

## **Mursi Ox Modification, Lower Omo Valley, Ethiopia: Potential Relevance for Interpreting Cattle Rock Art in Ethiopia.**

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**Abstract.** The Mursi of southwest Ethiopia transform favourite oxen in various ways. These include horn alteration, ear cutting, the wearing of secondary ornaments, and through the process of decorative pattern branding, the focus here. Cattle imagery is relatively common in Ethiopian rock art. The possibility that cattle modification via horn alteration and, particularly, decorative pattern branding is depicted in some cattle engravings and paintings in the region is explored. It is suggested, based on Mursi pattern-branding practices that in some instances the abstract or non-realistic symbols depicted on cattle coats in Ethiopian rock art could be read more literally as signifying actual processes to modify, alter, or beautify cattle.

**Key Words.** Mursi, cattle, Ethiopia, rock art, decorative Pattern Branding.

### **Introduction.**

As an adjunct to ongoing archaeological research focusing on the Dirikoro area of Mursi territory in the far southwest of Ethiopia (cf. Clack and Brittain 2011a, 2011b), data were collected in March/April 2013 on how cattle are modified, particularly with regard to decorative pattern branding. Cattle colour patterns have been the focus of research amongst the Mursi (Turton 1980), and neighbouring groups such as the Nyangatom, Dassanetch, and Bodi (Almagor 1972; Tornay 1973; Fukui 1996), and along with horn modification, more widely in northern Kenya and South Sudan (e.g. Evans-Pritchard 1940, 1956; Lienhardt 1961; Hazel 1997). The much less-common practice of deliberately branding decorative patterns onto cattle, however, appears to have been neglected except for brief mention of it amongst the Hamar, also of southwest Ethiopia (Dubosson 2013: 83). This is an omission as it may be relevant for interpreting cattle imagery in rock paintings and engravings in Ethiopia where bovine representation is common.

This paper first discusses the forms of Mursi cattle modification with emphasis upon pattern branding. The potential relevance of this and horn modification for interpreting Ethiopian cattle rock art is then considered with reference to selected examples.

### **Mursi - Archaeological and Historical Context.**

The Mursi number about 10,000, are agro-pastoralists, and occupy an area centred on the Mursi Mountains, the adjacent plain to the west referred to dramatically by the Italians as “The Plain of Death” (Bolton 1976: 135), and part of the Mago Valley (**Figure 1**). They speak a Surmic language within the East-Sudanic division of the Nilo-Saharan family (Turton, Yigezu and Olibiu 2008: 7).

Although the Mursi have been the focus of anthropological research, notably by David Turton (e.g. 1973, 1980, 1993, 2004), and the subject of six films directed by Leslie Woodhead (Woodhead 1987; Web Reference 1), the archaeology of Mursi Land was unknown until the Dirikoro Region was first investigated in 2009 (Clack and Brittain 2011a, 2011b). The main feature recorded has been *benna kulugto*, ‘stone circles’, actually stone platforms constructed from concentric rings of cobbles set on the ground (**Figure 2**). A horseshoe shaped cluster, c.400 m length and formed of 26 platforms between 2.5-26 m diameter was recorded around the tip of the Arichukgirong Hills (Clack and Brittain 2011: 34-35). Each platform had a gully running usually northwest to the outside edge. This and fragments of burnt bone recovered from between the cobbles suggests the platforms were used for cattle sacrifices and roasting (Brittain and Clack 2012: 54-5). A single radiocarbon date of 170+/-40 BP (Cal AD 1650 to 1890, Beta-268958) has been obtained. The Mursi do not claim links to the platforms and oral traditions suggest they predate Mursi settlement and might be linked with prior Bodi occupation (Clack and Brittain 2011a: 88), reflecting the historically fluid nature of ethnicity in the region (Brittain, Clack, and Bonet 2013: 136).

‘Arichukgirong’ means ‘snout of the bull’ and indicates how the Mursi have used cattle imagery to define and describe aspects of the landscape. This is also evident in two of the five names given to sections of the River Omo, Biogolokare, “take out the eyes of the cattle”, and Ariholi, “white ox” (Turton 1973: 102). Cattle also physically alter the landscape through grazing and their overnight corralling in cattle camps, and through the creation of features such as the c.3 km long and c.100-150 cm deep drovers’ ditch recorded running southwest from the settlement of Meganto. This and the *benna kulugto* comprised the most significant ‘unnatural’ features recorded in the landscape. Rock art is so far absent, and cattle and cattle exploitation generate the durable archaeological record in comparison to the ephemeral nature of most Mursi material culture, including the shelters in cattle camps and huts in cultivation settlements (cf. Turton 1973: 83-84; Clack and Brittain 2011a: 89-90).

Mursi history is also only partially understood, and does not indicate when

processes such as decorative cattle branding began. The area only became nominally incorporated into the Ethiopian Empire when the troops of Menelik II first occupied the Lower Omo in 1897 (Turton 1973: 31), so there is an absence of written sources. Three phases of migration, however, seem to have contributed to Mursi self-identity (Turton, Yigezu and Olibui 2008: 1), involving, c.150 years ago, a move east across the River Omo, followed by a migration north in the 1920-30s, and an expansion north-east into the Mago Valley starting in 1979 (**Figure 1**). Underpinning these was a desire for well-watered grassland for cattle, and riverside forest for flood cultivation, primarily of maize and sorghum, to supplement limited rain fed farming in the bush (Turton 1973: 60).

### **Cattle Significance.**

The importance of cultivation to Mursi subsistence should not be downplayed, but the stone platforms, landscape names, and migrations reflect the significance of cattle of the Sanga type, which are “dominant” in the region (Abbink 2003: 342). Cattle provide meat, and more commonly milk and blood for subsistence, but are also of great cultural importance (Turton, Yigezu and Olibui 2008: 4). They are the ideal bride wealth payment, used in sacrifice, function as the referent for Mursi colour terminology, and provide the lynchpin for “the relationship between the sexes, the solidarity of age-mates and the link between the social order and the order of the universe” (Turton 1980: 328). The ritual and social centrality of cattle is not unique to the Mursi, but is widely found amongst pastoralist and agro-pastoralist societies in the South Sudan/southwest Ethiopia/northern Kenya/northern Uganda region (e.g. Evans-Pritchard 1940, 1956; Gulliver 1952; Lienhardt 1961; Almagor 1972; Tornay 1973; Jones 1984; Brown 1990; Fukui 1996; Hazel 1996; Abbink 2003; Dubosson 2013), as well as elsewhere in Africa (e.g. Herskovits 1926).

This significance of cattle in Mursi society is reflected in the name of one of the authors, Olirege or ‘Uli Rêggê’ – “Pink Ox” – indicating the relationship between males and favourite-ox. Alternatives for ‘favourite-ox’ include “personal-ox”, “display-ox”, “bell-ox”, “song-ox”, and “name-ox” and “parade ox” (*boeuf de parade*) (e.g. Evans-Pritchard 1940: 18, 1956: 250; Gulliver 1952: 72; Lienhardt 1961: 17; Almagor 1972: 79; Tornay 1973: 87; Burton 1980: 276; Brown 1990: 60; Coote 1992: 252; Hazel 1997: 68; Dubosson 2013: 82).

### **Ox Modification.**

The favourite-ox can be beautified via modification in varied ways; breeding for coat colour (Turton 1980; Coote 1992; Fukui 1996), castration (Evans-Pritchard 1956; Coote 1992; Dubosson 2013), ear cutting (Almagor 1972; Dubosson 2013), horn shaping (Evans-Pritchard 1940; Gulliver 1952; Brown 1990; Abbink 2003; Dubosson 2013), wearing of secondary ornaments such as bells around the neck

(Evans Pritchard 1956), excision of part of the pendulous neck to resemble the foreskin after circumcision (Almagor 1972), pulling out the hump behind the neck to encourage its growth (Evans-Pritchard 1937), or pattern branding, the particular focus here. All except neck excision and hump pulling were recorded amongst the Mursi.

Ox decoration through modification is completed to make the animal special and beautiful. As Dubosson (2013: 83) notes with reference to Hamar decorated cattle, “*le bovin quitte la sphere des animaux domestiques por entrer dans une autre plus proche de celle des humains*”. It also radically changes the form of the ox, altering it to the extent that it could be perceived either as more or less ox-like depending on the observer. Emic perspectives seemed to view the modified ox as an enhanced ox, the exemplar of its kind. From an etic perspective the ox began to cease to be ox-like and became more of a fantasy creature. Yet perhaps such a division is slightly simplistic for both the aesthetic and fantastic qualities of the modified ox are recognized by the Mursi, as with other cattle-keeping peoples in the region (Coote 1992: 254).

**Pattern Branding.** A favourite castrated ox of 3-4 years age and of pink or white colour will usually be pattern branded. A skilled 47-year old male elder completed the pattern branding recorded at Doribiscini *bhuran* (cattle camp – N05.72069° E036.10448°). The branding was done with a chisel-like iron tool, the *baera* (**Figure 3**), obtained by trade from Aari blacksmiths in the regional centre of Jinka. Green wooden stakes of c.50-60 cm length with bark removed and sharpened to a point at one end were used as handles. These were possibly *Cordia gharaf*, Mursi *loi*, often used as handles and “firesticks” (Turton, Yigezu and Olibui 2008: 121). The *baera* was heated in a continuously blazing hot fire maintained by an assistant.

During the branding two men restrained the ox laying on its side by sitting on its upper chest; others held ropes to the legs (**Figure 4**). The *baera* was retrieved from the fire using one of the green wooden handles and tapped into place on a large branch situated between the fire and the ox. The red-hot *baera* was moved in a continuous linear motion across the skin until it had cooled and was no longer effective (**Figure 4**). This allowed approximately 60-80 cm of branded line or 20 seconds working time between reheating. The two rear flanks around the anus were completed with *missirou* patterns, one of three types of decoration described as routinely applied (**Figures 4 and 5**). *Missirou* is composed of five concentric circular lines ringing the tail and anus. The other, *miren*, is of two types, three concentric circles, and a double ‘u’ (**Figure 5**).

Pattern branding is ceased once the ox is perceived as distressed. The branded areas are then medicated with *chulloi*, fresh cow dung, and the ox allowed to recover in the nursery area of the *bhuran*. Later the same day the branded ox was ritually medicated for apotropaic reasons with bile from another ox killed by a blow from a stone to the head to obtain its gall bladder. Depending on the resilience of the ox and the urgency of other activities, pattern branding will continue a few days or weeks

later. After the death of a pattern branded ox, its skin, like those of other cattle, will be used to make a *hada* (sleeping mat). Branded *hada* are not deemed ritually significant but their aesthetic qualities are recognized and enhance demand.

Comparative data on decorative pattern branding is sparse. The Hamar decorate favourite oxen, *errawak*, by branding with a lance to produce either curved or straight lines in varied patterns (Dubosson 2013: 83). No other information is provided. Russell (2012: 7, fig. 3) also provides an illustration of the favourite goat of a Turkana man who did not own cattle or camels. Detail is not provided. The goat is branded on one side with *missirou* type decoration at the rear, a central vertical ladder-like band, and variously sized semi-circular lines running downwards from the front chest to the upper foreleg. One ear is also cut in a *Nyabacouda* type pattern, described below.

**Wider Significance of Pattern Branding.** Ox pattern branding seemingly relates to another dominant domain of Mursi materiality, the human body itself. Eczet and Poissonnier (2013: 187) note the parallels between the *miren* double ‘u’ symbol and its use in *riru* scarification. *Riru* is the marking for men who have killed enemies in combat, perhaps in connection with cattle raids, and the *riru* marks are made on the arm with a spear point “*rougie au feu*” (ibid: 181). Heat as the medium for bodily transformation appears to link ox and man, as do the symbols, and the use of the masculine number four (three being female), as in four *miren* double ‘u’ being branded on the ox (**Figure 5**). This is not, however, a simple process of mimicry as the double ‘u’ in *riru* is often inverted (Eczet and Poissonnier 2013: 185) (**Figure 6**).

*Kichoa* is the other system of Mursi scarification. This is applied to upper body areas such as the torso, arms, back, stomach, and breasts. It seems to lack either *missirou* or *miren* symbols, perhaps because *kichoa* is applied to both men and women. For example, the use of concentric circles as double dashed lines around the nipple (**Figure 6**) differs from circular *miren*. The technique used also varies, as *kichoa* is formed of keloids cut with a razor after lifting the flesh with a thorn (cf. Eczet and Poissonnier 2013), rather than branding. Continuous composite scars, including double concentric circles, can also form part of *kichoa*, so too strict a demarcation is perhaps unwise. Less permanent bodily transformations that are perhaps more plausibly linked to *miren* symbols are concentric circles shaved into male hairstyles (**Figure 6**).

Other aspects of Mursi material culture are limited (e.g. Turton 1973, 1980; Eczet and Poissonnier 2013), but symbolic references to ox pattern branding can be suggested. The Kalashnikov AK47 rifle and variants thereof is another component of Mursi masculinity today (Turton 1993). Painted designs on stocks and fore grips include the inverted double ‘u’ *miren* decoration (**Figure 6**). These rifles were first introduced in the 1980s (Turton 1993) and attest how Mursi traditions of pattern branding, aesthetics, ornamentation, and material and human decoration do not exist in a historical and political vacuum but are re-employed as new material culture and contact zones are encountered. This is also evident in the depiction of

*miren* and *missirou* patterns on stylized clay figurines made by some Mursi women for sale to tourists over the last 10 years (**Figure 7**). Finally, and albeit not seemingly Mursi linked, as previously described, the repeat circles of concentric circles of stones in the *benna kulugto*, features that conceivably functioned for cattle sacrifice in the past, also more generally link circles and cattle.

**Horn Shaping.** Horn shaping is also a significant form of Mursi ox modification. Three modified horn shapes were identified in the herds at Doribiscini, *dogomme* forward shaped horns (**Figure 8**), and two variants of the *chipto* inward curved horn shape (**Figure 9**). The horn shaping was completed by the same elder as the pattern branding using a ground sandstone hammer, *Be' bhêy Kara Nun*. These are locally manufactured and only used for horn shaping, but like the *baera* are not ritually important. A worn lower grinding stone, *golu*, is used to make a horn shaping hammer. This is initially pecked into shape with a basalt cobble, and then filed with a flat face of the same basalt tool to obtain the smooth surface finish of the hammer (**Figure 3**).

The ox was restrained in the same way as for branding with ropes attached to the legs, but with a man sitting on its flank and another holding its head. Carefully aimed blows of the stone hammer were used to break the base of the horn where it joined the skull from various positions around the head (**Figure 10**). Once loosened in this way the horns were cut with a circular v-shaped notch below the tip and bound tightly together with twine to keep the position and encourage horn growth in the desired shape. The horns and surrounding area of the skull were medicated with *chulloi* and the ox again recovered in the *bhuran* nursery area. Similar processes of horn shaping have been described for the Turkana and Pokot in Kenya (Jones 1984: 46; Brown 1990: 61-63), and Karamojong in Uganda (Gulliver 1952: 72).

**Other Modifications.** Besides cattle breeding for coat colour and castration (cf. Turton 1980), which were not the focus of this research, ear cutting and the wearing of secondary ornaments are further forms of Mursi cattle modification. Decorating the ears can be done for either cows or oxen, and has two forms based on the extent of cutting. *Nyabacouda*, a rounded serrated saw tooth pattern around either one or both ears (**Figure 9**) and *sierouy*, more pronounced in cutting the ear into four upward points, and which was not seen. These patterns are cut with the small arrow, *lawun wheni*, used for blood letting for human consumption from main veins. Often the same male elder who does the horn alteration and pattern branding will complete the ear cutting.

A secondary ornament used by the Mursi to decorate oxen, *nilla*, is made locally by Mursi men from leather and two warthog (*Phacochoerus africanus*) tusks joined with iron fittings to a leather headpiece (**Figure 9**). These are worn so that the tusks are positioned pointing outwards from either side of the ox's head below the ears, visually providing a contrast in both size and colour to the ox horns.

## **Cattle Modification and Rock Art in Ethiopia.**

Ethiopian rock art was sampled for representations of cattle modification based on the high proportion of cattle images present (e.g. Brandt and Carder 1987; Hundie 2001; Le Quellec and Abegaz 2001; Mire 2008; Hagos 2011) (**Figure 11**). It is possible that relevant images also exist in the rock arts of Somalia, Somaliland, and Djibouti, but nothing has so far been found. Overall, pastoral rock art has been described as “a comparatively recent phenomenon” in the Horn of Africa, including Ethiopia, spanning the last 4000-5000 years (Brandt and Carder 1987: 195).

**Horn Shaping.** No indication of cattle ear cutting or the wearing of ornaments analogous to *nilla* was found in Ethiopian rock art. Horn shaping is, however, potentially represented (cf. Huard 1959: 114). For instance at the site of Anza 1, 30 km east of Edaga Hamus in Tigray, two cattle paintings might depict this. One is of approximately 20 cm length and has exceptionally “diverged” horns (Nigus 2006: 59) (**Figure 11.6**), and the other, indistinct and partly damaged, has “twisted” (ibid: 60), forward and down pointing horns (not illustrated). Both were dated on stylistic grounds to between 5000-3000 BP. Hagos (2011: 13) also refers to this emphasis given to horn shapes in Ethiopian rock art, as “twisted or deformed or in abnormal positioning both downward and forward curving and high arching of the horns...” but without linking it to horn shaping.

The asymmetrical horns present on a humpless longhorn cattle engraving, part of a panel of c.300 cm length by 230 cm width, at Ejersa Gara Halla in the Dilla area have also been interpreted as depicting a modified horn form (**Figure 11.7**). Le Quellec and Abergaz (2001: 206) suggest these are like the Hamar modified horn style *kamara*, where one horn bends forward and the other upward. This engraving has been placed within the Sappé-Galma School that was broadly dated to between c.6500 and 2500 BP, but with the proviso added that they “could be much more recent” (ibid: 211).

Horn shaping has been previously suggested for Saharan images (e.g. Huard 1959; Cervicek 1971: 131; Dupuy 1999: 58; Chaix 2006: 49-50; Lenssen-Erz 2012: 95; Dubosson 2013: 86) where there is also a high incidence of bovine images (Le Quellec 1998: 66-67). In the Sahara the beginnings of cattle pastoralist rock art has been dated as part of the emergence of a ‘cattle cult’ to the second half of the 7<sup>th</sup> millennium BP (Muzzolini 2000: 89; di Lernia 2006: 60; Le Quellec 2013: 34).

**Decorative Pattern Branding.** It is possible that decorative pattern branding is depicted on some cattle in rock paintings from Ethiopia and neighbouring Eritrea. At the Laga Oda rock-shelter, 25 km southwest of Dire Dawa, a painting of a cow provides the strongest evidence for such modification. The image is 36 cm in length and forms one part of a panel of eight pictures of cattle, and is described by Cervicek (1971: 122) as “painted in a darkened white, the contours, the inner pattern, horns and udder in black” (**Figure 11.5**). Cervicek (ibid) does not consider why the cow is decorated in this way, but the neatly painted geometric patterns could indicate

decorative pattern branding. Other strong possibilities are provided by the “distinctive patchy markings, usually in brown and reddish tones, possibly also representing cattle brands” referred to by Marshall (2000: 197). These are depicted on paintings of humpless cattle at Zeban Ona Libanos and Sollum Ba’atti in Eritrea that lack dates. Marshall (*ibid*) does not specify the type of branding, but decorative pattern branding would appear to be what is represented.

At the Sollum Ba’atti rock shelter, for example, two of the cattle are depicted with vertical banding that could be decorative pattern branding (**Figure 11.4**). The dimensions for the images are not given but the total painted area is described as 18 m width by 2-3 m in height (Graziosi 1964: 93). Dimensions are also unstated for the images at the Adi Qanza rock shelter where a red painted bovid accompanied by a man armed with a spear (Graziosi 1964: 97) also has interesting geometric coat markings that could denote pattern branding (**Figure 11.2**).

Cervicek (1971: 124) also refers to the presence of “two circular markings (brands)?” painted in red on another cow of 58 cm length and depicted in black outline at Laga Oda (**Figure 11.3**). Taking the circular markings singularly, these could be interpreted as ownership brands rather than decorative patterns. Elsewhere in the Horn and eastern Africa ownership brands have been linked to rock art (e.g. Phillipson 1977: 272; Brandt and Carder 1987: 198; Finneran 2007: 105; Dubosson 2013: 84); for example, the almost 1000 geometric rock engravings recorded on the lava outcrops surrounding, and stone upright slabs associated with, graves at the Namoratunga cemetery and rock art site near Lake Turkana in northern Kenya (Lynch and Robbins 1977). This is an interpretation, however, that has been challenged recently (cf. Russell and Kiura 2011; Russell 2012).

Not referred to by Cervicek (1971: 124) are the lines and dots depicted on the same animal at Laga Oda (**Figure 11.3**). In totality, these motifs could indicate pattern branding, though of a different form to the geometrically decorated example at the same site. Branding could also be represented on a third cow from the site. This is painted in light grey with black details and is 47 cm in length (Cervicek 1971: 123). Two rectangles bisected by a vertical line, one with associated dashes underneath, could indicate ownership or be for aesthetic purposes (**Figure 11.8**). All the images (approximately 600 in total) at Laga Oda were originally placed within the so-called “Ethiopian-Arabian” style (Cervicek 1971: 130), dated to between 2200-1550 BC (*ibid*: 143), based on stylistic affinities with C-Group pottery from Nubia (Brandt and Carder 1987: 206). These are dates that have been questioned by Le Quellec and Abegaz (2001: 211; and see Le Quellec 2003) who indicate that archaeological remains of domesticated cattle do not predate 3500 BP, suggesting the images are later in date.

In describing a panel of three larger painted “bovids” and associated human figures (60 cm width) at another “Ethiopian-Arabian” rock painting site, the rock shelter of Laga Gafra southwest of Harar, Cervicek and Braukämper (1975: 51) do make oblique reference to decorative branding. They suggest that the single or double



vertical stripes depicted running down the centre of the bovid bodies (**Figure 11.1**) are reminiscent “of modern burnt ornaments of cattle as applied by East African cattle breeders”. The alternative less plausible interpretation they suggest is that they represent the wearing of bead bands. A similar cattle rock painting with a vertical stripe down the centre of the body is depicted at Amba Fekada II in Tigray (Nigus 2006: 42).

It has been argued that decorative pattern branding might be represented in Saharan rock art (e.g. Dubosson 2013: 87). For example Dupuy (1998: 51; 1999: 71) has drawn brief attention to Fulani cattle whose coats were painted with crude vertical, horizontal and slanting lines and spots in the Diafarabé region of Mali as a possible analogy for the geometric signs engraved on some cattle rock art (date unspecified) in the Adrar des Iforas Mountains in Northern Mali. Lenssen-Erz (2012: 105) also refers to some of the cattle rock painting and engraving images in the Ennedi Highlands of north-east Chad as being individualized “with very intricate, ‘costly’ patterns of the coat often in strictly unnatural geometric designs” and this fitting “with current patterns of behaviour among some cattle pastoralists”. The existence of potentially comparable practices elsewhere in African prehistory strengthens the hypothesis advanced here for interpreting aspects of Ethiopian cattle rock art.

## **Conclusions.**

Based on Mursi pattern-branding practices it can be suggested that in some cases the abstract or non-realistic symbols depicted on cattle coats in Ethiopian rock art could be read more literally. They could signify actual processes of decorative branding (or painting or scarifying) to modify, alter, or beautify cattle. Mursi *Missirou* and *miren* symbols also provide a cautionary note in relation to the potential universal applicability of neuro-psychological interpretations of rock art imagery. The circular and double ‘u’ could be misinterpreted as entoptic phenomena. These might not precisely parallel trance-related symbols but are generically similar and could be seen, either when represented with or without cattle, as ‘shamanic’ or ‘trance’ related, when they are not (cf. Finneran [1997: 105] for relevant critique in the Ethiopian context). Instead they may be indicative of wholly unconnected and complex patterns of human-animal relations centred on masculinity and aesthetics.

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**Figures.** (All photos T. Insoll unless otherwise stated).

1. Map indicating the location of Mursi territory and Dirikoro in Ethiopia (adapted from Turton et al 2008: 2).

2. *Benna kulugto*, stone platform, at Dirikoro. Photo. T. Clack.

3. The tools used for horn modification and pattern branding. Top left. Cattle herdsman holding horn shaping hammer. Top right. *Be' bhêy Kara Nun*, ground stone horn shaping hammer. Bottom. *Baera*, iron branding tool.

4. Branding the *missirou* decoration using the *baera*.

5. Fully decorated ox with *chipto* horns, *nilla* ornaments, and left to right, concentric circular *miren*, double 'u' *miren*, and *missirou* branded decoration.

6. *Riru* double 'u' symbols (after Eczet and Poissonnier 2013: 182); *Kichoa* concentric circle decoration around nipple; Decorated Kalashnikovs, rear with beads, cowry shells, red paint, and leather pistol grip cover, front with red painted inverted double 'u' *miren* symbols; Concentric circle hair decoration.

7. Mursi *oliyna*, clay cattle figurine with incised double 'u' *miren*. Photo. T. Clack.

8. *Balai* colour (contrasting) black and white ox with *dogomme* horn pattern.

9. Decorated oxen. Front. Branded ox wearing *nilla* ornaments with *chipto* horn pattern. Behind, *gidangi* (dirty white/grey) oxen with variant of *chipto* and *nyabacouda* ear decoration.

10. Horn shaping in progress.

11. Top to bottom, not to scale. (1) Bovid paintings with single or double stripes down the centre of the body, Laga Gafra (after Cervicek and Braukämper 1975: Fig. 4). (2) Cattle painting with geometric coat markings, Adi Qanza, Eritrea (after Graziosi 1964: Plate 15). (3) Cow painting with circular markings, dots and lines, Laga Oda (after Cervicek 1971: Fig. 9). (4) Cattle paintings with vertical banding on coats, Sollum Ba'atti, Eritrea (after Graziosi 1964: Plate 13). (5) Cow painting with a geometric coat pattern, Laga Oda (after Cervicek 1971: 191). (6) Cattle painting with "exceptionally diverged", possibly trained horns, Anza 1 (after Nigus 2006: 59). (7) Longhorn cattle engraving with asymmetrical horns, Ejersa Gara Halla (after Le Quellec and Abergaz 2001: Fig. 7). (8) Cow painting with two bisected rectangles, one with associated dashes, Laga Oda (after Cervicek 1971: Fig. 4).

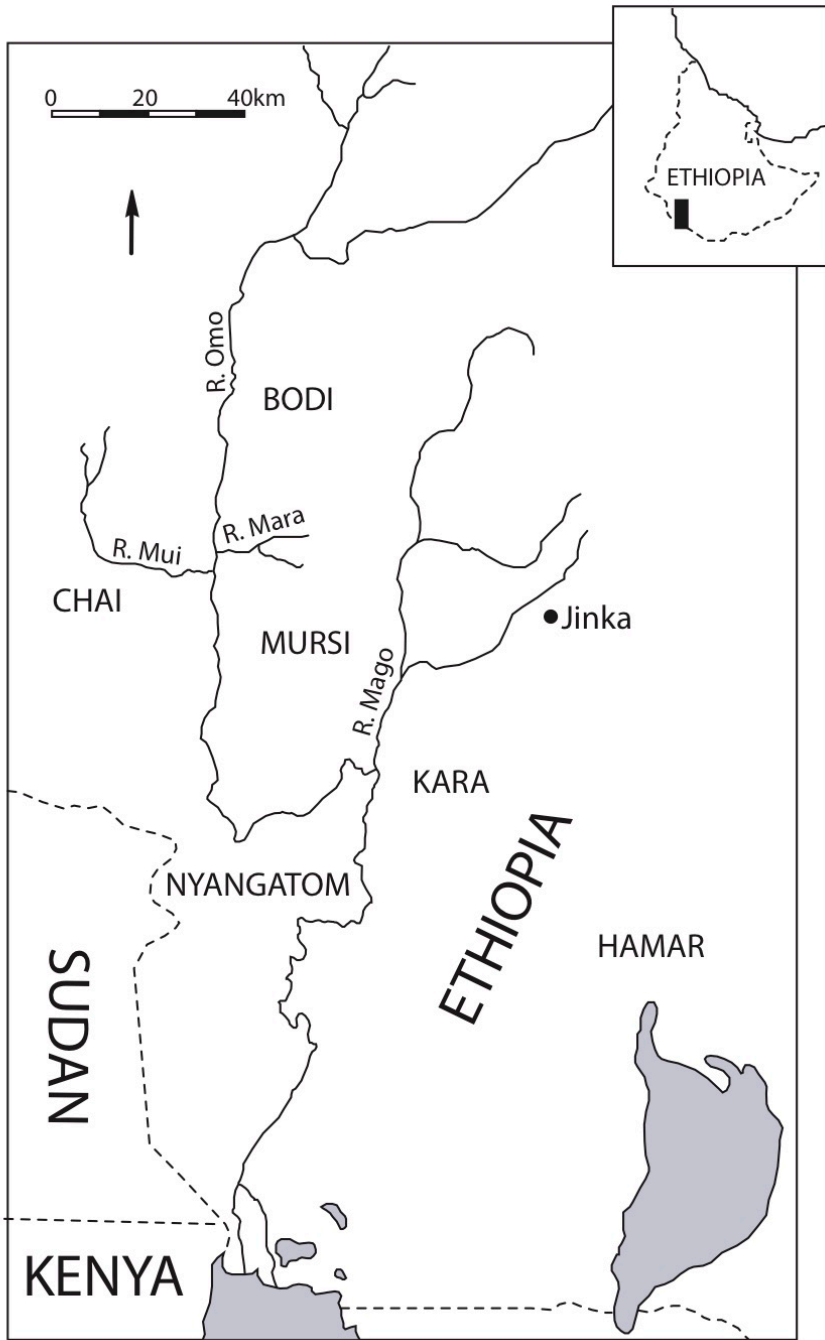


Figure 1





Figure 2

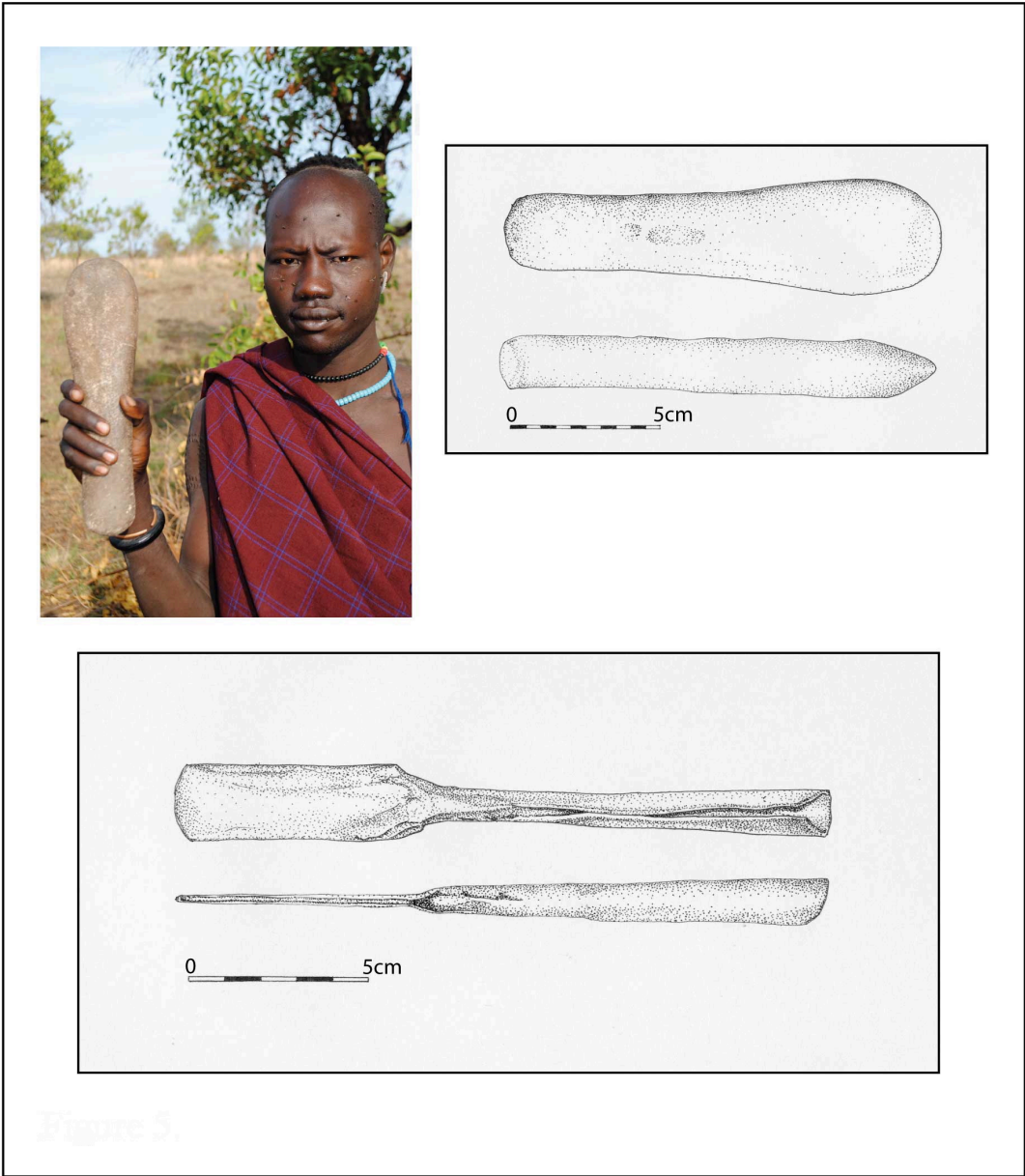


Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10

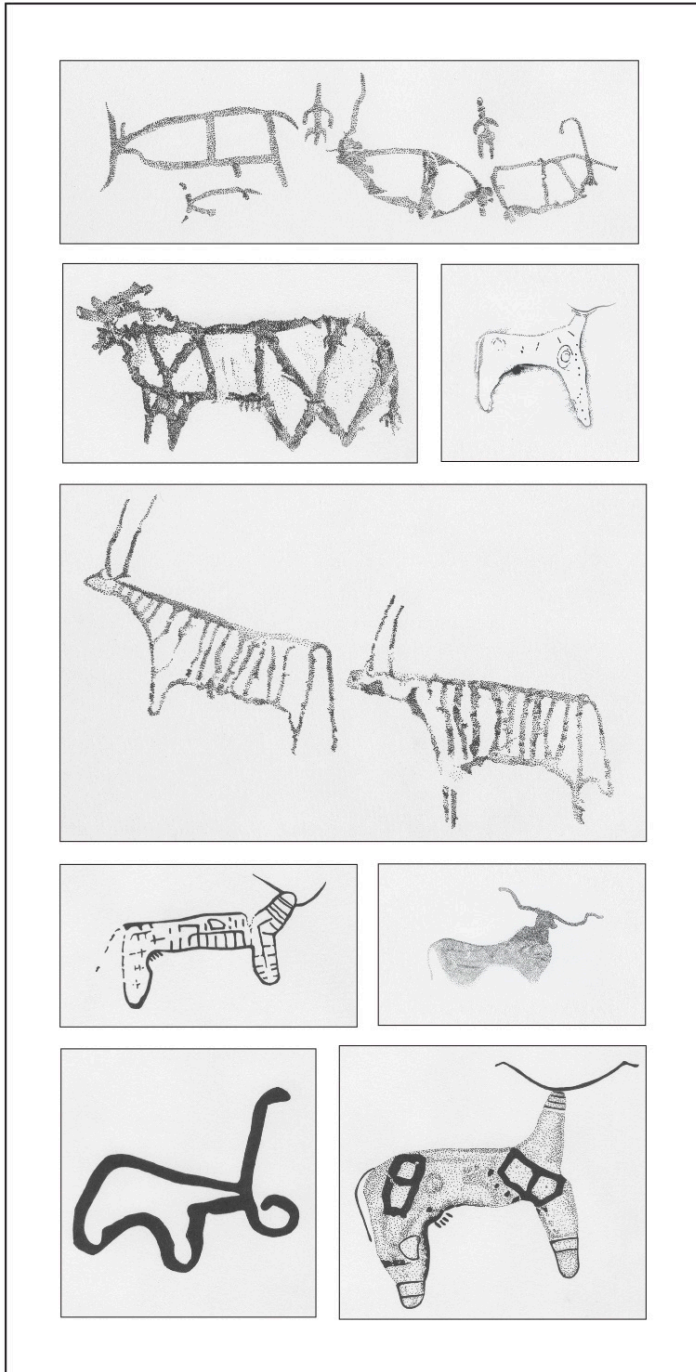


Figure 11