot be easily monopolised (Ibid.) and that it is difficult for pedestrian herders to exploit the labour of others on a mass scale (Goldschmidt 1979: 23). One of the best-known historical examples of “pastoral democracy”, geographically close to our area, is the Oromo people of southern Ethiopia and northern Kenya (Legesse 2001). Although originally egalitarian, Oromo became progressively autocratic in modern times (Hultin 1979), expanding through the conquest of a large extension of southern Ethiopia and incorporating quite a number of simpler societies to their kingdoms (Hassen 1994).

Some of those egalitarian societies belonged to a larger group of Nilo-Saharan societies in the Ethio-Sudanese borderlands that have been mentioned above (Grottanelli 1948; Cerulli 1959; Murdock 1959: 170-80). Historically, peoples in this area have resorted to their cultural traditions to avoid subordination and cultural assimilation, as an example of “cultures of resistance” or “deep rurals” (Jedrej 1995: 3). Emphasis on traditional material culture and rejection of innovations has been documented in other known cases of conflation of identity and resistance (e.g. Levi 1998). Though in a different context, the Euro-

pean Megalithic cultures, construction of big tombs has also been interpreted as a means of resistance against social division (Criado 1989: 91-2). As a collective endeavour strongly related to the symbolic domain, the burial mounds in Central Sudan could have also operated as a peculiar version of the *potlatch* ritual, i.e. a copious consumption of co-operative workforce for the benefit of the whole group.

A state organisation became eventually established in Central Sudan at the time of the Napatan and Meroitic kingdoms. The same kind of social system prevailed throughout the periods of the Christian Kingdom of Alwa in the Middle Ages and the Funj Muslim Sultanate at Sennar up to the Egyptian conquest in 1821 AD. But these polities were mainly riverine systems, and the results of previous archaeological surveys in the Butana (Hintze 1959) and our own data reveal very few settlements, the main archaeological sites from those periods being again burial mound grounds (Fernández *et al.* 2003a: section 8).

Some linguistic and historical data on the region attest the existence of population movements and contacts across the Butana plain and the Blue Nile river, connecting the Central Sudan and the Ethiopian escarpment. First it is the ancient separation of Kunama languages, a dialect cluster today spoken in south-west Eritrea, and of the Koman languages, spoken in the central Ethio-Sudan border, from the old proto-Northern Sudanic and proto-Nilo-Saharan language groups (Ehret 2000: 273-7). These may be interpreted as the first historical splits of Nilo-Saharan peoples from the main stock situated in the Saharan and Sudanese plains. Then we have the similarities observed between Meroitic and Barya (Nera), another Nilo-Saharan Eritrean language, possibly by the influence of the state-level language over the people living in its frontiers (Trigger 1964; Bender 1981, 2000: 56). The Meroitic has been also related to the Koman languages (Shinnie 1967: 132, n. 7). Information from Arab travellers in the Middle Ages suggests that Kunama and Barya peoples were at that time installed nearer the core of the Christian kingdom of Alwa, from which a later displacement to their current position in the Highlands is deduced (Murdock 1959: 170; Pankhurst 1977: 3). Oral history from the Berta people, now living at both sides of the central border, indicates that they also moved to the

Highlands from the southern part of Sennar kingdom in recent times (Triulzi 1981: 21-5).

All those frontier groups have preserved hunting-gathering practices until very recently, and though some of them tend cattle, those living in the forested escarpment are mostly hoe farmers (Cerulli 1956: 179). The current lack or insignificance of livestock, anyway, does not imply the same condition in the past, since the groups could have lost it owing to the pernicious effects on cattle of trypanosomiasis of forest barriers when arriving from the plains to the Highlands (Gifford-Gonzalez 2000: 119-23). Social organisation of all these communities has been basically egalitarian until quite recent times (Grottanelli 1948: 311-5; Murdock 1959: 176).

What we are presented in all this information may perhaps be considered part of the historical processes of *longue durée* at the Eastern Sahelian region. The closeness of a forested and rugged mountainous region may have been a powerful attraction as a refuge area to small independent groups that combined an egalitarian social system and their general linguistic affiliation with the Nilo-Saharan language phylum. Their particular languages belonging up to six families of the phylum (Bender 2000: 44-6), suggests that these peoples reached the “sanctuary” in different historical periods. Even in a continent that has been characterised historically by mostly egalitarian economic and political systems (Coquery-Vidrovitch 1969; McIntosh 1999), or just because of this very condition, many traditional groups have resisted the inception of “complexity” and subordination with all their means, actually resorting to retreat at that intricate hiding band in the Highlands corner that Evans-Pritchard (1940) called the “corridor of death” (Johnson 1986: 219).

Later on, except for occasional slave raids (Pankhurst 1977), these *Shankilla* (black, slave) populations lived for centuries in an acceptably independent situation at the edge of the Sudanese and Ethiopian kingdoms, as historical data from foreign travellers to the Highlands suggest (Páez, Prutky, Bruce, etc.). Their inferior position in modern times (e.g. Donham 1986: 12) could be more a consequence of Abyssinian expansion in the 19th century than the result of earlier enslaving practices. The Sudanese refugees newly settled at the Ethiopian side of the

border due to the civil war attest the persistence of the process, which started in prehistoric times, up to the present day. In such cases as the T'wampa (Uduk), the whole ethnic group, some 20.000 people, has been resettled in the old refuge areas (James 1994), which are now called the Tsore, Bonga or Sherkole camps.

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