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Determining Rock Art Authorship from Excavated Remains of Kondoa, Central Tanzania

Emanuel Thomas Kessy

Abstract. – Rock art analysts in sub-Saharan Africa have occasionally attributed rock art with ethnicity or mode of production. This view ignores the complexity of past economic, political, and social interactions among various populations that inhabited the region and the outcome of this to the evolution of rock art in the continent. Recent research from Kondoa suggests that associating rock art authorship with ethnicity or mode of production does not only mislead interpretation but also distorts the reader's perceptions. *[Africa, Central Tanzania, Later Stone Age, Iron Age, rock art, authorship]*

Emanuel T. Kessy (PhD) is Lecturer of Archaeology at the University of Dar es Salaam (Tanzania). – He has worked over 20 years at Iron Age and Later Stone Age sites along the coast of Tanzania and in central Tanzania. – The major focus of his research has been the transition from Later Stone Age to Iron Age in central Tanzania, which was also the main theme of his doctoral dissertation, defended in 2005. The most recent works include publications on Later Stone Age sites in central Tanzania, Uganda and Zimbabwe. – See also Ref. Cited.

Background to Rock Art Research in Tanzania

Documentation of Tanzania's rock art dates back to the first two decades of the 20th century by the work of Nash (1929). This was followed by the works of Leakey (1936, 1950), Kohl-Larsen (1943), Kohl-Larsen und Kohl-Larsen (1938), Fosbrooke (1950), and Fozzard (1959). Kohl-Larsen, for example, travelled through Kondoa, Isanzu, Iambi, and the Iramba plateau in 1934–35 excavating, recording, and describing a large number of rock art sites. The potentiality and contribution of central Tanzania rock art to the world was recognized at the very early stage of rock art research. It is on that basis that a special volume of the journal of *Tanganyika Notes and Records* was published where Leakey (1950: 15–19) and Fosbrooke (1950a, b, c, d, e) were the main authors. The main issues covered in the journal included attempts to record, establish age, their location, meaning, and lay down methods of recording and preserving the rock art of central Tanganyika. The recorded art included both petroglyphs and paintings. The post-1960 period was characterized by a slow pace on rock art research (see the works of Inskeep 1962; Fozzard 1966), but this picked up again during the 1970s and afterwards.[1]

Descriptions and Chronology of Rock Art

Although strategies to date central Tanzanian rock art started from the early 1950s (Fossbroke 1950; Leakey 1950), as has been for most areas of Africa, direct dating of central Tanzania rock art has not been accomplished. This is partly due to the lack of research as well as problems associated with dating rock art in general (Anati 1996: 22–24; Masao 1979: 269). Through the use of various techniques such as studies of stylistic variation, superposition of rock art, and stratigraphic position of excavated raw materials Anati (1996: 22–24), Coulson and Campbell (2001), Leakey (1983: 22), Masao (1979: 276 f.), and Odner (1971: 179) have provided some clues to the antiquity of red and white paintings as

1 Anati (1996); Lim (1992, 1996); Leakey (1983); Masao (1976, 1979, 1982); and Ten Raa (1974).

well as the people involved in producing them. In order to figure out the antiquity of Kondoa rock art, the first approaches by Leakey (1936: 151–158; 1950; 1954) involved the establishment of 17 types of rock art based on stylistic variation and colour. Leakey's 17 styles were later cut down to only 5 after Fozzard's (1959: 94) investigation of 6 sites in southwest Kondoa. The models developed by Leakey and Fozzard were afterwards found too restrictive on the basis that they did not reflect the diverse nature of stylistic patterns that constitute central Tanzania rock art (Masao 1979: 225 f.; Odner 1971: 178). This observation led Anati (1996), Coulson and Campbell (2001), Masao (1979), and Odner (1971) to development new models that may be more applicable. Combined efforts from the 1950s to date suggest that central Tanzania rock art may date back to the Pleistocene and continued until 200 years ago.[2]

For comparison purposes this work has developed a summary of models after Anati (1996), Masao (1979), and Odner (1971) for central Tanzania; and by Phillipson (1976) in Zambia (Table 1). The fifth model by Coulson and Campbell (2001: 132–147), reflects a strategy to summarize the rock art stylistic patterns over a wider geographical region that includes the area located between Zambezi Valley and Lake Turkana. The latter model provides an opportunity to discuss the characteristics of rock art over a wide region rather than the traditional approach that was based on studies of isolated pockets in eastern African region.

2 Anati (1996: 22–24); Coulson and Campbell (2001); Leakey (1983: 22); Masao (1979: 276 f.); and Odner (1971: 179).

A Comparative Look at Eastern and Central Africa Rock Art Models

The most notable similarities shared by the five models in Table 1 include the chronological sequence and stylistic evolution of contents in the subject matter through time. For example, all authors assign group 1 to Later Stone Age (LSA) – alternatively categorize as early or late hunters – and that in general red paints are the earlier form of art representation, while black and white were

Table 1: Summary of rock art models for central Tanzania and eastern Zambia after Anati (1996), Coulson and Campbell, (2001), Masao (1979), Odner (1971), and Phillipson (1976)

Author	Region	Group/ Style	Subject Matter	Colouring Matter and/or Paint Texture	Position in Rock Shelter	Estimated Age	Associated Industry/ Authorship
Odner (1971)	Central Tanzania	Group 1: realistic and near realistic images	Human, animals and symbols	Red (solid)	Outside walls	6th–1st millennium B.C.	LSA
		Group 2: schematic	Human	Mostly white, but also red and yellow (crude)	Deep cave walls	1st millennium B.C. – 19th century A.D.	LSA/IA
		Group 3: semi-realistic	Symbols, e.g., hand prints, "suns" and comb-like representations	White and black	Outside walls	Later than previous and perhaps also coexisted	?
Masao (1979)	Central Tanzania	Group 1: stylized/ schematic	Human figures more common than wild animals	Red	Outside walls	3000 B.P.	LSA
		Group 2: naturalistic and semi-naturalistic	Wild animal figures more common than human	Mostly red, but brown and white	Outside walls	3000 B.P.?	?

relatively later (Table 1). Nevertheless, a distinction between the models is apparent, notably in the order of stylistic patterns and to some extent grouping of the subject matter. For example, Masao's (1979: 233–241) groups 1 and 2 fall into Odner's (1971) groups 2 and 1 respectively. In terms of attributes and chronology, Phillipson's (1976) groups 2–4 fall into Anati's (1996) group 6. In addition, while Masao lumps all symbols in group 4, the rest placed them repeatedly in not less than two of the classified groups in one given model.

Anati's (1996) and Coulson and Campbell's (2001) models are exceptionally distinct by inclusion of additional cultural groups in the production of the art such as Pastoral and Stone Bowl Culture and Maa Speakers. The inclusion of these groups is a relatively recent input to rock art classification south of the Equator where its production had been consistently linked to the ancestors of LSA hunter-gatherers or IA agropastoralists. With the exception of Phillipson (1976) whose chronology is based on relative dating, the rest of the authors attempted to provide absolute chronology although this strategy is limited to few cases in the overall grouping.[3] For all authors, red painting seems to have dominated at the early stages of rock art production, particularly during the LSA hunting-gathering phase. This trend seems to have been affected by the later introduction of other painting materials such as brown, black, yellow, orange, and buff. According to Masao (1979: 226–254) and Phillipson (1976: 184 f.), the red paints were eventually replaced completely by white. It is estimated that the earliest form of art may date back to the Pleistocene (Anati 1996). Later, between the 1st and 2nd millenium B.C. if not earlier, the Stone Bowl and Pastoral rock art styles were introduced to the eastern African region, and this was lastly followed by IA and Maa Speakers painting traditions (Anati 1996; Coulson and Camp-

3 Anati (1996); Coulson and Campbell (2001: 132–147); Masao (1979: 277); Odner (1971: 178–180).

Table 1 (continued)

Author	Region	Group/ Style	Subject Matter	Colouring Matter and/or Paint Texture	Position in Rock Shelter	Estimated Age	Associated Industry/ Authorship
		Group 3: semi-realistic silhouettes	Human and animal figures (including domesticates, e.g., cattle, sheep and dogs)	White and in rare cases black (thin wash and thick paste, some crudely done)	Often in deep cave walls than outside	IA, possibly latest and practiced until 200 B.P.	IA
		Group 4: abstract and geometric figures	Symbols/ geometrics, e.g., lines, crosses, checkers ladders, U's circles and unintelligible forms	White, orange, brown, red and black (thin wash and thick paste, some crudely done)	Often in deep cave walls than outside	?	LSA?/IA
Anati (1996)	Central Tanzania	Group 1: naturalistic generalized	Animals and few human figures. Weapons and tools including spears, throwing sticks and boomerangs. Symbols and geometric figures e.g. dots and net-like patterns	Dominantly dark reddish brown but also red, dirty white, yellow, orange, grey, blue grey, dark brown and black	Vertical rock surfaces	Pleistocene era	Early hunters

Table 1 (continued)

Author	Region	Group/ Style	Subject Matter	Colouring Matter and/or Paint Texture	Position in Rock Shelter	Estimated Age	Associated Industry/ Authorship
		Group 2: naturalistic realistic	Humans. Animals but few. Symbols, e.g., dots, zigzags and net patterns. Vegetal depictions, e.g., fruits, trees and branches	Red, brown, dirty white, black and bichrome	Rock surfaces (and caves?)	Intermediate between Early Hunters and Late Hunters around 10,000 B.P.	Early gatherers
		Group 3: naturalistic realistic	Hunting scenes: Human figures with arrows and bow, wild animals (and a domestic dog?)	Red, orange, yellow, brown, violet, bichrome and polychrome	Caves and walls of shelters	Earlier but sometimes contemporary with Stone Bowl, Pastoral and IA	Late hunters
		Group 4: ?	Wild animals	Brown grey and grey	Inside caves	2nd–1st millennium B.C.	Stone Bowl Culture
		Group 5: realistic	Domestic cattle, tools and weapons, e.g., spears and shields	Brown, red, black grey and green grey	Outside and inside caves, on vertical and oblique surfaces	1st millennium B.C.	Pastoral
		Group 6: schematic and abstract	Symbols/ geometrics, e.g., lines, solar shapes and hand stencils. Humans. Animals: primarily domesticated but also wild. Weapons and tools, e.g., arrows, spears and hoes	Predominantly white and dirty white. In few instances, red, yellow and black are also used	Deep caves and outside roofs, floors, walls	200–2000 B.P.	IA (Bantu)
Phillipson (1976)	Eastern Zambia	Group 1: Naturalistic	Animals	Red	?	Earliest	LSA
		Group 2: schematic	Symbols, e.g., grids, rectangles, ladders, lines, concentric circles and finger-dots	Red (some depictions crudely done)	?	?	IA

Table 1 (continued)

Author	Region	Group/ Style	Subject Matter	Colouring Matter and/or Paint Texture	Position in Rock Shelter	Estimated Age	Associated Industry/ Authorship
		Group 3: stylized and schematic	Symbols, e.g., finger dots and grids	Red, buff and white	?	Later than previous	IA
		Group 4: stylized and semi-naturalistic	Hoes, axes, finger-dots, lines, grids motor cars	Buff and white (thick)	?	Latest practiced up to 20th century	IA
Coulson and Campbell (2001)	Zambezi Valley to Lake Turkana	Group 1: Naturalistic, stylized, geometric	Animals, people, hunting and domestic scenes, symbols such as dots, circles, circles with radiating lines, parallel lines and ladders, concentric circles	Red, filled in white	?	Earliest	Hunter-gatherers
		Group 2: schematic, geometrics	Small outline often filled in, of cattle	Red, black, white, gray, yellow	?	3,200–1,800 B.P.	Pastoral
		Group 3: Geometric motifs,	Wild animals, mythical animals, human figures, Symbols, rectangles, curves, circles, zigzags, dots	White, dirt white, crudely done		2000 B.P.	IA (Bantu)
		Group 4:	Symbols	White, red	?	Recent	Maa-speakers

Abbreviations: IA Iron Age
LSA Later Stone Age

bell 2001). On assumption that white and dirt white paints were spread to the eastern African region during the IA period,[4] there is no doubt therefore that the tradition commenced around 500 B.C. and after. Depictions of motorcars, hoe, axes, and oral traditions such as those associated with the Chewa people of Zambia suggests that white painting was practiced until recent times (Phillipson 1976: 184–187).

4 Anati (1996); Coulson and Campbell (2001); Masao (1979); Odner (1971); Phillipson (1976).

Reading Authorship from Baura and Lusangi Excavated Remains

Preamble

Right from the beginning of rock art research, Leakey (1936–50s) noted the similarities shared by rock art in the African continent from the southern tip to the north. Chami (2006: 79) notes that the schematic/geometric/amorphous "parietal records of different parts of Africa, and probably elsewhere, were related; and this seems to be more true with

those of western Mediterranean, northwest Africa and sub-Saharan Africa and South Asia" (see also Willcox 1984: 113–126). These similarities are not only from stylistic depiction, contents of subject matter, and chronology alone but also their evolutionary patterns through time. This generalized observation should not be taken to ignore inter- and intraregional variations over any length of time. However, while claims for intraregional variations are irrefutable, the main concern here is whether the noted variations are significant enough to guarantee absolute split subdivisions. As shall be noted later in this work, the intraregional variations of art for most parts of Africa is a reflection of changes in society values as well as community perceptions of the world surrounding them at a particular time and space in history (see also Lim 1992; 1996: 80 and Klein 1999) rather than change in authorship as has been claimed by some authorities (Phillipson 1976, 2005). Therefore, as the technology of rock art production spread from one part of Africa to another, its adoption was also associated with modification to make it sensible to the recipient community. This is to mean that the contents and meaning attached to art of any people are subject to change or conservation provided that its attributes meet the society's values and norms at a particular time and space. Certainly, the spread and adoption of rock art followed that assumption. On that basis, it would be uncritical to assume that observed similarities and differences in sub-Saharan rock art are necessarily related to presence or absence of particular human type. It is unfortunate that despite a long history of rock art research in Africa, scholars continue to assume that similarities or differences in rock art depictions reflect presence or absence of a particular race or mode of subsistence. The following view by Coulson and Campbell (2001: 140) on the spread of Pastoralists painting reflects this pitfall:

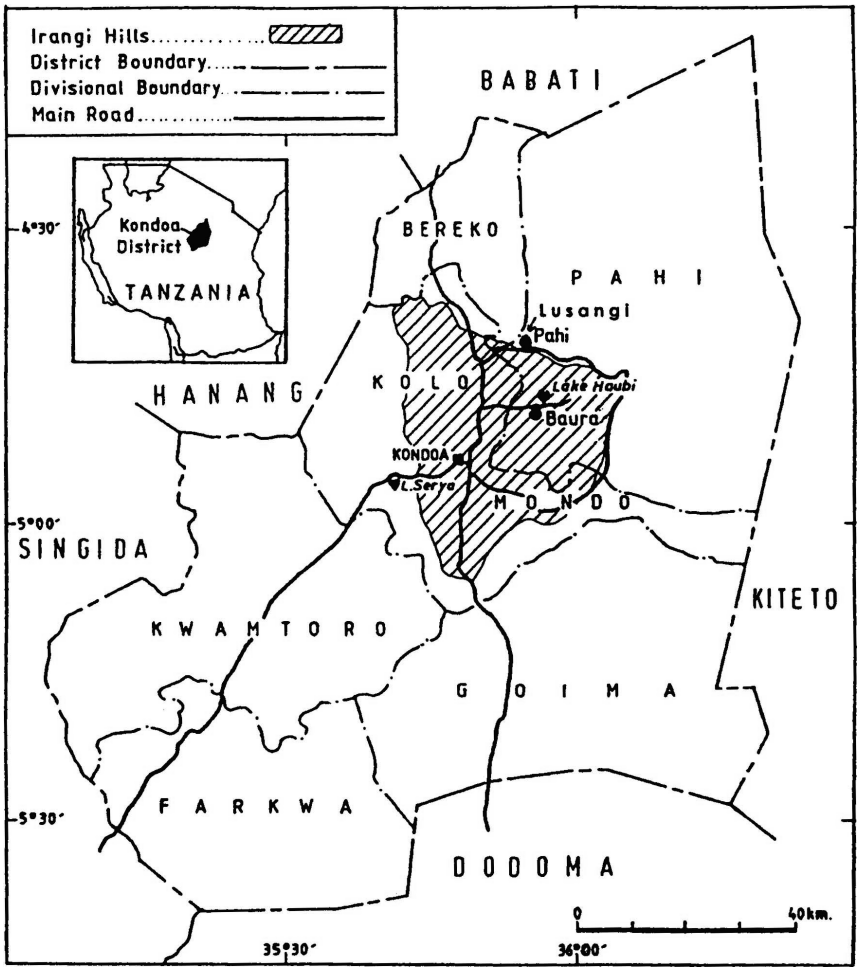
> Pastoralist paintings are very rare with two known sites in Kenya and other possible sites in Malawi. … Similar paintings have been found in Ethiopia but not in southern Africa, which suggests the artists had a northern origin. Possibly, they were pastoralists from the area of the middle Nile who moved south as the population increased with immigrants from the western desert escaping the Sahara's escalating desiccation.

Coulson and Campbell's assumptions are misleading because they ignore the diverse cultural backgrounds of ancient African societies and that certain cultural innovations could have spread from one group to another through various forms of interaction without physical movement. According to Chami (2006: 80), the spread of rock art traditions to various parts of the continent differs very little from modern spread of technological ideas. Rock art or engravings might have been developed at one central location, but later, through interactions such as trading, it spread from one location to another. Correlation in chronology and changes in rock art stylistic patterns and content of subject matter as demonstrated in Table 1 no doubt support Chami's (2006) assumption. While the majority of archaeologists assign the authorship of schematic and white paints to IA Bantu immigrants (see, for example, Phillipson 1976, 2005), recent research suggests that not all areas with evidence of IA cultural elements were the homes of Bantu people. Evidence suggests that the event of Bantu migration and the models developed for the spread of associated cultural package need to be revisited because there are indicators that the event did not take place as assumed previously.[5] For example, research results from Pahi, Kondoa (Kessy 2005) and Wadh Lang'o and Usenge, Kenya (Lane et al. 2007), suggest that the LSA autochthonous were not replaced or assimilated by the Bantu people but adopted the IA elements through the process of acculturation. This perception views the spread of IA traditions to sub-Saharan region as a result of interactions or diffusion rather than human movements.[6] On that ground, the general trend suggests that the majority of settlements in Africa were more or less occupied by their direct ancestors at least in the last few millennia B.C. and that the observed pattern of cultural changes in that time frame resulted from independent innovation or diffusion through contacts and interactions rather than a by-product of migration. The following research results from Pahi support this observation.

Survey and Excavation of Baura and Lusangi

This section briefly describes research results from Baura and Lusangi villages of Pahi Ward, Kondoa, central Tanzania where LSA and IA artefacts were found in association with rock art raw materials. Inference drawn from that investigation is used to address the question of sub-Saharan Africa prehistoric rock art authorship. While a detailed discussion of the whole package of recovered materials is presented elsewhere (see Kessy 2005), only the rock art raw materials are discussed hereunder in detail.

5 See Phillipson (2005) and Denbow (1990); Vansina (1994).
6 Kessy (2005); Lane et al. (2007); Vansina (1994).



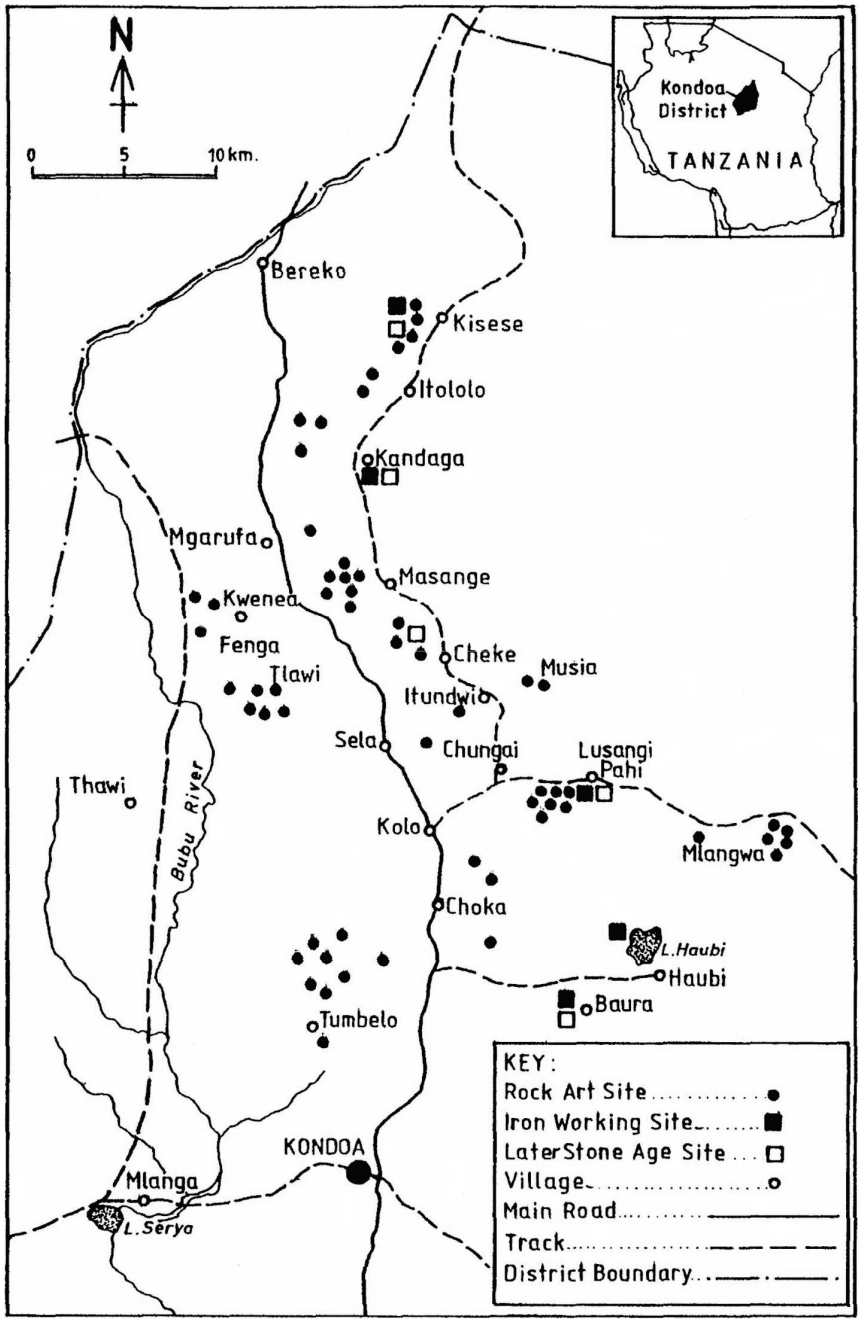
Map 1: The location of Baura and Lusangi, Kondoa Irangi: The shaded area represents the most rock art bearing region.

The Pahi investigation involved systematic land walkover and shovel test pits as well as excavation of both open and rock shelter sites. The survey covered two areas, notably Baura and Lusangi. The Lusangi village is located about 25 km northeast of Kondoa and 12 km north of Baura (map 1). Baura differs from Lusangi on the ground that Lusangi consists of rock overhangs with many rock art panels (map 2). The main reason to adopt a systematic sampling was to establish the occurrence and patterning of different sites over the landscape. A total of 17.5 km² with 50% total survey coverage was completed. The STPs (Shovel Test Pit) were 50 × 50 cm, placed at intervals of 0.5 km along each transect. Most of the STPs were excavated to 50 and 60 cm below surface. The whole project excavated 76 STPs, 43 of which were from Baura and 33 from Lusangi. Generally, the STP results indicated that the upper stratigraphic levels consisted of a mixture of LSA and IA artefacts at the upper levels, while the lower exclusively LSA artefacts.

Excavation Strategies

The excavation aimed at complementing the survey results in a more detailed manner. The excavation exercise was also important because it managed to set trenches in the rock shelters (with rock art depictions) that were not touched by the survey exercise. With the exception of few, most of the excavation trenches were 1 × 2 m in dimension. Throughout, excavation was carried out in arbitrary levels at an interval of 10 and 20 cm, except Unit 3 at Markasi Lusangi 2, that was excavated by natural layers. Three sites were selected for excavation at Baura and four at Lusangi.

A total of 16 excavation units were excavated in the whole exercise, 10 of which were from Lusangi, while 6 were accomplished at Baura. All trenches at Baura were open air, while 2 at Lusangi were from rock shelters and 8 open air. With the exception of Lusangi Unit 3, that was excavated through natural levels, the rest were excavated using arbitrary levels at an interval of 10 or 20 cm. The significance of



Map 2: Location of some LSA, IA, and rock art sites of Kondoa.

excavating Lusangi was twofold. First, it provided data for comparison to that of Baura, and secondly, it made evaluation between the open air and rock shelter sites possible. As had been the case of survey, the upper stratigraphic levels from trenches (including those from open air and rock shelters) consisted a mixture of LSA and IA artefacts while the lower exclusively LSA (Tables 2 and 3).

An overall investigation of stratigraphic sequence and types of materials exhumed from Baura and Lusangi survey and excavation suggests that the autochthonous LSA inhabitants were not replaced or assimilated during contacts with IA people but continued to occupy their traditional area while selectively and gradually absorbing new cultural elements from the IA. A course of arguments about this scenario and how evidence supports these assertions have been extensively discussed elsewhere (see Kessy 2005).

In consideration to past research results, the cultural history at the area of research can be summarized as follows. Evidence from Kisese Rock

Table 2: Stratigraphic Sequence of Artefacts at Baura.

Site Name	Unit No. / Site Type	Lower Sequences	Upper Sequences
Baura 1	1 (open air)	Exclusively LSA	Exclusively LSA
	2 (open air)	Exclusively LSA	Mixture of LSA and IA
	3 (open air)	Exclusively LSA	Mixture of LSA and IA
	4 (open air)	Mixture of LSA and IA	Mixture of LSA and IA

+ Two Ironworking sites (includes smelting furnaces at Baura 2 and 3)

Table 3: Stratigraphic Sequence of Artefacts at Lusangi.

Site Name	Unit No. / Site Type	Lower Sequences	Upper Sequences
Lusangi 1	1 (rock shelter)	Exclusively LSA	Mixture of LSA and IA
	2 (open air)	Mixture of LSA and IA	Mixture of LSA and IA
	3 (open air)	Exclusively LSA	Mixture of LSA and IA
Markasi Lusangi 2	1 (open air)	Exclusively LSA	Mixture of LSA and IA
	2 (open air)	Exclusively LSA	Mixture of LSA and IA
	3 (rock shelter)	Exclusively LSA	Mixture of LSA and IA
	4 (open air)	Exclusively LSA	Mixture of LSA and IA
Lusangi 3	1 (open air)	Exclusively LSA	Mixture of LSA and IA
	2 (open air)	Mixture of LSA and IA	Mixture of LSA and IA
Lusangi 3	1 (open air)	Exclusively LSA	Mixture of LSA and IA

Shelter suggests the LSA people had occupied Kondoa as early as 18,190 years B.P. or before (Inskeep 1962; Mehlman 1989) and by 3500 to 1000 years B.P. (Masao 1979) the LSA proper was widespread in central Tanzania. Data from Unit 2 at Markasi Lusangi 2 suggests the LSA/IA changeover to have taken place around 1030 years B.P. (Table 4). Charcoal sample from Lusangi 1 Unit 4 indicates that ironworking was probably practiced at a large scale at the site by 760 years B.P., while a date of 140 years B.P. from Lusangi 1 Unit 2 suggests that lithic artifacts were still used side by side with iron tools until recently. The dates from the rock shelters (Table 4) are reserved for future discussion after more data from rock shelters are collected.

The varieties of excavated material remains are summarized in Table 5. Since this article addresses attributes of Kondoa rock art, only the rock art raw materials recovered from the project and the trenches from which the materials were exhumed will be discussed here. For a detailed description of the rest see Kessy (2005). With the exception of domesticated remains, daub, glass, and glass beads almost all varieties of materials in Table 5 were found in rock shelter sediments at Lusangi 1, Unit 1 (Rock Shelter P44) and Markasi Lusangi 2, Unit 3 (Rock Shelter P1). As can be observed in Table 5, red ochre occurred at both lower and upper stratigraphic levels, while white clay was restricted to the upper one where it was associated with IA materials. No doubt that the materials at Rock Shelters P44 and P1 were brought to the sites for executing paintings. Baura 1 is the only open air site that yielded raw materials (red ochre from the upper level) for rock art painting. This observation does not only support the assertion that red paints were earlier forms of rock art at Kondoa,[7] but also that the tradition of using red ochre continued to be used after the arrival of the IA traditions. In advance, the exclusive association of white clay with IA materials suggests that white paints were adopted following the spread of the IA traditions. However, the role of red ochre in rock paintings in later times at Pahi remains uncertain because red rock art paints were replaced by white (see also Masao 1979: 226–254; Phillipson 1976: 184 f.). It is possible that the use of red ochre after the introduction of white paints at Pahi was restricted to other activities such as decorating skin, clothes, body, wooden tools, weapons, etc. For example, red ochre is known to have been used by Khoisan for cosmetic purposes until recent times and is also found occasionally in burials (Masao 1979: 68; Rudner 1983: 18). This observation may also make an account for the presence of red ochre at the open air site of Baura 1, Unit 2, an area located outside the rock shelter's range.

Rock Shelter P1 and adjacent rock shelters, that are at the vicinity of Lusangi 1, Unit 1 where red ochre and white clay was recovered, have drawings depicted in white and black outline (Fig. 1, see also Leakey 1983: 48, 60). The white and black paints at the two shelters depict symbols and geometrics and

7 See Leakey (1983); Masao (1979); Odner (1971).

Table 4: Summary of C14 Dates from Baura and Lusangi.

Sample No.	Site, Unit, and Level (Depth)	Associated Finds	Conventional Radiocarbon Age	Calibrated (B.C. and A.D.) Dates, 2 Sigma, 95% Probability
Beta 176185 (AMS)	Baura 1, Unit 1, Level 5 (83 cm)	Lithics	2500 ± 40 B.P.	790–420 B.C.
Beta 176184 (AMS)	Baura 1, Unit 2, Level 3 (39 cm)	Lithics, daub	460 ± 40 B.P.	1410–1480 A.D.
Beta 176192 (Radiometric)	Baura 2, Unit 1, Level 5 (50 cm)	Lithic, slag, tuyere	120 ± 50 B.P.	1660–1950 A.D.
Beta 176191 (AMS)	Baura 3, Unit 1, Level 1 (10 cm)	Lithics, Pottery, slag, tuyere, bone, land snail shell	140 ± 50 B.P.	1660–1950 A.D.
Beta 176186 (Radiometric)	Lusangi 1, Unit 1, Level 3 (27 cm) (Rock Shelter P 44)	Lithics, pottery, white clay	1660 ± 100 B.P.	130–620 A.D.
Beta 176187 (AMS)	Lusangi 1, Unit 2, Level 5 (97 cm)	Lithics, pottery, ostrich eggshell	140 ± 40 B.P.	1660–1950 A.D.
Beta 176188 (AMS)	Markasi Lusangi 2, Unit 2, Level 4 (70 cm)	Lithics, pottery, slag, bone, daub	1030 ± 40 B.P.	960–1040 A.D.
Beta 176190 (Radiometric)	Markasi Lusangi 2, Unit 3, Layer 2 (97 cm) (Rock Shelter P1)	Lithics, pottery, slag, iron object, tuyere, bone, land snail shell, red ochre, white clay, burnt clay	4510 ± 70 B.P.	3370–2930 B.C.
Beta 176193 (Radiometric)	Markasi Lusangi 2, Unit 4, Level 2 (32 cm)	Lithics, slag, tuyere, bone	760 ± 60 B.P.	1180–1300 A.D.

Table 5: Evidence of Rock Art Painting Raw Materials and Other Associated Remains from the Excavated Sites.

Industry	Stratigraphic Position	Cultural Remains
IA	Upper	**Inorganics:** lithics, pottery, slag, tuyeres, furnace, daub, glass, glass beads, **red ochre and white clay** **Organics:** Domesticated and wild fauna
LSA	Lower	**Inorganics:** lithics and **red ochre** **Organics**: wild fauna remains

can be categorized as belonging to group 3 of Odner (1971), groups 3 and 4 of Phillipson (1976) and group 4 of Masao (1979). The red, white, and yellow paints in Rock Shelter P1 (Fig. 2) – red ochre and white clay was also recovered at this rock shelter where Markasi Lusangi 2, Unit 3 was placed, see Table 3 – depicts animals, a human, sun, and human hands, and can be categorized as group 1 of Odner (1971), group 1 of Phillipson (1976), and group 2 of Masao (1979). To the southwest of Lusangi (map 2) is Mugumi wa Kolo – a site rich in both red, yellow, and white paints (see map 3). Despite its location being remote from the current settlements, local people use the shelters for performing rituals – a feature that points at local's ancestral connections to the development of the site.

Discussion

As noted earlier, investigation from Baura and Lusangi, Kondoa, suggests that the LSA autochthonous were not replaced/eliminated or assimilated by IA people as has been suggested for most areas of sub-Saharan Africa,[8] but adopted IA cultural elements through a slow selective process, a progres-

8 See Denbow (1990: 141); Phillipson (2005); van der Merwe (1980: 480–482).

Fig. 1: White and black paints from Lusangi 1. (This picture was taken from a rock shelter [roof] located to the adjacent southeast of Rock Shelter P44.)

Fig. 2: Red, yellow, and white paintings from Rock Shelter P1. The red and yellow paints depict animals, humans, and hands but are now faint. The long black outline below the paper is part of an eland (back) depicted in yellow wash (for details see Leakey 1983: 48). The white paints are symbols and geometrics.

sion that took almost a 1000 years (Kessy 2005). This assumption is not an isolated case because many recent investigations suggest, that many LSA hunting-gathering societies in sub-Saharan Africa adopted IA cultural elements through a process of acculturation, a view that calls for reconsideration of the Bantu migration theory.[9] This new vision challenges the inherently traditional supposition where the spread of cultures such as IA in sub-Saharan Africa were associated with certain ethnicity or particular mode of production.

At this juncture it would be worth to discuss the Kondoa investigation results in the light of other studies in Africa. As noted earlier, despite the long history of rock art research in sub-Saharan Africa, a comprehensive synthesis of its antiquity and stylistic sequence has not been attained. Furthermore, strategies to develop a model for interpreting the meaning of rock art or associated subject matter have proved fruitless because rock painting is a forgotten art. For example, as might be noted in Table 1, investigation on style, colour, rock art superimposition relationship, and stratigraphic association suggests images in white paint to be of later antiquity than those painted red.

Although scholars such as Anati (1996), Coulson and Campbell (2001), Masao (1979), and Phillipson (1976: 185–187) have attempted to associate certain types of paints with ancestors of contempo-

9 See Chami (2004); Chami and Kwekason (2003); Lane et al. (2007).

Fig. 3: Red human figures in stylized representation from Rock Shelter Kolo 2 (see also Leakey 1983: 42).

rary societies such suggestions are speculative. As noted earlier such assumptions ignore the complex forms of interaction among ancient African societies. For example, Masao (1979: 276) suggests that "The Bantu, more than any other group, would be the most likely people to have painted the so called 'late white and yellows', in which … domestic animals such as cattle, sheep and dogs begin to appear." Phillipson (1976: 186) confidently earmarked the authorship of rock art suggesting that the naturalistic and schematic traditions in eastern Zambia rock paintings were produced by distinct socioeconomic groups. According to him, earlier naturalistic representations were produced by LSA peoples, while schematic traditions by IA (presumably Bantu) and that the latter continued, in modified form, to very recent times (Phillipson 1976: 195). While the schematic paints have been suggested to be the work of the IA Bantu speakers whose origin is alleged to be West Africa, it is now known that the schematic are older in the southwest corner of Africa and become younger as one moves north through the interlacustrine region to the Horn of Africa. They are also older in Europe and Egypt in comparison to sub-Saharan Africa (Chami 2006: 81). That being the case, the roles of IA agropastoralists as makers or agents responsible for spreading it to sub-Saharan region need to be readdressed.

The general trend indicates that the majority of scholars believe that the naturalistic LSA painting traditions were replaced by the IA schematic form of art.[10] While this might have happened, the question that remains vaguely addressed is why the schematic rock art styles replaced the naturalistic. To some scholars such as Phillpson (2005), Denbow (1990), and van der Merwe (1980: 478–485) this happened because of the event of assimilation or displacement of the LSA autochthonous by immigrant IA Bantu speakers. However, as noted earlier, recent investigation refutes the view that the LSA autochthonous in sub-Saharan Africa were replaced by Bantu immigrants.[11] Therefore, the answer to the above question can be retrieved by a reassessment of the stratigraphic sequences of cultural remains in the respective areas. In reference to rock art, the following section addresses the controversies that surround the replacement of the naturalistic paintings by schematic.

To start with, and as can be observed in Table 1 and by going through the literature associated with, the areas of central Tanzania and eastern Zambia where Odner (1971), Masao (1979), and Phillipson (1976) worked share several common features. First, most of the investigated sites were rock shelters bearing paintings, IA and LSA artifacts. In all cases, the stratigraphic sequences and associated cultural materials were similar whereby the upper levels yielded pottery and/or ironworking remains and lithic artifacts suggesting a coexistence of IA and LSA industries while the lower produced exclusively LSA.[12] In the case of Zambia, Phillipson (1976: 196) interprets the upper stratigraphic sequences as follows:

10 Coulson and Campbell (2001); Masao (1979); Phillipson (1976).

11 Chami and Kwekason (2003); Lane et al. (2007); Kessy (2005); Vansina (1994).

12 Masao (1979); Odner (1971); Phillipson (1976).

It is clear that the two populations maintained, to a large extent, their separate identities throughout the period of their co-existence … the Early Iron Age folk, an immigrant group, were the sole makers of this pottery, but that they did not make chipped stone artefacts. The indigenous population … continued to practise their mode 5 stone-working technology, and obtained pottery from their Early Iron Age neighbours, the identity of the sherds from the rock-shelters with those from the villages being such as to preclude the possibility that the indigenes adopted the art of pottery manufacture themselves.

If the above assumptions are to be taken as correct, then the stratigraphic data by Phillipson (1976) and Masao (1979) no doubt suggest that the LSA and IA communities continued to coexist side by side for hundreds of years until recently (see Phillipson 1976 and Masao 1979; sites' stratigraphic data). That being the case, then we are obliged to find reasons as to why the contemporary art at the time of coexistence does not support coexistence but indicates that the LSA naturalistic representations were immediately replaced by the IA schematic after contacts between the two. For example, Phillipson (1976: 187) insists that schematic traditions were the work of IA folk and that earlier naturalistic traditions were produced by LSA people, however, he does not specify what form did the art of LSA peoples took after the introduction of IA traditions. In other words, Phillipson (1976: 195 f.) assumes that despite the LSA and IA coexistence and maintenance of separate identities for eight centuries, the LSA peoples lost their art traditions immediately after the contact with IA peoples, while the art tradition of the IA thrived (Kessy 2005: 421; for further comments on this see also Willcox 1984: 113–126).

The question that invariably follows is that if the LSA and IA maintained a separate identity for so long, then why did LSA peoples lost their art immediately after the arrival of IA? Certainly, there is no doubt that the relationship between the LSA and IA peoples must have been more complex than has been traditionally thought. A possible answer to this problem can be deduced by examining the motivation behind the rock art. It is said that the art of any people, like any other aspect of culture, can be viewed as part of a body of habits, beliefs, practices, and products passed on from one generation to another (Masao 1979: 255).

Investigation in South Africa suggests that some of the rock art may have been executed to represent particular daily life experiences. For example, Lewis-Williams' (1983, 2002a, 2002b) ethnographic research among the San hunter-gatherers led to the suggestion that some prehistoric art in the area was drawn by their ancestors to record shamanistic experiences during trances. A comparative view between southern African rock art to the rest of the world suggests greater possibilities for similar motivation in rock art execution (Lewis-Williams 2002a, 2002b). However, this observation should not be taken to view rock art execution as a static practice over a period of time or that the meanings were the same in different regions. Lewis-Williams (2002a: 194) notes that although shamanism has received a wide acceptance as one of the motives for rock art practice "debate continues on just how much of the art is shamanic and in what sense it is shamanic, and, further, on the nature of other meanings that may be encoded in the art." Despite a long history of rock art investigation, most attempts to interpret or deduce meanings associated with the subject matter have always been subjective. Lim (1996: 80) notes that we can only be in a position to get an insight to rock art after understanding the contexts of the various relationships that led to its production. "Interpretation (meaning) is not based solely on the image." Klein (1999: 548) observes the following:

… the meaning or purpose of their art remains mysterious. Perhaps the most secure inferences can be drawn from historic hunter-gatherers, who rarely produced art for its own sake. Instead they embedded their art in the other aspects of culture, where it variously functioned to enhance hunting success, to ensure the bounty of nature, to illustrate sacred beliefs and traditions (perhaps on ritual occasions), or mark the territorial boundaries of an identity-conscious group. Conceivably … [it] symbolizes or encodes social structure or worldview of its makers.

It is an indisputable fact that the interpretation of ancient rock art cannot be perceived with absolute certainty. However, some depictions unquestionably reflect the culture and environment that surrounded the inhabitants who produced the art. A quick look at Table 1 clearly verifies this. For example, group 5 of Anati (1996) (Pastoral) is associated with domesticated animals and shields while group 4 of Phillipson's groups (1976) portrays farming equipment such as axes and hoes. The fact that these attributes are not depicted during the LSA hunting-gathering mode of subsistence, but after the introduction of agropastoralism, verifies why rock art should be viewed as a marker of historical events.

At that juncture, the changes observed in rock art depiction from use of red ochre raw materials to white at Pahi definitely reflect changes in lifestyle and subsistence from foraging to agropastoralism during the period of initial interaction between LSA and IA peoples. Most early red paints clearly

reflect the preagropastoralism era and are characterized by depictions of wild fauna and hunting scenes (Leakey 1983; Masao 1979), hence representing human relationship with nature at that particular time, i.e., relatively an absolute human dependence on nature for subsistence. In later periods, the demographic pressure associated with the expanding agropastoralists communities seem to have shrunk hunting-gathering resources, in due course leading to the collapse of the foraging mode of subsistence (Kessy 2005). Ultimately, this forced LSA hunter-gatherers to supplement their subsistence with domesticated resources. Continuous contacts between LSA and IA no doubt led to intermarriage, influence of the social, beliefs, and ritual practices hence enhanced friendship and cooperation among the two groups. As the mode of subsistence, habits, and beliefs among LSA indigenes were affected by the infusing IA elements, so were their worldviews. Definitely, the practice of art was affected the same way because old practices were replaced by new social and economic systems. The shift to new economy and worldviews is well recorded in the later art by the fact that although wild animals continued to be executed in white paint, there were very few scenes of hunting, and instead, for the first time, domesticated animals are depicted (Masao 1979: 244). An extended depiction of wild animals in white paintings during the transitional period denotes their continued significance, though perhaps not as indispensable as before.

An ethnographic study among the Sandawe who recently abandoned hunting-gathering for settled farming by Ten-Raa (1971) indicates that the shift in economy was also associated with some changes in rock art content. The most noted reasons for extending rock art depiction include sympathetic magic for hunting and sacrifices, some of which are associated with farming economy. Sacrifice depictions are normally done to seek the cooperation of the spirits for health of the living and to bring rainfall (Ten-Raa 1971: 45; Lim 1992, 1996). There is no doubt that the rainfall aspect was included in Sandawe rock art recently after adopting agriculture because of the importance of predictable rainfall for farming. In central and southern Africa, farming communities are also known to have depicted images in rocks following sacrifices associated with rainmaking.[13] It is suggested here that it was similar attributes associated with a new economy and social order that were responsible for the change in the rock art traditions during the transition to agropastoralism by the LSA people of Kondoa. In this context, a change in rock art subject matter does not necessarily imply different authorship or ethnic groups. As noted by Chami (2006), Cole (1963), and Leakey (1936, 1950), the similarities observed in rock art from the northern part of Africa to the southern tip is overwhelming. It would be unrealistic to view these similarities in patterns as a marker of the presence of a specific physical type and ignore the diverse nature of interactions that occurred in ancient African societies – an attribute that no doubt accounts more or less similar developments in rock art traditions over an extensive area of the continent. Lastly, having noted that the spread of rock art cannot simply be attached to ethnicity or particular mode of production, this work proposes that rock art should be categorized on the basis of grouping as it appears in the third column of Table 1. No doubt that the associated subject matter, raw materials used to produce it and superposition could assist in relative dating, and the overall classification (assignment to a particular group). Deliberate efforts should be emphasized to avoid categorization of rock art on the basis of ethnic affiliation or mode of production. This could assist in eliminating the delusion associated with the attachment of rock art to a particular mode of production or ethnicity.

Conclusion

As noted in the discussion, African rock art shares several similarities not only from stylistic depiction, contents of subject matter, and chronology alone but also their evolutionary patterns through time. Evidence indicates that this pattern is observed from north to the southern tip of the continent. It is well-known that while this was happening, the African continent was already occupied by communities of diverse background. On that ground, the most probable explanation for the spread of the observed patterns in rock art similarities must have been through intercommunity interactions at various levels. This observation suggests that it would be unfeasible to assume that the observed patterns, as signatures for the presence of a particular physical type, ignore the diverse nature of interactions that occurred in ancient African societies.

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13 Phillipson (1976); Prins (1990); Prins and Hall (1994).

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