The Rock Art of Kondoa District, Tanzania:

Approaches Toward Understanding Authorship and Meaning

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Thesis submitted to fulfilment of the requirement for the degree of Doctor of Philosophy in the School of Geography, Archaeology and Environmental Studies at the University of The Witwatersrand, Johannesburg.

Declaration

I declare that this research is my own and independent work. It is being submitted for the degree of Doctor of Philosophy in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any examination or degree in any other University.

Emmanuel James Bwasiri

December, 2016

Dedication

To my parents Masanje Bwasiri and Nyawahega Charamba. Their commitment to my education helped me to achieve my dreams.

Acknowledgments

There are number of institutions and individuals who made this thesis possible. It would take half the pages of this thesis to thank them all properly, but allow me to use the first two pages to bid a fitting acknowledgement to them. I start by thanking all those who supported me financially: the Africa World Heritage Fund (AWHF); the Rock Art Research Institute and the School of Geography, Archaeology and Environmental Studies at the University of the Witwatersrand; and the Antiquities Division of the Ministry of Natural Resources and Tourism in Tanzania. I cannot overemphasise how I feel today, but suffice it to say I feel permanently connected to them all.

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Sabai, Hatibu Yusufu, Hassani Mpakani, Juma Kwaya, Omari Abdalah Kepa (Mrijo). I would like to tell the people of Kondoa that the rock paintings and their associated heritage are a precious heritage left to us by their ancestors and they should protect them, especially by refraining from: illegal excavations, deforestation, grazing and cultivating near the rock paintings sites. The human activities listed above damage and destroy the paintings and their associated heritage. I extend my thanks to the Antiquities Division Staff at the Kolo office in Kondoa for accompanying me to some of the site visits.

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Abstract

The Kondoa rock paintings sites are situated in Kondoa District, located in Central Tanzania. These sites were collectively declared National Monuments by the Antiquities Act of Tanzania, enacted in 1964 and its amendments of 1979. In July 2006, the World Heritage Committee inscribed the Kondoa rock paintings as World Heritage Sites, acknowledging that local people continue to use the sites for traditional ceremonies.

Research on Kondoa rock painting was begun in the 1920s by colonial administration staff and continued by local scholars in the 1970s. These two groups have divided the rock paintings according to style and pigments. Red pigment was considered older while white was considered younger, signifying a recent date. Researchers have failed to establish clearly which among the four ethnic groups who have existed in Kondoa District produced the rock paintings. Some scholars have managed to connect some Sandawe beliefs to some of the paintings. Yet, various methods and many styles of the art suggest that the Kondoa rock paintings have multiple authorships. The Sandawe cannot be the only authors of all paintings.

Using a multi-stranded approach that includes the history of the area, the location and distribution of the rock painting sites, oral traditions from local people and published materials, and statistical analysis, this thesis establishes the existence of three rock painting traditions. It then determines the authorship of each tradition and suggests approaches towards understanding the symbolic meaning of the paintings. The study points out that without a clear understanding of the cultural sequence and who made which rock paintings no understanding of meaning can be achieved.

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Abbreviations

RS	Red solid filled paintings
RF/L	Red outline paintings
RD	Red dots filled paintings
WF/L	White fingerline paintings
WS	White solid filled paintings
YF/L	Yellow Fingerline painting
WL	White line painting
BS	Black solid filled paintings
YS	Yellow solid filled paintings
RL	Red line paintings
BF/L	Fingerline paitings
YL	Yellow line paintings

Introduction

This thesis concerns a group of rock art sites in Kondoa District, central Tanzania. The majority of the sites were collectively declared national monuments by the Antiquities Act of Tanzania, enacted in 1964 and amended in 1979. In July 2006, the World Heritage Committee inscribed them as a world heritage site, acknowledging their international significance, their authentic beauty and their living heritage value. Kondoa has the highest concentration of the rock paintings of any area in East Africa. All of the sites recorded to date are painted rather than engraved. Rock art engravings are rare in Tanzania.

The study of Kondoa's rock paintings began in the 1920s, when colonial administrators and officials discovered them in the course of their duties (Bagshawe 1923, 1924, 1925; Nash 1929; Culwick 1931a, b; Aitken 1948; Fosbrooke 1950a, b, c; Fozzard 1959, 1966). Reports from these non-professionals were generally descriptive, discussing the location and content of the paintings, with just a few reports categorising the paintings according to style and pigment colour to establish typologies (e.g. Aitken 1948; Fosbrooke 1950a; Fozzard 1959, 1966).

These early studies were followed by publications by a series of professional archaeologists (Leakey 1950; Inskeep 1962; Masao 1976, 1979, 1982, 1990, 1991b; Leakey 1983; Anati 1986). These researchers generally classified the paintings according to style and pigment colour. They identified a series of rock painting traditions and they analysed the place of these traditions within the complex superposition sequences found in many of the larger Kondoa sites. While providing a sound empirical basis, the eras of description and formal classification failed to provide a clear understanding of which ethnic group made which traditions within the Kondoa rock painting sequence.

This failure resulted in different opinions and views regarding the authorship of particular sections of the paintings. Scholars such as Fidelis Masao (1976: 58) questioned "who were the artists? There is not yet a definite answer to this question." He suggested that the art was made either by ancestors of the Hadzabe and Wasandawe or by Bantu language-speakers. Ascribing authorship to the paintings is also a problem for the local people. Wagogo who live in Dodoma, south of Kondoa District and Warangi, Wambulu and Waasi of Kondoa and Mbulu Districts

claim that the paintings were made by the Portuguese (Masao 1982:38). Furthermore, Madokoro, who worked on Usandawe rock paintings for a few days and interviewed the local people about the authorship of the paintings, wrote: “As to who created these paintings it is uncertain. Despite their tradition of rock paintings, the Wasandawe of Kwa Mtoro deny having any dealings with the rock paintings, claiming them to be the work of Portuguese” (1982:69). Mabulla, who worked with Hadzabe click-speakers, noted that “Hadzabe hunter-foragers claim that their ancestors were the authors of rock paintings, though this has not been confirmed” (2007: 22).

A range of different scholars have therefore invoked a wide range of different authorships in recent years. With no clear understanding of authorship, it has been impossible for researchers to produce convincing interpretations of the meanings of the paintings. For instance, Felix Chami, an archaeologist from the University of Dar es Salaam, interpreted a procession of bending human figures at a Kolo rock art site as prisoners of war (**Figure 11a**): “The scene is a painting of people clad in skins with tails in single file with an aspect of chain or rope running through their necks with two or three people in cloaks, typical of an East African coastal or Middle East attire, leading the procession in one direction” (2006:86). Chami’s interpretation follows other local interpretations which also invoke foreign authorship.

A third group of researchers, including rock art professionals and anthropologists have ignored the complex stylistic variations within the paintings and have sought to tie all of the paintings to the rituals and beliefs of a particular local hunter-gatherer group, the Wasandawe (Ten Raa 1971; Lewis-Williams 1986; Lim 1992, 1994, 1996). Eric Ten Raa recorded eye witness accounts of the Wasandawe still making rock paintings in the 1960s. David Lewis-Williams and Imogene Lim then applied aspects of Wasandawe beliefs to the paintings and sought to attribute specific meanings to the paintings. The work of Lewis-Williams (1986) and Lim (1992) assumes Wasandawe authorship for many of the paintings. Yet, any careful study of the early writings makes it clear that the Wasandawe cannot have been the authors of all of the traditions of rock painting found in Kondoa and so there is a need to consider more carefully which ethnography may be relevant to which section of the paintings.

This thesis therefore seeks to draw together nearly a century of work on the Kondoa rock paintings and make new conclusions as to the traditions and authorship of all sections of the paintings

To establish the authorship of the Kondoa paintings, this study considers the difficult issue of associating living communities with the paintings. It also considers the historical connections between rock painting styles and identity demarcation in Kondoa. The research considers all four major linguistic categories found in Kondoa District; which are Click speakers (Wasandawe), Cushitic speakers (Waburunge, Waalagwa/Waasi, Wagorowa/Wafyomi), Nilotic speakers (Maasai, Tatoga) and Bantu language-speakers (Warangi). Archaeological, anthropological, genetic and linguistic evidence is used (Greenberg 1950, 1963, 1966; Sutton 1968b; Ambrose 1982; Ehret 1998; Tishkoff *et al*. 2007). The study looks at the four language groups and their living landscapes, and considers how and whether there is any link between them and the paintings.

To accomplish its goal, the study has three objectives: to divide the rock paintings of Kondoa District into a series of rock painting traditions, then to determine the broad authorship of each tradition and finally to develop an approach to understand the meanings of the symbolism contained within each tradition.

It is hoped that this study will make a decisive contribution to our knowledge of the Kondoa rock painting traditions and their authorship. The thesis will chart a better way forward for scholars searching for the meanings of the different kind of rock paintings found in Kondoa and help in moving research away from gaze-and-guess interpretations.

In the next chapter, I begin with a review of the study area and the archaeological evidence for its past history of settlements. This aims at determining the range of potential authors of the rock paintings in the Kondoa area. In chapter two, I follow this up with a detailed analysis of each potential painting group using combined linguistic, genetic and ethno-historical/anthropological evidence. I then proceed in chapter three to present a full historical review of past rock painting research in Tanzania paying special attention to Kondoa District. Chapter four explains my own study; its methods and approaches. In chapter five I lay out the details of my data recording and

analysis and then establish the Kondoa rock painting traditions sequence. In chapter six and seven I interpret my research findings in relation to a multi-stranded approach and provide a new conclusion to the issue of who painted the rock paintings of Kondoa. Finally I suggest approaches towards understanding the symbolic meanings of the paintings while chapter eight provides a conclusion and future directions of the study.

CHAPTER ONE

Environmental Setting and Archaeology

Introduction

This chapter situates the past settlement of Kondoa District. It discusses its location, geology and archaeology. Research on the archaeology of Kondoa has been limited (Phillipson 2005). This is in part because most archaeological research in Tanzania has been carried out in the northern part of the country, particularly around Olduvai Gorge, Ngorongoro, Serengeti, Lake Eyasi and Laetoli (Leakey 1951, 1965, 1971, 1975; Leakey *et al.* 1961; 1964; 1976; 1979; 1987; 1994; Isaac 1967; Isaac & Curtis 1974; Mehlman 1979, 1989; Manega 1993; Mabulla 1996) where researchers discovered hominids and established the archaeological sequence of the area. For this reason, I describe the environment and archaeology of Kondoa in the broader context of northern Tanzania and East Africa in general. The aim of the chapter is to introduce the study area, its social history and archaeological knowledge of the groups who may have painted on the rocks of Kondoa in the past. The chapter concludes by identifying and describing specific archaeological research findings concerning Kondoa.

Location

Kondoa District covers approximately 14,435 square kilometres. It borders the districts of Babati and Hanang to the north and northwest, Kiteto to the east and Dodoma rural to the south. Singida region borders the district to the west. Administratively, the district of Kondoa is split into eight divisions, namely: Farkwa, Goima, Kolo, Kondoa Township, Kwamtoro, Mondo, Bereko and Pahi (**Figure 1, Page 6**). A series of villages radiates outwards from Kondoa town, along the Great North Road, running from Dodoma northward to Babati and Arusha region. The Great North Road is in poor condition, with some parts of it impassable during the rainy seasons. The government of Tanzania is currently upgrading it to ensure that the road is completely functional throughout the year. It is estimated that the road will be complete before 2018**.**

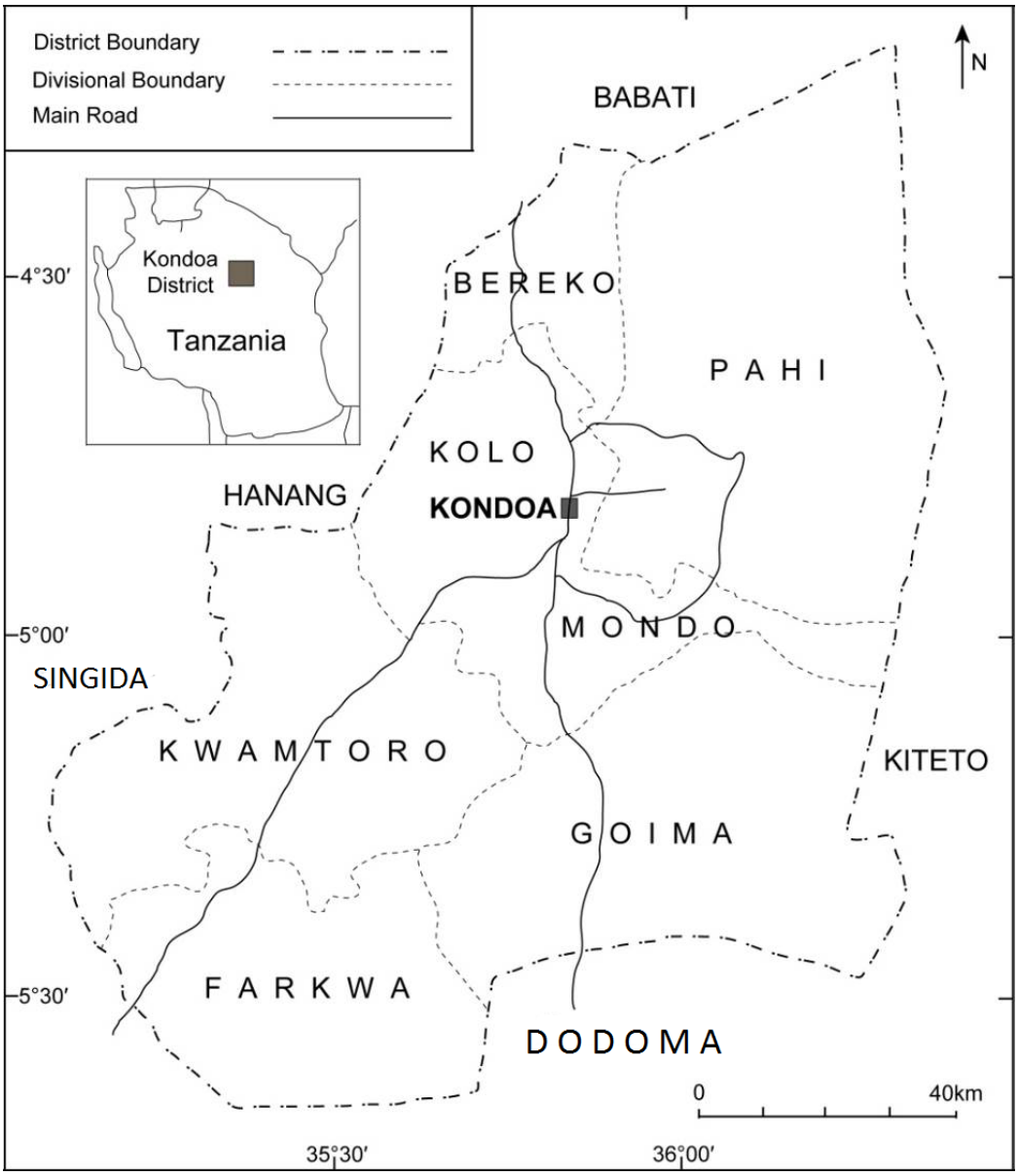


Figure 1: A map of Kndoa District showing administrative distribution

Geomorphological features

The topography of Kondoa District is dominated by: (1) vast plains that stretch into the Maasai Steppe to the east and south-west, (2) a central plateau found in the south and south-east and (3) the Irangi hills in the North and northwest (Christiansson *et al.* 1993). These features were formed by accelerated earth movement that caused warping and faulting. In some areas, the movement caused the formation of lowland lakes, rivers and seasonal swamps. For instance,

small lakes such as Haubi and the River Bubu in Kondoa were the outcome of the uplifting of land during the movement (Payton & Shishira 1994; Erikson 1998).

The Kondoa rocks are of Precambrian age and form part of the central Tanzania Granitoid Shield (Christiansson 1972: 319; Saggerson 1972: 7). These highly metamorphosed sedimentary rocks occur in series in some places, with veins of pegmatite protruding into the basement system rock. Most of these sedimentary rocks are rich in quartz and feldspars. According to Temple (1972), exposed granite and gneiss boulders from the Precambrian period and rocks from volcanic activities of the Cenozoic period, are predominant features. The tectonic activities of the Cenozoic period caused uplift and resulted in the formation of cliffs and overhangs (King 1967). The subsequently exposed rocks formed thousands of shelters and overhangs which provided ideal surfaces for prehistoric rock paintings (Masao 1979). The earliest paintings in Kondoa are dated to the Late Stone Age (LSA), perhaps as long ago as between 40,000 and 10,000 years ago (Anati 1986); most, however, must be much more recent than this date. The gneiss rock of the shelters is unstable, actively flaking in most of the areas where paintings are found. It is therefore unlikely to preserve paintings for many millennia.

Climate

The present climate of Kondoa is semi-arid to sub-humid. In Tanzania, semi-arid conditions are characterised by an average annual rainfall of between 400 and 800mm (Christiansson 1981), a long dry season with no precipitation and two short periods of rain (Christianssonet *al.* 1993). The pattern of rainfall is typified by scattered, short duration storms, falling within an average of 60 days in a year (Mbegu 1988).

The amount of rainfall in Kondoa District is highly variable. It ranges from 550 mm in the south-east to 640 mm around Kondoa Town (Mbegu 1988; Ngana 1990) and 900 mm in the Haubi area (Ngana 1996). The rainy season is between November/December and March/April, with a short dry spell in between (Mung'ong'o 1990). This is when people in Kondoa cultivate their fields. The genuine dry season lasts between six and eight months, from May to October. During the dry season, people harvest their crops. The average temperature in the district ranges from 18.9ºC in July to 23.1ºC in November, with an average value of 21.2ºC. The hottest time of the year is from September to October when humidity builds up because of the proximity to the

Intertropical Convergence Zone (Ngana 1992). This is normally the period during which people practise their traditional ceremonies and is the time most favourable for archaeological fieldwork.

Vegetation

Rainfall distribution in the region defines the type of vegetation in a particular place. However, in addition to the amount of rainfall, increases in population density also shaped vegetation types. High population densities have resulted in vegetation clearance to allow for human activities like agriculture, grazing, charcoal and firewood. In southern Uganda, deforestation occurred during the Pastoral Neolithic period 4,500 years ago (Hamilton 1982). Similar trends also occurred in Kondoa in the 1920s, during the outbreak of tsetse fly, when the British colonial administration instructed local people to clear the forest (Leakey 1983). The original vegetation was savannah woodland with small pockets of montane forest and savannah grassland (Eliapenda 2000). This original vegetation has been subjected to centuries of human activities such as cultivation, grazing, fire and wood harvesting, leading to its clearance. Subsequent interventions in the 1980s by the Dodoma land conservation programme in Kondoa District have helped to regenerate the area's natural vegetation.

The original vegetation of Kondoa supported a wide variety of wildlife that was exploited by hunter-gatherer societies. When Louis Leakey and Mary Leakey first visited the area from Olduvai in 1929, they reported a similarly wide range of animals in the environment as in the rock paintings including giraffe, eland, elephant, antelope, birds, dog, rhinoceros, reedbuck, zebra, kudu, hartebeest, pig, snakes, baboon, wildebeest, buffalo, hares, crocodile, bats, oryx, tortoise and scorpions (Leakey 1983). These animals are similar to those found in East Africa's savannah game reserves and woodland environments.

Similarly, Nash (1984) confirms that a large variety of animals were present around Kondoa in the early 1900s. He suggested that, at one time, Kondoa District may have had as high a carrying capacity as that of the present day Manyara National Park (1984). Today most of the game in the area has been hunted out. A small number of wild animals are to be found to the west, in the Usandawe area at Swaga Swaga Game Reserve, and to the northeast, on the border between Kondoa, Manyara and Tarangire National Parks, and at Mkungunero National Reserve. Fidelis

Masao (1976, 1979) notes that not only do people reduce the natural habitats of animals by clearing land for agriculture and practising animal husbandry, but they also kill wild animals for various reasons including food, rituals and sometimes because they are dangerous. The eland and kudu were used as food and for rituals among the Wasandawe people (Masao 1979) while baboon is a favourite food of the Hadzabe people during wedding ceremonies (pers. obs. 2003).

The present day vegetation of the Kondoa area is dominated by savannah grassland, Miombo woodland, scrubs and, in a few areas, thickets. The common trees are *Brachystegia sp.*, *Pterocarpus sp.*, *Angloensis sp.*, *Dicanthium sp.* and *Baobab sp*. In the valleys, *Acacia kirkii*, *Tortillis sp.* and *Delenixalata sp*. are common trees (Aitken 1950). The ridge crests, with their granite outcroppings and thin stony soils, do not support much more than a handful of thorny shrubs of *Preudo, Posoppis,Combretum, Burthia, Grewia*and *Bussia sp.* (Aitken 1950). Other vegetation types include the low trees and shrub savannah found in the drier south-western parts, with a dominance of *Acacia* and grass species such as *Themeda sp.* (Masao 1979).

Soil erosion

Soil erosion is a notable feature of the Kondoa landscape and its age and causes has been a matter of academic debate. The first erosion period is dated between 14,500 and 11,400 years ago and was associated with climatic fluctuation and tectonic movement during the end of the Pleistocene (Lane 2009). The second phase is dated to 900 years ago and has continued to-date, causing large gullies in the Haubi and Baura areas (Lane 2009:467). The current high state of soil erosion and land degradation in most parts of Kondoa District is due to nine centuries of overgrazing and land clearance for agricultural activities (**Figure 2, Page 10**). The cultivation and grazing process leaves the land bare while weathering and leaching removes the fertile organic top soil (Erikson 1998). The long periods of erosion in Kondoa have left the soil poor and infertile. In addition to insufficient rainfall, people in Kondoa have resorted to supplementing agriculture with animal husbandry, at least to sustain their livelihood. Areas adjacent to rock painting sites have been affected by both land clearance and grazing in large parts of Kondoa District.

Figure 2: A section in Kondoa showing effect of human activities, i.e. cutting trees (clearing farmland) and burning trees (for charcoal)

Land use planning

Subsistence and livestock farming dominate current land use patterns in Kondoa. Agricultural activities are carried out on small-scale farms and their productivity depends mainly on the availability of rainfall and labour. The major crops cultivated include maize, finger millet (**Figure 3, Page 11**), bulrush millet, sorghum, cassava, groundnuts, peas, beans, sunflower and sweet potatoes. Onions, sugar cane, pawpaw and citrus fruits are also cultivated on a smaller scale. Sorghum, along with finger and bulrush millet are commonly used to brew local beer for traditional ceremonies. They are also used, alongside other crops such as maize, cassava and beans for food while onion, sugar cane, pawpaw, sunflower and citrus fruits are grown commercially (see also Kessy 2005). Bantu language-speakers, particularly the Warangi ethnic group, are the area's main cultivators (Bagshawe 1923, 1925; Bwasiri 2008).

Figure 3: A typical finger millet farm in Kondoa District

Livestock-grazing has, for many generations, been an important part of land use in Kondoa. Grazing has focused on uncultivated, steep, slopes and plains (Kesby 1981). Livestock includes cows, sheep, goats and chicken. Cows and goats are not just kept for food but also used in traditional ritual ceremonies. The areas of Cushitic-Waburunge and Nilotic-language speakers, that is, the Maasai and Mang'ati (Tatoga), for whom livestock play a major economic role, own most of the livestock.

Demography

Kondoa District was reported to have the fastest-growing population in the whole of Dodoma (Sembajwe 1980; Madulu 1996), having experienced a rapid population increase since the end of the 1940s. The population doubled between 1948 and 1988, when the population of Kondoa District reached 340,554 (Kangalawe 2001). In 2009 (**Table 1, Page 12**), the population in Kondoa was 490,189 (Kangalawe 2001; field data 2010 based on district file).

In terms of its distribution, most of the district's population is concentrated in Kondoa Town, and in the villages of Goima, Kolo, Mnenia, Pahi, Mondo, Masange, Haubi, Kingale, Iyori, Usandawe, Soya, Bukuru, Thawi, Farkwa and Mrijo. In these areas population density has reached an average of 100 persons per kilometre square (Madulu 1996). Availability of land for agriculture and livestock grazing is one of the factors contributing to the high population density in these villages.

Table 1: Increase in human population in Kondoa District from 1930–2000s

Year	Number of people
1931	118,151
1939	129,981
1948	145,797
1957	158,834
1967	212,195
1978	275,278
1988	340,554
1998	422,299
2000	429,824
2002	442,812
2009	490,189

Source: (Kangalawe 2001) and field data from District file

Archaeology

The archaeology of Central Tanzania extends back to the Pleistocene. This period showed a sequence of Middle Stone Age (MSA), Late Stone Age (LSA), Pastoral Neolithic (PN) and Iron Age (IA) artefact assemblages (Inskeep 1962; Masao 1976, 1979, Kessy 2005; Lane 2009). Inskeep (1962), Masao (1979, 2007), Leakey (1983) and Anati (1986) agree that the earliest Kondoa paintings were made in the LSA period and thereafter. For this reason, my study concentrates on the LSA period and continues to the Pastoral Neolithic and Iron Age periods. I begin this section by identifying the archaeological sequences in North-Central Tanzania and

East Africa in general. Lithic artefacts and associated assemblages from various industries will give a broader understanding of the archaeology in East Africa and as the major changes in ways of life from the Pleistocene to Holocene. The knowledge I have gained from archaeological work in East Africa and Kondoa will then be applied to consider the sequence of settlement in Kondoa District.

The transition between MSA and LSA lithic industries in East Africa is characterised by changes in flaking technology and tool forms (Mehlman 1989:14; Bushozi 2011:49). The transitional MSA to LSA industry in North Central Tanzania is known as the 'intermediate industry' (Mehlman 1989; Mabulla 1996; Bushozi 2011). Sites with the intermediate industry in North Central Tanzania include Mumba, Nasera and Kisese (Mehlman 1979, 1989; Mabulla 1996; Bushozi 2011). Parallels to Tanzania's intermediate industry sites can be found at Muguruk, Kapthrurin Formation, Lukenya Hill and Enkapune Ya Muto in Kenya, dated to 29,000 and 39,000 PB (Marean 1992:74; McBrearty 1993; Ambrose 2002).

Generally, transition industries date roughly to 40,000–20,000 BP; however, a majority of the defining characteristics of the intermediate industry belong to LSA assemblage rather than MSA (Ambrose 2002; Skinner *et al*. 2003). What is more, new research findings at sites excavated by Mehlman's challenge the presence of an intermediate/transition industry and instead seek to group all transition materials to the LSA (Prendergast *et al.* 2007). This study also considers transition era as LSA rather than MSA. Within this time period (LSA) there have been major changes in lithic technology, adaption and behavioural patterns (Bushozi 2011:50).

The LSA industries are characterised by:(a) a blade-based lithic technology including backed pieces made on long blades using raw materials exchanged over long distances; (b) the appearance of evidence of the use of aquatic and plant resources for tool-making, body ornaments such as ostrich egg shells, shell or stone beads; (c) the occurrence of ochre and rock art; (d) hunter-gatherer adaptation to different environments including mobile savannah hunters, sedentary forest dwellers and semi-sedentary-fisher-gatherers; (e) the appearance of the earliest ceramic tradition known as Kansyore (Mturi 1998:65; Kusimba 2013:461; Prendergast *et al*. 2014:219). Archaeologists have named the period with these assemblages as Mode 5 technology industry (Phillipson 2005: 125; Barham & Mitchell 2008:327).

The best known Mode 5 technology industry sites in East Africa (Tanzania, Kenya, Uganda) include Kisese rock shelter in Central Tanzania, with a radiocarbon dated between 30,000–16,000 BP (Inskeep 1962), material from the Naisiusiu Beds from the top of the Olduvai Gorge cultural sequences dated to 40,000 BP (Leakey *et al.* 1972; Manega 1993; Skinner *et al.* 2003). Re–excavation and re–dating of several sites at Lake Eyasi, particularly at Mumba shelter, shows that microlithic technologies were established by 20,000 years ago (Prendergast *et. al* 2007). Northern Tanzanian Mode 5 technology industries are given local names such as Ishimijega, Oldeani, Silale and Lemuta (Mehlman 1989; Mturi 1998; **Table 2, Page 16** for details).

Similar materials to Tanzanian Mode 5 industries have been found in Kenya at Lukenya Hill and Buvuma Island and been dated to 21,000–4,000 BP (Gramly 1976) and 15,000–10,000 BP (Nenquin 1971; Sassoon 1973; Ambrose 1982) respectively. In Uganda, Mode 5 artefacts were recorded at the Nyero site in Kumi (Lawrence 1953; Posnansky & Nelson 1968 for details). Equivalent materials to Mode 5 assemblages are further described within the Eburran industry near Lake Nakuru in the Eastern Rift Valley of South-Central Kenya. Some examples are recorded at Gamble's Cave and Nderit Drift, dated to 13,000–9,000 BP (Leakey 1931; Phillipson 2005). During the Mode 5 era settlement took place in rock shelters on highlands that provided views of the surrounding plains.

Large rock shelters such as Mumba (Mehlman 1989; Prendergast *et al.*2007), Enkapune Ya Muto (Ambrose 1998) and Lukenya hill (Kusimba 2001) provide evidence of landscape use by hunter-gatherers communities during this time. Raw materials used for stone tool making were carried some distance. For instance, obsidian used for manufacturing stone at Mumba shelter was carried from Olduvai Gorge (Mehlman 1989), while at Lukenya hill obsidian was from Kenya Central Rift Valley about 100 kilometres away (Kusimba 2013:463). It is therefore; evident that there was interaction and exchange of materials in this period.

At the end of the LSA period, the earliest ceramic tradition appears. This is known as Kansyore. Kansyore pottery has been found in direct association with LSA lithic technology and wild faunal remains. Kansyore–using communities are associated with a fishing-hunter-gatherer economy (Lane *et al*. 2007; Dale & Ashley 2010; Prendergast *et al.* 2010; 2014; Kusimba 2013:

466). Mary Prendergast (2008:42) records a range of other materials associated with Kansyore pottery including ostrich eggshell, bone, shell beads, ochre, bone points, human remains and some rock shelters with paintings documented at Mumba, Chole and Nyangoma. Kansyore pottery is distinguished from other ceramic traditions by the presence of vertical and horizontal bands of impressed motifs. These include punctuates, comb impressions and zigzag motifs (Chapman 1967; Soper & Golden 1969; Mehlman 1989; Robertshaw 1991).

The pottery with this character has been discovered in both open–air and rock shelters. With the exception of Mumba and Nasera sites in northern Tanzania (Mehlman 1989; Prendergast *et al*. 2014), all key sites are situated close to permanent freshwater either on riverbanks or close to the shore of Lake Victoria. This kind of settlement pattern favours aquatic food resource exploitation (Dale & Ashley 2010:26). Examples of Kansyore ceramic sites in Kenya include Gogo Fall (Collett & Robertshaw 1983; Robertshaw 1991; Karega Mũnene 2003), Pundo (Lane *et al*. 2006), Siror and Haa (Dale 2007), Usenge 3 (Lane *et al.* 2006, 2007), Wadh Lang'o (Ashley 2005, Lane *et al*. 2007), White Rock Point and Luanda (Robertshaw *et al*. 1983). In Tanzania, Kansyore sites were recorded at Capri Point, Nyangoma and Chole, Mwanza region (Soper & Golden 1969), Iramba district of Singida region, in Central Tanzania (Odner1971b:159), Mumba shelter (Mehlman 1989; Prendergast *et al*. 2007, 2014) and Nasera (Mehlman 1989). Similarly, Kansyore ceramic materials are found in Uganda at sites such as Kansyore Island (Chapman 1967) and Songezi (Pearce & Posnansky 1963). Later Kansyore sites contain some traces of domestic livestock (Dale & Ashley 2010; Prendergast 2014). The presence of domestic livestock in late Kansyore suggests interaction with incoming pastoralists. Since most Kansyore is associated with a hunter-gatherer life way, it is generally labelled an LSA industry. It is not clear from where these hunter-gatherers obtained pottery. Dale (2007) suggests that they probably got it from early pastoralist groups through trade, but independent invention is also possible.

Excavations at Kansyore sites in East Africa region have produced divergent dates (Soper & Golden 1969; Mehlman 1989; Robertshaw *et al*. 1983, Lane *et al.* 2006, 2007; Dale 2007; Prendergast 2008; Prendergast 2014 for details). The earliest date for Kansyore is from Luanda, western Kenya dated 8,000 BP (Robertshaw *et al.* 1983). Much later dates have been obtained at Wadh Lang'o which is dated to 1989$\pm$28 BP and Usenge 3 produced a date of 3,310 $\pm$40 BP

(Lane *et al*. 2007:66). Current work at Mumba shelter northern Tanzania by Prendergast and colleagues (2014: 94) has dated Kansyore materials to 4825–4574 cal. BP.

In the Lake Victoria basin, sites with Kansyore typically date to between 3, 000 and 2000 BP (Soper & Golden 1969; Dale 2007; Lane *et al*. 2007). Kansyore assemblages extend into Southern Sudan and date from 4,000–2,000 BP (Bower 1991). This may suggest that Kansyore begun in western Kenya, then spread to Northern Tanzania before reaching the Lake Victoria basin and Southern Sudan (Bower 1991).

Table 2: Industrial sequences in North-Central Tanzania (Mehlman 1989:560)

Industry	**Techno-complex**	**Age**
Engaruka	Later Iron Age	± 400 BP
Lelesu	Early Iron Age	± 1,800 BP
Ishimijega/AngataKiti	Pastoral Neolithic	± 1,800–2500 BP
Oldeani and Olmoti	Ceramic LSA	± 5,000 BP
Silale	Later Stone Age	± 7,000 BP
Lemuta	Early Later Stone Age	± 17,000–21,000 BP
Nasera	Second Intermediate-LSA	± 23,000–30,000 BP
Mumba	Second Intermediate-MSA	> 30,000–? 45,000 BP
Kisele	Middle Stone Age	± 50,000–?90,000 BP
Sanzako	Early Middle Stone Age	± 130,000 BP
Njarasani	First Intermediate:Sangoan	? 200,000 BP

Mode 5 technology industry have been found together with early pottery and the faunal remains of domesticated animals, indicating that they overlapped with the time of the coming to the area of the new groups such as Pastoral Neolithic and farmers. The Mode 5 industries have been associated with the beginnings of the rock art in the area. Some of the Kondoa rock painting sites can probably therefore be traced back before the time of Kansyore pottery (Anati 1986; Mturi 1998:73–4; Phillipson 2005:127).

Neolithic

Neolithic is a Greek word that means ‘new stone’ and has been used in archaeology to refer to the end of the Stone Age era (Sadr 2003:197). During the Neolithic Stone Age period, people

used stone tools while also engaging in the cultivation of plants and the domestication of animals. Karim Sadr (2003:197), for instance, used the term 'Neolithic' to refer to stone tool using herders not involved in food production. The term Neolithic remains problematic in the East African context, since the context is significantly different from that in which the term was initially used in European and East Asia. In Europe, Neolithic meant the pre-metal tool farming period characterised by ground and polished stone tools. In both Europe and Asia the term Neolithic is associated with both pottery and agriculture.

In East Africa, the use of pottery and the introduction of food production appear after the introduction and spread of pastoralism to the region (Marshall & Hildebrand 2002; Karega Mũnene 1996; 2003). The usefulness of the Neolithic concept in African archaeology is therefore debated (e.g. Sadr 2003:197; Phillipson 2005:167–9; Barham & Mitchell 2008:345). Archaeologists working in East Africa no longer use the term Neolithic; instead, they use Pastoral Neolithic (e.g. Prendergast 2008; Prendergast *et al*. 2007, 2011, 2014; Seitsonen 2012; Lane 2013). In this thesis I use Pastoral Neolithic to describe the period in which pastoralism was introduced and became widespread in East Africa around 5,000–3,000 BP. The pastoral period is divided into two eras: namely, the Pastoral Neolithic (PN) and the Pastoral Iron Age (PIA).

The words 'pastoralists' and 'pastoralism' have brought their own confusion when discussed in relation to Pastoral Neolithic materials (Sadr 2003:198; Phillipson 2005). Different definitions both words have been used; for instance, Bower (1991:75) defines 'pastoralist' as a society whose basic economic needs come from pastoralism, through the sale or exchange of livestock and livestock product. Recent work by Phillipson (2005:169) has gone further, stating that 'pastoralist' represents 'societies or individuals who rely upon domestic animals for a very large component of their subsistence and whose lives are largely controlled by the need to care for their herds.' However, rather than using the term 'pastoralist' he (*ibid*: 169) instead decided to use the word 'herder,' meaning 'someone who owns or controls domestic livestock.' Both the words pastoralist and herder have been used in reference to South Africa (e.g. Sadr 2003:198; Smith & Ouzman 2004). For East Africa, I will use the term 'pastoral' following Bower (1991) and Marshall & Hildebrand (2002). I use it to refer to those groups in East Africa whose life and ways are predominantly based on pastoralism rather than hunting and gathering or farming.

Pastoral Neolithic

The PN in East Africa refers to the age in which domesticated livestock was first included into subsistence economies (Lane 2013:585). According to Bower & Nelson (1978: 562) the PN communities are those which (a) relied substantially on domesticated stock for their livelihood; (b) used pottery, and (c) employed typical LSA technologies to manufacture microlithic edged tools (see also Bower 1973; Robertshaw & Collett 1983:58; Mturi 1986, 1998; Robertshaw1988; Marshall 1990; Karega-Mũnene1996; Lane 2013; Kusimba 2013).

Researchers working in East Africa generally agree that the distribution of the PN economy occurred first around Lake Turkana from 5000−4200BP (Barthelme 1985), reached the central and eastern highlands of Kenya by 4500−4300 BP (Lane 2011), southern Kenya by 3800−3500 BP (Wright 2005) and by 4400−4150 BP in both southern and western Kenya and northern Tanzania (Karega Mũnene 2003; Prendergast 2011; Lane 2013). From northern Tanzania, archaeological evidence showed that the PN movement reached western Tanzania around Lake Victoria basin by approximately 3000 BP (Soper & Golden 1969; Marshall 1990). Domestic animals which define PN such as cattle, sheep, goats were domesticated outside the immediate region, while donkey and camels perhaps originate in the North (Lane 2013: 586).

Whilst scholars such as Wright (2005), Lane (2013) and Prendergast (2014) believe the PN culture spread into the East African Rift Valley from central, southern and western Kenya to northern Tanzania. Yet, Chami (2001) discovered archaeological findings along the coastal and interior regions of Tanzania, including Machaga Cave in Zanzibar, that contain PN assemblages. Chami's discoveries has been challenged by subsequent research carried along the coast of Tanzania by Crowther and colleagues (2014:21) who argue that there is no evidence of settlements before the Middle Iron Age. More research is required in the coastal regions of East Africa to clarify this debate.

The domestic animals found in the East Africa PN were domesticated at least by 9,000 years ago at Nabta and Bir Keseiba sites, in southern Egypt (Gautier 2002; Marshall & Hildebrand 2002; Barham & Mitchell 2008:344; Gifford-Gonzalez &Hanotte 2013:496). This early date ties with archaeological evidence for the introduction of livestock and their spread among different

populations (Tishkoff *et al*. 2007). It is not clear as to which group first practised a PN economy in the region, whether it was a Cushitic-speaking Afro-Asiatic group or a Nilotic-speaking Nilo-Saharan one. Whichever, a southward expansion of small groups of herders from South Sudan and Ethiopia led to the introduction of pastoralism to East Africa. The linguist Christopher Ehret suggests that these early pastoralists were of the Southern Cushitic group (Ehret 2003). It has been also suggested that the spread of domestic stock and changes in material culture, settlement strategies, burial practices, shows that the PN should be divided into two periods:(a) initially exploratory period 5000–3500 BP and (b) later period of consolidation, settlement and social fragmentation 3500–2000 BP (Lane 2013).

The domestic animals in the PN are associated with early ceramic wares such as Nderit, Narosura and Akira (Wandibba 1977; Mturi 1986; Mehlman 1989; Barham & Mitchell 2008: 372). The earliest pottery in Africa was documented at Bir Kiseiba and dated to 9100 years ago and at Nabta Playa, dated to 8800 years ago. Both sites were found in Egypt (Garcea 2004). The pottery at both sites is characterised by wavy line decoration (Mohammed-Ali & Khabir 2003). Similarly decorated pottery was found in the Nile valley along the border between Chad and Sudan and dated to 6200 years ago (Caneva & Marks 1992). The relationship between this early pottery and the East African Pastoral Neolithic pottery is unclear although we know that both the cattle and the tradition of pottery-making must ultimately derive from these origins.

Around 4500−3000BP a new type of pottery appeared in the archaeological records of the Lake Turkana region, named as Nderit. It differs from Kansyore in features such as firing, decorative techniques and vessel shapes (Ambrose 1998; Barham & Mitchell 2008). Significantly, Nderit ware has external and internal decoration (Haaland 1972; Mturi 1986). The external decorations cover the whole body of the pot and are arranged in panels, while the inside is often decorated with grooves. Sometimes the external surfaces lack decoration (Bower 1991). Microlithic obsidian tools are associated with the Nderit pottery tradition and this material was obtained locally (Nash *et al*. 2011). The makers of Nderit tradition are linked to hunting, fishing as well as pastoralism (Barthelme 1995; Lane 2013). This tradition is recorded at the sites of Dongodien, Jarigole, Lokeridede and Stable's Drift in Kenya (Lane 2013: 590). In northern Tanzania the tradition has been recorded at Gol Kopjes-Serengeti, dated around 4300 BP (Bower & Chadderdon 1986). Nderit pottery extends from southern Kenya to northern Tanzania and into

the Central Rift Valley (Haaland 1972; Barthelme 1985; Mturi 1986). The tradition is the oldest in northern Tanzania and central Kenya and the youngest in southern Tanzania (Bower 1991).

Narosura is another ware documented in East African archaeological sites and is characterised by comb-stamped impressions and incised lines. The comb-stamped impressions form oblique lines or slightly curved and zig-zag lines**.** Inside decoration is dominated by the presence of double lines of cross-hatching (Bower 1991:13). Vessel type includes beakers, and open-and narrow-mouthed bowls; some gourd-shaped vessels also occur. Associated materials in both Tanzania and Kenya sites are similar to those documented for the Nderit tradition. Major sites with this tradition are Narosura, Pronged Drift, Salasun and Crescent Island. Narosura sites have been dated 2800−1400 BP in Kenya (Lane 2013).

In Tanzania, both open air and rock shelter Narosura sites have been identified. Domestic taxa are found mainly in rock shelters rather than at open air sites. Examples of the sites are recorded at Engaruka Basin 6 dated 3500 BP (Seitsonen 2012:11) and around Lake Eyasi at Gileodabeshta 2 dated to 3075−2878 BP (Prendergast *et al*. 2014:93). In the western parts of the Kilimanjaro region, Narosura ware has been associated with dates of around 1700–1,000 BP (Mturi 1986). Current research conducted at Ufana valley in Mbulu region about 80 kilometre South of Lake Eyasi, Narosura pottery was dated to 2855 ±20 BP; this is taken as a direct date for the Pastoral Neolithic in northern Tanzania and it is at an early end of the Narosura in Kenya (Prendergast *et al*. 2014: 8). The date of 3000 BP correlates to the development of pastoralism in northern Tanzania, which is connected to the Narosura pottery (Prendergast *et al*. 2014:8).

Akira ware is distinguished from Narosura by being thick-walled. The vessels are always executed with fine incised lines. The majority of Akira ware shares some similar features to Narosura pottery, suggesting some cultural continuity between these two traditions (Bower 1991). It is found in Seronera, Nasera rock shelter, Serengeti and in western Kilimanjaro. It dates to around 2,000−1,200 BP (Mturi 1986; Mehlman 1989; Lane 2013: 590). At Lukenya Hill in Kenya, similar assemblages date to 1500–1300 BP (Robbins 1972).

In summary, Nderit, Akira and Narosura wares are the true PN ceramic traditions. Ambrose (1982) and Karega Mũnene (1996:249) suggest that Nderit, Akira and Narosura wares are the

work of the earliest food producers and they argue that these people were the ancestors of the modern Alagwa, Aramanik, Asa, Waburunge, Dahalo and Iraqw. The southern distribution of the PN sites in Tanzania (Serengeti Plain and Lake Eyasi basin) is evidence of the southern frontier for early herding and the area of long-term forager-food producer interaction (Lane 2004; Prendergast 2011).

Analyses of PN findings from both Kenya and Tanzania show clear connections between the two. For instance, obsidian found in Tanzanian sites came from the Naivasha basin in Kenya and was probably brought through exchange among the PN people. The flow of obsidian decreased later in the PN period signalling the end of a long down-the-line exchange between the Central Rift Valley in Kenya and the peoples of northern Tanzania (Prendergast *et al*. 2014:20).

Pastoral Iron Age (PIA)

The Pastoral Iron Age is a direct continuation of the pastoral Neolithic period, but with the addition of Iron. During the PIA, stone tools continued to be used. The approximate date for the PIA is from 1250 to 500 years ago. At the beginning of the PIA, iron production was not among the major activities to the communities; smiths were inferior, marginalised and low social status (Lane 2013:586). The PIA period is associated with the continued domestication of stock and the use of similar ceramics (Ambrose 1982; Collett & Robertshaw 1983; Robertshaw 1988; Bower 1991:72). Pastoral Iron Age sites contain iron objects such as tuyeres and slag, remains of cattle, caprines, some remains of wild animals, evidence of cereal grains and sometimes cairn burials (Bower 1991:72). Some sites also contain low quantities of roulette design pottery (Bower 1991:75). The process by which this technology changed is not apparent, scholars such as Sutton (1973) and Lane (2013: 596) suggests that the change was accompanied by a change in weaponry, military tactics, settlement designs and consolidation of the Moran age-sets in some pastoralists communities.

The PIA is similar to Elmenteitan assemblages (Robertshaw 1988; Bower 1991). Evidence of the PIA was found at Doloraine farm, Maasai Gorge and Lukenya and Hyrax Hills (Bower 1991; Lane 2013). In Tanzania, PIA sites have been excavated at Ngorongoro Crater and around Lake Eyasi. The PIA assemblages at these sites are dated to about 500 years ago (Bower 1991). This date is taken to be the time when the Maasai entered into the area (Sutton 1968b, 1973).

Early Iron Age (EIA)

The Early Iron Age in East Africa is characterised by the arrival of iron technology, a new type of pottery and the cessation of the use of stone tools. Early Iron Age communities were settled farmers, domesticating animals such as cattle, goats and sheep, living in scattered village settlements and using metallurgy for farming and manufacturing pottery. Common EIA ceramics are called Urewe (Ashley 2010). The number of EIA sites is few, implying that the population density of EIA communities was low.

Archaeological findings show that Urewe ware was used in the Lake Victoria and Buhaya areas of north-western Tanzania, around 2,500 BP (Schmidt 1981; Phillipson 2005). The ware was initially known as dimple based pottery (Leakey *et al.*1948) but was named Urewe by Posnansky (1961) after a site in south-western Kenya. It is characterised by thick and incised bevelled rims, necked pots and shallow hemispheric bowls, forming a dimple base shape (Reid 2005:590; Ashley 2010). The shoulder of the pots has incised lines, while the body is characterised by circles, loops and triangles. Hatching and dots are found below the rim (Leakey *et al.* 1948). Other characteristics associated with Urewe pottery are the beginning of iron working and the spread of Bantu languages-speaker (de Maret 2013).

Urewe pottery was identified at iron working sites including a complete vessel buried at the base of a smelting furnace. This suggests that this vessel was used for ritual activities during the smelting process. Other functions of Urewe pottery are cooking and consumption (Ashley 2010:145). Few examples of Urewe ware have been found in rock shelters. Posnansky and colleagues (2005) suggest that these reflect discrete arenas of supra-household consumption. Ceri Ashley (2010:147−8; Reid 2013:890) demonstrated that Urewe pottery changes in its production and morphology through time and she created the terms‘ Contact’ and ‘Post-Urewe’ ceramics to define these changes.

The ‘Contact’ Urewe represents the pottery of the terminal hunter-gatherer-fishing communities. At Usenge 3 high levels of interaction and exchange in lithic technology and faunal remains were identified between LSA Kansyore users and ‘Contact’ Urewe users. The two communities were closely connected (Ashley 2010:148). Lane (2004) concludes that the ‘Contact’ Urewe

manufactures were involved in what he called a ‘moving frontier’ between farmers and hunter-gatherers.

Additionally, the Post-Urewe ceramics were recorded only on the islands and margins of Lake Victoria and were associated with highly mobile communities (Reid 2013:891). The Post-Urewe settlements overlapped in time with some true Urewe-using communities (Giblin 2013: 521). Around the Lake Victoria basin, ceramic change went together with the expansion of agriculture from small to large scale, and from more community based production to more regionalised production (Ashley 2010; Reid 2013). The date of Post-Urewe ranges from first millennium to early second millennium BP (Ashley 2010:149, 150, 156).

In the Eastern Africa region, evidence of early Urewe ware is documented in Rwanda and Burundi (Giblin *et al.* 2010). Urewe has similar features to pottery from southern Chad and the equatorial region. For this reason it has been linked to the origins of the Bantu migration into eastern Africa (Nurse 1982; Phillipson 2005:251). Studies of pottery suggest that pottery found in southern Africa and made by Bantu language-speakers was derived from Urewe ware and diffused rapidly from eastern to southern Africa (Soper 1971; Phillipson 2005:251; Ashley 2010; de Maret 2013).

Sub-styles of Urewe ware extend into Central and Coastal parts of Tanzania and Kenya. Sites include Kwale, which is close to Mombasa (Soper 1971), Lelesu in Central Tanzania (Sutton 1968a), Kwale in northern Tanzania (Odner 1971a, c) and Limbo (Chami 2006). Other sites were identified at Chobi in northern Uganda (Soper 1971). These sites date to around 1,800 BP. Similar findings have been made in adjacent parts of the Democratic Republic of Congo (Van Noten 1979). The Urewe tradition therefore seems to have originated in Chad and the equatorial region and thereafter, moved into Rwanda before spreading to the Lake Victoria region, south western Kenya, north central Tanzania and eastwards to the coast.

Later Iron Age (LIA)

The transition from the EIA to LIA is not obvious in the archaeological sites of East Africa (Phillipson 1976:69). David Phillipson (1975: 23) and Ceri Ashley (2010) noted slight changes

in the pottery style from Urewe ware to roulette ceramics. The LIA pottery is characterised by use of more roulette designs such as comb-stamping, cord-impression, hatching and undecorated pottery. Rollers of wood or twisted cord were used to make different kinds of decoration (Soper 1971). Necked pots and long vessels are connected to roulette pottery (Kessy 2005). The roulette ceramic design seems to have originated inWest Africa and spread to East Africa (Soper 1971). This ceramic design has been discovered in several sites in East Africa and researchers such as Phillipson (1976:68) and Mturi (1986, 1998) associate it with LIA groups of Bantu language-speakers moving into East Africa.

Life in the LIA shows a direct continuation from the EIA and is just more extensive and intensive. For instance, larger areas of land were cultivated and manure was used to increase soil fertility (Mturi 1998:124). Some areas such as Engaruka in northern Tanzania developed specialised agriculture based on an irrigation system (Sassoon 1967). During the LIA period we see increasing evidence of the development of trade among neighbouring communities and with the coast. The occurrence of glass beads in western Kilimanjaro and the Pare area of Tanzania show the extent of trade with the coastal area (Odner 1971a,c; Walz 2010). Along the Lake Victoria basin, the LIA saw the development of centralized kingdoms such as Buhaya (Schmidt 1981; Reid 2013).

Overview

In summary, hunter-gatherers were the earliest inhabitants of East Africa. These communities were the makers of the microlithic tools, typical of the LSA period (Phillipson 2005: 157–8). They used these tools for hunting wild animals and collecting plant foods. Later on, they started to use bone harpoons for fishing and took on Kansyore pottery about 8000 years ago (Mehlman1979, 1989; Phillipson 2005:157–8).

Archaeological findings demonstrate that pastoralist groups were the first to intrude upon these first people. They had domesticated cattle, sheep and goats; and also made microlithic tools and made various different types of pottery. They moved from the Southern highlands of Kenya to the Northern part of Tanzania around 3000 years ago (Bower 1973; Phillipson 2005). The

pastoralists also cultivated some grain crops such as millet and sorghum (Bower 1991) and at a later stage, they started to use iron objects (Phillipson 2005; Lane 2013).

Farmers were the last group with their own distinctive material culture to occupy East Africa (Posnansky 1968; Mturi 1998; Phillipson 2005). The archaeology of East Africa shows considerable overlap and interaction between the LSA, PN and IA peoples (Leakey 1931, 1936; Inskeep 1962; Soper & Golden 1969; Odner 1972; Nelson 1973; Phillipson 1975, 1976, 1977, 2005; Robertshaw 1988; Mehlman 1989; Bower 1991). I expect to see evidence of this sequence and this interaction in the archaeology of Kondoa District. I therefore now review past archaeological research conducted in Kondoa.

Archaeological research in Kondoa

The archaeology of Kondoa District, central Tanzania is not well known; few sites have been excavated (Kohl-Larsen & Kohl-Larsen 1938, 1958; Inskeep 1962; Sutton 1968a; Liesegang 1975; Masao 1976, 1979, 2007; Leakey 1983; Kessy 2005; Lane 2009). Most of the research in the district has concentrated on documentation and description of rock paintings (e.g. Bagshawe 1923, 1924, 1925; Nash 1929; Culwick 1931a, b; Aitken 1948; Fosbrooke 1950a, b, c; Fozzard 1959, 1966; Leakey 1936, 1950; Ten Raa 1971, 1974; Masao 1976, 1979, 1982, 1990, 1991b, 2007; Madokoro 1982; Leakey 1983; Anati 1986; Lewis-Williams 1986; Lim 1992; Bwasiri 2008). For the purpose of this section, I consider only archaeological surveys and excavations in the area. The work on rock paintings will be discussed in chapter three. I am only interested here in establishing the archaeological identity of the rock painters of Kondoa.

From the end of the 1930s to the 1950s the German explorer Ludwig Kohl-Larsen and his wife travelled around north-central Tanzania and particularly the Lake Eyasi area at Karatu District, Kondoa area, and Iramba and Isanzu in Singida region. They recorded rock painting sites and made excavations around those sites. Excavations at Lelesu-Usandawe area in Kondoa District, revealed the first evidence of ceramic pottery in the archaeology of Kondoa (Kohl-Larsen 1938, 1958). They took the pottery samples to Tübingen University in Germany where it was studied by Smolla. Smolla named the pottery from Usandawe as the “Sandaweland-Type” (1956). Kohl-Larsen and his wife’s work had strong political overtones. He was a member of the Nazi party

and his work aimed to further Nazi intellectual agenda. For this reason it is not highly regarded or influential in current thinking.

In 1951, at the suggestion of Louis Leakey, Mary Leakey and her research team visited Kondoa district to study rock paintings. She conducted excavations near/within rock shelters with paintings. Mary Leakey's excavations were targeted at Stone Age assemblages whose makers were assumed to be responsible for making the paintings. She employed four local people (Mpole, Mussa, Omari and Issa) from the Warangi group to help with the excavations. Unfortunately, the findings from the excavations showed only recent occupation and failed to meet her expectations. Only one site, Kisese II rock shelter, produced a deep deposit. The site has a full MSA to LSA stone tools sequence. The tools were made mainly from quartzite and red ochre pencils were found in all layers. The younger layers contained pottery. Mary Leakey suggested that the red ochre was used for making rock paintings as well as for body decoration (1983:21). The Kisese finds were kept in the National Museum of Kenya, largely unpublished, until 2011 when they were moved to the National Museum of Tanzania.

In 1956, Mary Leakey invited Ray Inskeep from Cambridge University to extend excavation at Kisese II. The excavated area proved to have twenty-eight layers over a depth of six metres. Larger numbers of archaeological artefacts were recorded: microlithic stone tools such as burins, convex scrapers, *outlisécaillés* and ostrich eggshell beads. The stone tools showed a transition between MSA/LSA (Mehlman 1989). The excavation also indicated evidence of later iron working in the form of *tuyere*, slag and pottery.

Kisese II also contained early pieces of both dark red and yellow ochre. Following Mary Leakey, Inskeep suggested that the ochre was the raw material for the depiction of the paintings (1962:252–3). Leakey asked Inskeep to write a paper on his findings and to obtain dates for the paintings. Mary Leakey wrote:

> 'A series of four radio-carbon dates from the upper nine feet (2.7m) show that eleven feet (3.3m) of deposit, with stone tools, bone and ostrich eggshell in almost all levels, had accumulated before 29,000 years ago, beginning perhaps as early as 50,000 years ago. By 16,000

> years ago, and perhaps as early as 20,000, the inhabitants of Kisese II were making the tiny stone tools (microliths) characteristic of the final stages of the later stone age, which terminated when stock-raising began to supplement hunting and gathering as means of livelihood after about 1,500 years ago' (1983:21).

Inskeep's findings at Kisese II have been used in discussions of the age of rock paintings but the Kisese II dates are questionable (Masao 1979; Mabulla 2005). I discuss this further in chapter three. Unfortunately, only short descriptions of the Kisese II findings were published (Inskeep 1962). Masao points out that the Kisese II assemblages show deep deposits of either transitional stage or early Late Stone Age that are 'older than 10,000 years ago'. He suggests that the lower archaeological assemblages at Kisese II are older than other central Tanzanian sites. He argues that the scrapers in the Kisese II lower levels are more than 6,000 years older than those at Majilili II and Kandaga A9 (*ibid*:211). Yet, the date of 10,000 years ago now seems too young an estimate: it corresponds to a date obtained at Lake Turkana where hunter-gatherers made microlithic tools and used bone harpoons for fishing (Phillipson 2005:158).

A similar study was conducted at Mumba shelter, in the Lake Eyasi basin of Tanzania, about 150 km north of Kondoa District, by Mehlman. The results from this study were compared with the Kisese II assemblages. Mehlman (1989:365) suggested that the Mumba lithic assemblages below level 9 are similar to the early Kisese II rock shelter assemblages and these layers were dated to more than 31,500 BP. Some Kisese II artefacts were also similar to Nasera industry materials above level 9 and dated older than 18,200 BP (Mehlman 1989:365). At Kisese II, Mumba and Nasera, early LSA materials are dominated by scrapers and a few backed pieces, while later assemblages are rich in microliths (*ibid*: 365).

Professional Iron Age studies in Kondoa District began when the British scholar John Sutton excavated in the Usandawe area in the 1960s. Sutton aimed to relocate and re-examine pottery sites discovered by Kohl-Larsen and his wife. He was able to collect a large number of surface potsherds such as rims, decorated pieces and grinding stone. The surface collection influenced Sutton to establish small trench excavations. These excavations revealed broken stone tools and pottery material, but no iron objects (Sutton 1968a:171).

The potsherds mostly had thickened rims and some were rounded. They were commonly bevelled. Sutton named this pottery 'Lelesu ware' (Sutton 1968a:171). He associated Lelesu ware with the Early Iron Age pottery known as 'dimple-based' and found in the Lake Victoria region (Posnansky 1961). According to Sutton (1968a:169), the pottery is also similar to Kwale ware found throughout north eastern Tanzania (Mturi 1986) and the southern and coastal regions of Tanzania (Mapunda 2003, 2004; Chami 2001). Sutton argued that radiocarbon dates suggested that the East African Early Iron Age, including Lelesu ware, dated back to the start of the first millennium AD (1968a:172). He also suggested that the tradition represented early Bantu language-speaker settlement in the area. Sutton (1968a; see also Mehlman 1989; Kessy 2005) updated Kohl-Larsen's excavations in Usandawe and reclassified the Sandaweland-Type pottery as Lelesu Early Iron Age ware. This name has been retained up until today.

Another archaeological reconnaissance in Kondoa was conducted from July to September 1974 by Gerhard Liesegang. He was amongst Masao's PhD research team in both Kondoa and Iramba districts. Liesegang excavated near rock paintings and at open air sites at the villages of Haubi, Kandaga and Mnenia/Musia. His findings include pottery at the Haubi site, which was decorated by a comb-stamping technique and showed a dotted wavy line. The pots had long necks and some had impressed decoration while others had none (Liesegang1975:97). These are characteristic of the LIA pottery of Kondoa. No date was obtained from the Haubi pottery sites. Using more recent findings by Paul Lane (2009:473) at Haubi we can date these LIA assemblages to younger than 500–600 BP. Liesegang (1975:104) argued that the Haubi pottery shared similar motifs to Pare ware (Odner 1971c).

At Kandaga A9 rock shelter Liesegang (1975:97) found tuyere, slag and metal objects including pieces of copper, grinding stones, pottery and LSA artefacts. The Iron Age layer was on top and was separated from the LSA assemblage, showing different cultural traditions. The area's pottery had grooves made by the impression technique**.** According to Liesegang (1975:97) Kandaga pottery is similar to the Engaruka ceramic material, 160 km North of Kondoa District. It represents another type of LIA pottery and is dated to after 400 BP (Mehlman 1989:560).

Other sites excavated by Liesegang include Musia and Kwa Ndee, both located within Mnenia village. The Musia site is located 1.5km east of the Chungai rest house that was built by Mary Leakey during her work in Kondoa. A few potsherds were found and these were characterised by impression decoration. The Kwa Ndee site is located near the Ncholincholi rock painting site (A22). It contained pieces of slag and stamped potsherds in the top layer and hammer stones and an anvil below (Liesegang 1975:97). Liesegang also excavated in the Kolo area about 800m from the *Mongomi wa Kolo* rock paintings site. Archaeological material recorded included pieces of tuyere and iron slag. Liesegang (1975: 99) grouped and named the pottery from Musia, Kwa Ndee and Kolo as 'Irangi pottery', which he assigned to the LIA. A similar ceramic assemblage has been dated to 1,030 $\pm$ 40 BP (Kessy 2005:543; Lane 2009:473).

A remarkable archaeological study in central Tanzania was conducted in July 1974 by Fidelis Masao. He did an extensive survey and recording of rock paintings sites and excavated within/near rock shelters with paintings. Masao excavated at Kandaga A9 rock art site and Majilili BII/Kolo BII in Kondoa District and at Kwa Mwango-Isanzu and Kirumi-Isumbirira in Iramba District. Masao attempted to establish a relationship between LSA archaeology and the rock paintings sites found in central Tanzania (1979:21). Since Kandaga A9 and Majilili BII are located within my study area, I discuss them in detail.

Kandaga A9 rock shelter is located within the village of Kandaga on the north-eastern slope of the Maasai escarpment. The rock shelter is characterised by various types of paintings, ranging from naturalistic paintings of animals which are now faded, to white geometric figures such as lines, squares, circles, ladders, and zigzag patterns (Masao 1979:21). The presence of these varied figures influenced Masao to choose the site for excavation.

The findings from Kandaga A9 site were divided into three categories, namely LSA material, faunal remains and Iron Age material (Masao 1979:56). The Iron Age materials were found in the upper layer and contained pottery, iron slag, tuyere and a few microlithic tools. The upper layer also has a few domesticated animal bones, including those of cattle. Kandaga pottery, which shares broadly similar features with other East African Later Iron Age pottery (Masao 1979:73; see also Phillipson 1975, 1976) is characterised by incised decoration in hatched bands, rouletting and comb stamping**.** The roulette pottery type in East Africa was first discovered at

Uvinza, Kigoma region, in the western part of Tanzania and is dated to the twelfth century AD (Masao 1979:57). Roulette pottery techniques are still used today in parts of central Tanzania (Odner 1971b:62).

Lithic artefacts together with wild faunal remains were found below the Iron Age materials. The lithic assemblage included burins, scrapers, hammers, polished ochre, crescents, blades and grinding stone**.** The raw material used for tool manufacture was mainly quartz and about 10 pieces of obsidian were also collected. Quartz is a local raw material found in abundance in many areas of central Tanzania, while obsidian can only be obtained some 170km away in the Ngorongoro area (Masao 1979:58). Faunal remains of various wild animals were also found in greater concentration than in the LIA layer. These included bovid, zebra, hartebeest, reedbuck, bushbuck, gazelle and other antelope remains. A few remains of domesticated cattle were also found. Bovid, gazelle and antelope seem to have been the preferred diet of the occupants of Kandaga (Masao 1979:72).

Masao also collected charcoal and bone samples from the Kandaga excavations and used them for dating. The dates from these samples differ; for instance, a charcoal sample was dated to 200 years ago, while a bone sample found 40cm further down was dated to 3,375 BP. The older date was associated with the LSA lithic assemblage whilst the first represented the period of Iron Age occupation (Masao 1979:55). The early Kandaga date agrees with other LSA dates in Central Tanzania such as Kwa Mwango 3,270 BP, Kirumi 3,665 BP (Masao 1979:56) and Lulalampembele +3,830 BP (Odner 1971b). Late Stone Age artefacts at Kandaga also correspond to those found at Nyangoma rock shelter. For example, they contained stone bowls dated to 2,640 BP (Soper & Golden 1969). Iron Age deposits were found mixed together with LSA materials in the upper layers of Kandaga A9 site as noted at Kisese II (Inskeep 1962), Lulalampembele (Odner 1971b), Nyangoma and Chole (Soper & Golden 1969) and Kwa Mwango and Kirumi Isumbirira (Masao 1979).

Masao's findings at the Kandaga A9 site led him to conclude that two traditions existed in the area: Late Stone Age and Later Iron Age. Masao suggested that the Kandaga A9 site was first occupied by people practising Stone Age technology and these people later came into contact with Iron Age people. The LSA community continued to make stone tools but later incorporated

iron in their technology. The transition from LSA to IA was very slow (Masao 1979:73). Masao (1979:83) recorded remains of domesticated animals, particularly cattle, in the upper layers mixed with IA materials. Masao associated these remains with LSA people and argued that they obtained meat from pastoralist communities living to the north through contact with them (1979:83). The occurrence of grinding stones from the hearth has been interpreted by Masao (1979:83) as evidence that LSA people prepared their own grains. Grains in East Africa were introduced by the PN groups (Ambrose 1982). Masao's findings provide evidence of only two groups in Kondoa during the LSA and LIA period. Rock art painting evidence from Kondoa may assist in supporting or challenging Masao's conclusion and I will discuss this later.

A second site excavated by Masao in 1974 was the rock painting site at Majilili BII/ Kolo BII. It is situated on Muhenya hill, which is also called Kolo hill. The site is very close to the rock art site of *Mongomi wa Kolo*/Kolo BI and Kolo BIII. Majilili BII is located near the top of the Kolo hill. The rock shelter has paintings depicting different subject matter: human figures with headdresses or masks, animals and other figures.

Only one trench was dug in the shelter at Majilili BII. The findings included an upper layer, which contained a concentration of artefacts; mostly large chunky polyhedrons which decreased in lower levels (Masao 1979:53–6). Other microlithic materials found in other layers included cores, scrapers, burins, crescents, *outlis écaillés* and flakes in different shapes and sizes. The lithic tools found are similar to those recorded at other LSA sites in East Africa (Masao 1979:94). At Majilili BII, no fauna, pottery or iron objects were found. The absence of faunal remains and Iron Age materials influenced Masao to make three suggestions: firstly, the site was not occupied by Iron Age people; secondly, the artefacts here were older than those at Kandaga A9 but, how much older is not known because no materials were dated; and lastly, the presence of many cores in level I represent waste products which were no longer needed, which indicates that the site was a factory site, and it was occupied seasonally (1979:95). These suggestions also imply that only hunter-gatherers occupied the shelter, without contact with other groups that were observed at Kandaga.

More recent and important archaeological research in Kondoa District was conducted by Paul Lane in 1999. He carried out work at the villages of Haubi, Kalamba, Baura, Pahi-Lusangi and

Markaz, Mwisanga, Talambo and Ausia. The findings of this work include Middle Stone Age and Late Stone Age lithics made from local quartz and quartzite, Early Iron Age, Middle Iron Age and Later Iron Age materials. The MSA assemblages were few and did not form part of Lane's analysis. The findings from both survey and excavations suggest evidence of the presence of early farming and metal using communities from the middle of the first century AD (Lane 2009:468).

According to Lane (2009:470) some pottery (Haubi site 16) has bevelled rims similar to the early farming ceramic traditions found in Lelesu at Usandawe (Sutton 1968a) and Kwale ware from Pare and Usambara Mountains (Odner 1971c:89–130) and Kilimanjaro (Odner 1971b:131–149). The Baura 1 and Kalamba 2 sites both comprise surface scatters of iron objects and are situated in catchments near Lake Haubi. The dates of these sites (**Table 3, Page 33**) are early and were based on charcoal found within pieces of slag collected during the surface survey (Lane 2009:471). Lane also explains that the dates may come from old wood used to make charcoal for iron smelting. For this reason, it may not reflect the real date of the EIA occupation of the area. Around Haubi, other sites show evidence of farming and iron use only dating back to AD 1000 (Lane 2009:471). Lane noted that early farming sites around Haubi occurred mostly on the hill slopes (see also Kessy 2005). The later farming settlements (ca. 1000–200 BP) were found lower down the slopes (2009:471; see also Kessy 2005:137, 165). Lane's findings also suggested that there was an increase in iron smelting activities from ca. AD 1300.

Table 3: A list of radiocarbon dates for Iron Age sites from Irangi Hills, Kondoa (Lane 2009:473)

Site	Lab No.	Date BP	$\delta^{13}C$	Calibrated Date Range	Material Dated
Kalamba 2	Pta–8179	2540±60		778–413 BC	Charcoal
Baura 1	Beta–176185	2500±40	–11.3	756–406 BC	Charcoal
Haubi 16	Pta–8213	1930 ±50	–25.1	6–313 AD	Charcoal
Lusangi 1	Beta–176189	1660 ±100	–25.0	233–647 AD	Charcoal
Markasi Lusangi 2	Beta–176188	1030 ±40	–23.9	991–1152 AD	Charcoal
Markasi Lusangi 2	Beta–176193	760 ± 60	–25.0	1213–1392 AD	Charcoal
Kirumi	Gz–3682	740 ±150		1017–1480 AD	Charcoal
Haubi 8	GrA–16456	650 ± 60		1285–1412 AD	Charcoal
Haubi HD	GrA–16451	540 ± 60		1312–1611 AD	Charcoal
Kalamba 11	GrA–16458	470 ± 60		1402–1626 AD	Charcoal
Baura 1	Beta–176184	460 ± 40	–25.7	1429–1614 AD	Charcoal
Haubi 11	GrA–15994	420 ± 30		1447–1624 AD	Charcoal
Haubi 5	GrA–14163	370 ± 40	–6.7	1463–1637 AD	Charcoal
Mwisanga 7	GrA–16002	340 ± 30		1497–1648 AD	Charcoal
Haubi 18	GrA–15995	300 ± 35		1502–1797 AD	Charcoal
Mwisanga 5	GrA–16461	270 ± 60		1496–1953 AD	Charcoal
Mwisanga 3	GrA–16459	250 ± 60		1506–1953 AD	Charcoal
Haubi 14	GrA–19250	175 ± 45		1669–1953 AD	Charcoal
Talambo 2	GrA–15997	160 ± 30		1674–1954 AD	Charcoal
Baura 3	Beta–176191	140 ± 50	–24.8	1672–1954 AD	Charcoal
Lusangi 1	Beta–176187	140 ± 40	–25.3	1674–1954 AD	Charcoal
Haubi 41	Pta–8202	130 ± 60	–23.3	1671–1954 AD	Charcoal
Baura 2	Beta–176192	120 ± 50	–25.0	1674–1954 AD	Charcoal
Mwisanga H	GrA–16004	90 ± 30		19th century	Charcoal
Ausia 1	Pta–8199	80 ± 50		19th century	Charcoal
Haubi 4b	Pta–8028	30 ± 60		19th century	Charcoal

According to Lane (2009:472), sites dated after AD 1800 occurs in middle slopes and flat areas. Both Kessy (2005) and Lane (2009) agree that the earliest farming sites are situated on the higher slopes and more recent sites are on flat areas. Lane also suggested that the remains of iron smelting activities are dated to the last few hundred years only.

The most recent archaeological research in Kondoa District was conducted in October 2000 and September 2001 by Emmanuel Kessy and students from the University of Dar es Salaam in Tanzania, including myself. The students were involved in order to gain field experience and to learn how to conduct archaeological field research. Kessy conducted his PhD research at the village of Baura and Pahi. His project aimed to understand the relationship between Late Stone Age and Iron Age groups.

To answer his research objectives, he surveyed and excavated on hill slopes near rock paintings and in flat areas (Kessy 2005). He did shovel test pits (STPs) and then excavations where the pits proved productive. Both produced LSA and IA remains. The findings from the STPs and excavations include: lithic artefacts, pottery, fauna and iron working remains. The lithic assemblages recorded from Baura and Pahi sites include scrapers, points, backed pieces, burins, hammer stones, cores and *outlis écaillés*. At Pahi shelter number 44, archaeological materials were found alongside white and red clay. Kessy (2005: 418; see also Leakey 1983) suggested that the clay was used for making the rock paintings. The raw material used for manufacturing stone artefacts, which were also found, was mainly quartz. A few pieces of chert and four pieces of obsidian were collected from both areas. According to Masao (1979), Mturi (1998) and Kessy (2005:404) chert and obsidian are not found in central Tanzania and were probably brought to the region through trade and exchange. The nearest places to Kondoa where chert and obsidian artefacts are found are Lake Eyasi and Ngorongoro in the northern part of Tanzania (Mehlman 1989; Mabulla 1996). Mehlman suggested that these materials were probably imported from Lake Naivasha or Njoro Gorge in Kenya. These parts of Kenya had been using obsidian as far back as 100000 years ago (Mehlman 1989:197; Marean 1992). This would suggest quite a long exchange network existed in the LSA, linking Kondoa with areas to the far north.

The LSA lithic material from Lusangi and Baura was dated to less than 1000 BP except for that at Baura 1, which was dated to 2500 $\pm$ 40 BP and Markaz-Lusangi 2 dated to 4510 $\pm$70 (**Table 4, Page 36**). These dates fall within the typical central Tanzanian LSA time sequences (Inskeep 1962; Masao 1979). The Markaz-Lusangi 2 date was found near the shelter with rock paintings (PAH 44).

In the upper layers of the LSA artefacts, Kessy recorded Iron Age materials such as tuyere, slag and furnace walls, plus pottery mixed together with Late Stone Age tools. The discovery of these iron smelting remains in some rock shelters and open air sites indicates that the sites were probably used for forging iron and for tool manufacture (Kessy 2005). In southwest Tanzania, Mapunda (2003) showed that iron working remains, such as slag and tuyere, may have been used by Bantu language-speakers in ritual activities. Kessy, however, associated these iron remains with forging rather than ritual activities.

Kessy also examined his pottery using vessel type and decoration technique. He realised that all of the pottery from his survey and excavations fell within the Later Iron Age sequence. The pottery was characterised by vessels with jar and hemispherical bowls forms, short necked, rounded lip rim and few thickened rims. The decorations included single impression, incision and comb stamping. One potsherd collected from a Baura surface collection showed a bevelled rim similar to EIA pottery, but because it was the only piece Kessy decided to omit it from his analysis.

At Pahi-Lusangi 1, pottery was dated to AD 1660 $\pm$ 100 a typical date for the Later Iron Age in this area. A date of around 1030 BP at Pahi site Lusangi 2 has been associated with iron working activities (Kessy 2005: 354; see also Phillipson 1976, Huffman 2007; Vansina 1990, 1995). According to Kessy (2005), Pahi and Baura pottery are similar to those found at Haubi, Mnenia and Kandaga (Liesegang 1975), Kandaga A9 (Masao 1979) and Engaruka (Sassoon 1967).

Faunal remains were also recorded in LSA/IA context excavations. These included the remains of chicken, cow, hyrax, giraffe, monkey, bovid and warthog. The chicken was associated with ash, and Kessy thought it was brought to the site for sacrificial purposes (2005:345). In some areas scholars have reported chickens (Kessy 2005) being used as sacrificial animals during the iron forging processes to ensure success. This might also be the case in Kondoa.

The appearance of wild animal remains in Kessy's findings indicates that wild animals survived around Kondoa throughout the late Iron Age. A few domesticated bones, such as cattle, were identified at Pahi sites such as Markasi-Lusangi 2. Kessy (2005:248) specifically associates cow remains with early farmers who practiced IA industry around AD 1010 while chicken remains are dated to AD 1220.

Kessy's findings showed a mixture of LSA and IA, particularly in the upper layers of assemblages. Scholars have different opinions about the reason behind the appearance of LSA and IA materials together. For instance, Miller (1969) has suggested that the LSA people adopted IA technology from IA people. Working in Zambia however, Phillipson (1976) and Musonda (1987) instead suggest that the technologies of LSA and IA were practised by two different cultures. They suggest that the mixture of LSA and IA artefacts is a result of exchange and cross

occupation of the sites by both hunter-gatherer and agriculturalist communities at different times (Phillipson 1976; Musonda 1987). Masao (1979) suggests that in Kondoa, the mixture is a result of contact and trade between two cultural traditions. Masao's argument was drawn from the strong relationship observed between hunter-gatherers (Wasandawe) and Bantu language-speakers (Warangi, Waisanzu, Wanyanturu) in Kondoa and Iramba districts in central Tanzania.

Kessy concluded from his detailed analysis of the mixture of LSA and IA at many sites that the people of Pahi who are now Bantu language-speakers 'developed autonomously from LSA ancestors while adopting pottery, iron-working and farming through interaction and diffusion with neighbouring Bantu' (2005:455). Which neighbouring Bantu language-speaker group they interacted with was not specified. I will further discuss this complexity in Chapter 2 when I consider the people of Kondoa and their distribution. It is too early at this point, to support or reject Kessy's conclusion without first considering other evidence from linguistic and genetics.

Table 4: A list of radiocarbon dates from Pahi (Lusangi, Markazi) and Baura sites (Kessy 2005: 543)

Sample No.	Site, Unit and level (Depth)	Association Findings	$\delta^{13}C$	Conventional Radiocarbon Age
Beta 176185 (AMS)	Baura 1, unit 1, level 5 (85cm)	Lithic	–11.3 0/00	2500 ± 40 BP
Beta 176184 (AMS)	Baura 2, unit 2, level 3 (39cm)	Lithic, daub	–25.7 0/00	460 ± 40 BP
Beta 176192 (Radiometric)	Baura 2, unit 1, level 5 (50cm)	Lithic, slag, tuyere	–25.0* 0/00	120 ± 50* BP
Beta 176191 (AMS)	Baura 3, unit 1, leve1 (10cm)	Lithic, pottery, slag, tuyere, bone, land snail shell	–24.8 0/00	140 ± 50 BP
Beta 176186 (Radiometric)	Lusangi1, unit 1, level 2 (27cm)	Lithic, pottery, white chalk	–25.0*0/00	1660 ± 100* BP
Beta 176187 (AMS)	Lusangi 1 unit 2, level 5 (97)	Lithic, pottery, ostrich eggshell	–25.3 0/00	140 ± 40 BP
Beta 176188 (AMS)	Markasi-Lusangi2, unit 2, level 4 (70cm)	Lithic, pottery, slag, bone, daub	–23.9 0/00	1030 ± 40 BP
Beta 176190 (Radiometric)	Markasi-Lusangi 2, unit 3, level 2 (97cm)	Lithic, pottery, slag, iron, tuyere, bone, land snail, red ochre burnt clay	–25.0*0/00	4510 ±70* BP
Beta 176193 (Radiometric)	Markasi-Lusangi 2, unit 4, level 2 (32cm)	Lithic, slag, tuyere, bone	–25.0*0/00	760± 60* BP

If a ratio of an age are accompanied by an (*), then the C14/C12 value was estimated, based on values typical of the material type (Kessy 2005:543).

To sum up, there is ample archaeological evidence of LSA people occupying central Tanzania at least from 40,000 years ago practising lithic technologies. The work of Inskeep (1962), Masao (1979), Kessy (2005) and Lane (2009) has proved the occupation of the area by LSA groups throughout the Holocene era. LSA lithic assemblages in Kondoa have been recovered, mostly from rock shelters and more rarely from open air sites (Inskeep 1962; Masao 1979; Kessy 2005; Lane 2009) and these share similarities to broader East African LSA industries (Leakey 1931, 1936; Mehlman1979, 1989; Marean 1992). Hunter-gatherers in the area lived nomadic and semi nomadic ways of life, allowing them to make microlithic tools and to use them for hunting wild animals and collecting fruits.

IA material such a pottery and iron objects have also been recorded on Kondoa's archaeological sites. Pottery motifs differ between EIA and LIA sites (Sutton 1968a; Liesegang 1975; Masao 1979; Kessy 2005; Lane 2009), which are all found in the area. The majority of pottery belongs to LIA settlements and very few to the early farmer period. Enough research has been done to show that the small number of EIA ceramic findings discovered is evidence of a low population density during the early farming settlement period. A larger scale of farmer settlements occupied Kondoa in the Late Iron Age.

Faunal remains, of both wild and domesticated animals, have also been identified in LSA and IA assemblages. Researchers note that LSA people used wild animals as their source of food whilst IA communities also used domestic animals (Masao 1979; Kessy 2005). Only two groups - hunter-gatherers and farming communities - have been identified as occupants of Kondoa. The hunter-gatherers were taken as the earlier inhabitants and they later interacted with farming communities (Masao 1979). Kessy, however, has a different opinion; he believes that the early farming communities in Kondoa originated from hunter-gatherers and took up farming through interaction (2005).

Archaeological work in Kondoa has revealed the presence of grinding stones, pottery and the remains of domesticated animals such as cows (Inskeep 1962; Sutton 1968a; Masao 1979; Kessy 2005). In other areas, the remains of domesticated animals with pottery, stone bowls and grinding stones have been grouped under Pastoral Neolithic (Leakey 1931; Bower 1973; Bower

1991; Collett& Robertshaw 1983:58; Robertshaw 1988; Marshall 1990; Karega Mũnene1996; Mturi 1998). Some lithics from Kisese II share similar features to those from Mumba and Nasera that have been assigned to the PN. The distance from Kondoa to these other two sites is short, only about 150km. It therefore would have allowed PN groups to visit the Kondoa area for reasons including trade and settlement. I argue that the remains of domestic animals in Kondoa archaeological sites could also represent the presence of pastoral communities similar to those found at the Mumba and Nasera sites (Mehlman 1979, 1989).

The lack of diagnostic PN assemblages in the area might either be caused by limited of archaeological research compared to that in northern Tanzania or it could be a product of scholars not looking for PN remains in Kondoa. Certainly, pastoralist groups have been a feature of the Kondoa landscape in historical times (Bagshawe 1923). I hypothesise, from an archaeological perspective, that the tapestry of identities in Kondoa is the outcome of historical interactions between hunter-gatherers, Pastoral Neolithic and Iron Age groups. Therefore, I will now examine each of these identities in turn, referring to archaeological, linguistic and genetic evidence from across the East African region, to determine the settlement history of each of these groups in and around Kondoa. Some or all of these groups were responsible for the execution of the Kondoa rock paintings. This is what this thesis is trying to assess.

CHAPTER TWO

Lifestyle and Settlement Distribution of the People of Kondoa

Introduction

> 'Although paintings have been known in Tanzania since the first German occupation of Tanganyika, all efforts to link them up with any of the local tribesmen have failed. All those questioned claimed ignorance of the meaning of the paintings and had no interest whatsoever in them. It is fairly safe therefore to state that these paintings must have been done by people of an ethnic group that has long since disappeared from this region of Africa' (Cooke 1969: 10).

Cooke consigns the rock paintings of Kondoa to ancient antiquity. Archaeological evidence (Chapter 1) supports Cooke's idea of changeovers in populations by showing that the early inhabitants of East Africa, including Kondoa were hunter-gatherers who later adopted ceramics, caprines and cattle (Marean 1992). They acquired these commodities through trade and exchange with immigrant pastoralist groups. The hunter-gatherers traded wild products such as honey, skins and bush meat with pastoral groups and then later with farmer groups (Lane 2004:245). The trade allowed interaction and continuity of material culture from the Late Stone Age into the Pastoral Neolithic and Iron Ages in East Africa (Chapter 1). Taking together the various archaeological assemblages in East Africa we can see three different social economies existing, often at the same time, namely, hunting and gathering, pastoralism, and farming (Lane 2004). The same pattern is found in the Kondoa area (Inskeep 1962; Masao 1979; Leakey 1983; Kessy 2005; Lane 2009). These three economies, while interacting and exchanging traits, were each tied to specific ethnic groups. In this chapter I will use archaeological, linguistic and genetic evidence to identify these groups and to try to trace their origins in Kondoa, starting from the earliest and moving progressively to the most recent groups. Then I will discuss their distributions around the Kondoa area. The purpose of this chapter is to understand the sequence of settlement in the Kondoa area. This is essential before we can start to explore the possible authorship of the Kondoa rock paintings.

Hunter-gatherers

All scholars who have written about the ethnic groups in East Africa agree that hunter-gatherer communities were the first inhabitants of the land (Bagshawe 1924, 1925; Cole 1954; Fosbrooke 1956; Clark 1959; Hiernaux 1975; Phillipson 1977, 1985; Lim 1992:82). In Kondoa District, ancestors of the Wasandawe and the Hadzabe are considered remnants of these early occupants (Dempwolff 1916; Bagshawe 1925; Bleek 1931a, b; Trevor 1947**;** Greenberg 1950; Westphal 1971; Hiernaux 1975; Schepartz 1988; Morris 2002, 2003). They speak click languages somewhat similar to Khoi-San (Dempwolff 1916; Greenberg 1963; Honken 1977). This has led to the idea that the two groups might be culturally related to the Khoi-San of southern Africa (Lewis-Williams 1986:115–6). Several early researchers (Bagshawe 1924; Bleek 1931a, b; Trevor 1947) undertook studies among the Wasandawe and Hadzabe to explore whether these groups should be considered as 'Khoi-San'.

Greenberg (1966) using linguistic classification, classified Wasandawe and Hadzabe within the Khoi-San language family. This conclusion was supported by Honken (1977). The work of Greenberg and Honken, however, has been criticised by Newman (1970, 1976, 1978, 1980, 1992), working with the Wasandawe and by Woodburn (1962, 1970, 1982) working the Hadzabe. The work of Westphal (1971) and Güldemann & Vossen (2000) all state that the presence of clicks in the Wasandawe and Hadzabe languages cannot alone justify their inclusion into the Khoi-San family. The Wasandawe and the Hadzabe languages seem to have an independent origin which requires more linguistic research (Schepartz 1988; Ehret 1998; Sands 1998). Most scholars today consider the Hadzabe language to be unrelated to other click languages (e.g. Kagaya 1990, 1993; Sand 1998).

Phillip Tobias (1965) had a different opinion on the origins of these clicks speakers. Using archaeological and ecological evidence from South Africa, he suggested that click speakers initially lived in southern Africa and then spread to East Africa and then probably to North Africa. Likewise, Mary Leakey studied the Kondoa rock paintings and made comparisons with South African art. She noted both differences and similarities. Motifs in both regions illustrate the universal characteristics of hunting and gathering behaviour. But, the individual style of depiction and the symbolism appears different (Leakey 1983:115). From this comparison,

Leakey argued that the common hunting and gathering life style cannot be taken as support that the Hadzabe/Wasandawe migrated from southern Africa (*ibid*; 115 see also Lewis-Williams 1986). Indeed, the rock paintings of central Tanzania are immediately distinctive in their style from southern African rock art (Lewis-Williams 1981; Leakey 1983:115). Today, most scholars emphasise separation rather than similarity between the so-called Khoi-San speaking peoples in southern and eastern Africa.

An additional archaeological similarity that has been used to link Khoi-San speaking peoples in southern Africa to East Africa is Wilton lithic materials (Leakey 1931, 1936; O'Brien 1939; Clark 1942, 1950; Inskeep 1962; Masao 1979). Wilton LSA hunter-gatherer materials found in southern Africa have been associated with Khoi-San communities (Goodwin & Van Riet Lowe 1929). The term 'Wilton' was also adopted and applied in East Africa to describe Late Stone Age finds such as thumb-nail scrapers and ostrich eggshell beads (Leakey 1936). While in southern Africa the makers of Wilton materials were the Khoi-San, in Kondoa the ancestors of the Hadzabe/Wasandawe have been proposed as the makers of Wilton (Masao 1979; 1991b, 2007). The common name 'Wilton' was based on the assumption that the two click-speaking groups were linked. Yet, Nelson (1973) and Ambrose (1982) have both argued that the East African Wilton assemblages should not be linked with the southern African Wilton due to geographical and raw material differences between the two regions.

Work by Deacon (1984), Deacon & Deacon (1999) and Wadley (2000, 2001) has also downplayed the similarities and emphasized differences. It has also been shown that the available radiocarbon dates do not support the hypothesis that the Wilton culture spread from southern Africa to East Africa. Instead, they argue that East and southern African LSA traditions should be separated and that the classic Wilton form is found only in southern Africa, particularly in Zimbabwe, Botswana, Namibia and South Africa (Deacon 1984). This indicates different hunting-gatherer cultural traditions in the later Pleistocene of eastern Africa and southern Africa. Parallel to linguistic evidence, archaeological findings therefore also do not support the model of the migration of Khoi-San groups from southern Africa to East Africa.

Genetic research on hunter-gatherers in East Africa has been carried out by Alec Knight and other colleagues from Stanford University. Their work aimed at finding out the genetic

relationship between click-speakers in East Africa and southern Africa. They examined the mitochondrial DNA (mtDNA) and Y-chromosomes of the Hadzabe ethnic group. The results (Knight *et al.* 2003) suggest that the Hadzabe are genetically different from Khoi-San and closer to Pygmy groups. Genetically, the Hadzabe are closer to Wasandawe than other neighbouring farmers and pastoralists. Knight and colleagues' findings indicate that the Hadzabe split from the Khoi-San more than 40000 years ago (2003: 470), one of the first genetic splits in the human race. This evidence suggests no genetic contact between the groups since this split.

Comparable to this finding, research work was also conducted among Cushitic, Nilotic and Bantu language-speakers. The research team comprised various universities such as the University of Maryland, Stanford University, Muhimbili University College of Health Science, Dar es Salaam and the National Centre for Biological Sciences, Bangalore, India. Y-Chromosome and mtDNA samples were taken from Ju/'hoan, !Xun and Khwe click-speakers in southern Africa; Hadzabe and Wasandawe (click speakers), Waburunge (Cushitic-speakers), Mang'ati/Tatoga/Datoga) (Nilotic-speaker), and Nyanturu and Sukuma (Bantu language-speakers) who live near the Hadzabe and Wasandawe in East Africa. The Tanzanian samples were collected from north-central Tanzania, particularly Kondoa and Karatu Districts. The !Xun and Khwe sample was collected in the northwest Cape region of South Africa. The results indicated low frequencies of mtDNA in Wasandawe coming from the southern Waburunge population and none from the Hadzabe. The Hadzabe and Tatoga share several L4g haplotypes; the Wasandawe, Nyanturu and Waburunge also share L4g haplotypes (Tishkoff *et al.* 2007).

Both Hadzabe and Wasandawe have a high frequency of the mtDNA that is common in East African populations (Tishkoff *et al.* 2007:186). The findings also show little sharing of mtDNA between Hadzabe and Wasandawe, suggesting limited recent gene flow between them. It was interpreted to mean that the Hadzabe and Wasandawe split at least 23000 years ago (Tishkoff *et al.* 2007:187). The mtDNA also shows very limited overlap with the Ju/'hoan. The Wasandawe and southern African Khoi-San language speakers do not share mtDNA haplotypes indicating no recent genetic exchange. The mtDNA did not show any evidence of Khoi-San migrations from southern to eastern Africa (Tishkoff *et al.* 2007). A slightly younger initial divergence between Wasandawe and southern African Khoi-San occurred between 44000–55000 years ago, while the

Hadzabe diverged from the Khoi-San 56000 years ago *(ibid*:2187*).* Y-Chromosome examination has also shown similar results with that of mtDNA**.**

While genetic evidence points against migration**,** scholars such as Stokes and colleagues (1997), Lahr & Foley (1998) and Mitchell (2002) have argued that a dry period occurred in southern Africa around 17000–24000 years ago and may have contributed to some of the area's click-speakers moving North to East African. But, in my view, at present, the archaeological and genetic evidence points against this.

The impact of migration and contact between click-speakers in central Tanzania and neighbouring ethnic groups was noted in Tishkoff and colleagues' study (2007). For instance, the Wasandawe shared mtDNA with Waburunge and the Hadzabe shared mtDNA with Sukuma Bantu language-speakers and the Tatoga. The Wasandawe also shared mtDNA with Wanyanturu Bantu language-speakers and Waburunge (Cushitic speakers). Parallels to the mtDNA results are also found in the Y-chromosome results (Tishkoff *et al.* 2007). This is evidence of recent intermarriage between these groups.

Genetic evidence supports the linguistic and archaeological evidence, and does not support migration from southern Africa. But, it also showed that click-speakers have been interacting with neighbouring groups such as pastoralists and farmers in Central Tanzania for many centuries. Therefore, I follow Alan Morris' (2003:89) conclusion that the "linguistic connections between the East Africa Khoi-San and the South African Khoi-San languages are not rejected, but the presence of clicks in these languages must not be considered proof of the biological unity of the people who speak the languages". There is a growing consensus among researchers that the origins of the East African click-speakers are local.

The Hadzabe and Wasandawe, judging by genetics, are amongst the oldest surviving communities in East Africa. Today the Hadzabe still practise hunting and gathering (Bagshawe 1925; Woodburn 1962, 1970; Ndagala & Waane 1982; Marlowe 2002, Mabulla 2007) but their lives are starting to change radically (pers. obs. 2003). Most Wasandawe have abandoned hunting and gathering for a settled farming life (pers. obs. 2010; see also Ten Raa 1968, 1970; Masao 1979, 2007; Lim 1992, 1994).

The Pastoralists

The original hunter-gatherers were first intruded upon by pastoral groups with knowledge of the domestication of animals such as cattle, goat/sheep and the cultivation of indigenous grains such as sorghum and millet (Sutton 1968b: 47; Smith 1992). It is not clear exactly where these groups came from originally, but scholars such as Sutton (1968b), Ehret (1968, 1974, 1976, 1998, 2000, 2003), and Ambrose (1982) have traced their immediate origins to parts of Sudan and Ethiopia. They moved southward into East Africa. From here, the exact timing of their arrival varies according to area. The southwards movement of pastoralists groups was associated with a severe dry period (Phillipson 1977; Ambrose 1984; Gautier 1987, 2002; Marshall 1990).

The roots of the pastoralist societies in East Africa probably extend back to the Sahara, Nile valley and the Horn of Africa. Sudan and the Ethiopian highlands was the centre of occupation before the southwards migration into East Africa. Linguistic evidence has been used to supplement the archaeological information (Ambrose 1982; Ehret 1974, 1976, 1998, 2000; Phillipson 1977, 1985). The linguistic evidence divided the pastoral communities that entered East Africa into two main groups: Cushitic-speakers and Nilotic-speakers (Ambrose 1984, 1998, Ehret 1968, 1974; Bower 1973; 1991; Gautier 1987; Smith 1992). I will consider each in turn.

Cushitic-speakers

The Cushitic-speakers were the first pastoralist group to reach East Africa from Sudan and Ethiopia (Sutton 1966:47; Ehret 1968, 1974, 1976; Ambrose 1998). Christopher Ehret (2003) believes their origins to be in northeast Africa, in the Red Sea region. There is, however, no direct evidence connecting the East Africa and Red Sea region. Ethiopia and Sudan provide more evidence of livestock keeping and ceramic ware similar to that of the early migrants into East Africa (Bower 1991:12). Near Khartoum, there is been evidence of the domestication of cattle dating back to 6,500 BP (Gautier 1987). This has made scholars believe that the domestication of animals began in Sudan and then spread to East Africa. Ambrose (1982) divided the early pastoralists into two groups: southern and eastern Cushitic.

Southern Cushitic-speakers

The southern Cushitics were an early pastoralist group who entered into the highlands of Kenya and northern Tanzania with knowledge of cattle keeping and agriculture (Ehret 1974; Phillipson 2005:211). The groups are linked archaeologically to the 'stone bowl culture' (Sutton 1966; Odner 1972; Ambrose 1984) and to the makers of the Narosura, Maringishu and Akira ware pottery (Bower 1991). Archaeological and linguistic evidence places their origins in the southern Ethiopian highlands (Ambrose 1982:113). They first settled in northern Kenya around Lake Turkana and interacted with hunter-gatherer communities in that area who were already complex harpoon-using fishermen and makers of Kansyore ceramic ware. The date is placed around 4,000 BP (Ehret 1974, 1998:10; Barthelme 1985:7; Ambrose 1982:113).

Archaeological evidence of southern Cushites in East Africa was recorded at several sites in the Central Rift Valley of Kenya, and particularly at Enkapune Ya Muto (Marshall & Hildebrand 2002; Lane 2004). A later phase of Cushitic sites, with evidence of the domestication of animals, is found in central, western, and southern Kenya dating around 3,400–3,000 BP (Ambrose 1998:380; Lane *et al.* 2007:62; Prendergast *et al*. 2007:220). This phase according to Ambrose (1982:119) should be called "Lowland Savannah Pastoral Neolithic" and is characterised by domestic animals, stone bowls, Nderit pottery ware and traded obsidian (Bower 1991: 65).

Archaeological and linguistic evidence show the movement of southern Cushites into parts of northern Tanzania, particularly the Lake Eyasi and Serengeti area (Bower 1973, 1991; Ambrose 1982; Mehlman 1979, 1989; Smith 1992; Lane 2004:248). Dates from the Seronera site put the arrival of the early Pastoral Neolithic in the area to around 3000 BP (Bower 1973). The southern Cushitic-speakers have been linked to the manufacturing of Narosura ware in northern Tanzania (Bower 1991:20). The highland savannah PN in Kenya is also characterised by cairn burials (Leakey 1931; Leakey 1945; Sutton 1973). These burials are associated with a few large obsidian blades, stone bowls, pestles and grinding stone. Similar cairns are found in northern Tanzania, dating to the Narosura ware period. A date of 2000 BP has been recorded on cairns in Ngorongoro Crater, Tanzania (Sassoon 1968).

The southern Cushitic speaking community living in Kenya today is represented by the Dahalo while, in Tanzania, it includes ethnic groups such as the Asa, Aramanik, Iraqw, Waburunge, Alagwa/Waasi and Gorowa/Wafyomi (Ambrose 1982:113). These groups are found in the north-central region of the country. The Waburunge, Alagwa/Waasi and/Wagorowa/Wafyomi groups inhabit parts of Kondoa District.

Eastern Cushitic-speakers

The Eastern Cushites migrated from the southern Ethiopian highlands into northern Uganda and eastern Kenya. They later moved to Mount Kenya and then reached the Indian Ocean coast. The Yaaku hunters, who live on the northern slopes of Mount Kenya, are a modern offshoot. This group also comprises the Arbore and Dasanech pastoralists and cultivators. The Elmolo fishermen of the Lake Turkana region are also Eastern Cushitic. It is estimated that they occupied the area around 2000–3000 years ago (Ambrose 1982:113). In the Turkana basin, the Eastern Cushitic-speakers displaced the Southern Cushites who controlled the area before they arrived (Ehret 1968; Ambrose 1982:11). There is no evidence that Eastern Cushitic groups moved as far south as Tanzania. They are not therefore considered further in this thesis.

Nilotic

After 3500 BP there was a movement of Nilotic communities from southern Sudan to East Africa. According to Ehret (2003: 170), Nilotic-speakers appeared firstly between the Blue and the White Nile Rivers around 5000 BP. They then moved out and occupied Cushitic lands and absorbed some Cushitic groups. Around 3500 BP they moved further south within Sudan to the border of Uganda and Ethiopia. They split into three groups: Southern, Eastern and Western Nilotic-speakers (Ambrose 1982; Ehret 2003). The three groups moved through Kenya and Uganda before reaching Tanzania. At the time that the Nilotic-speakers moved from their home-land, they had already taken on the domestication of animals such as cattle, goats and sheep. They also cultivated indigenous African crops such as sorghum and finger millet and used iron technology (Ambrose 1982:114; Robertshaw & Collett 1983; Ehret 1998). Examples of Nilotic speaker sites in East Africa include Deloraine Farm, West of Lake Naivasha in Kenya, dated to around 1200–1100 BP (Collett & Robertshaw 1983:71; Sutton 1973:113; Lane 2004: 250) and

Enkapune Ya Muto in Kenya dated to 1,300 BP (Ambrose 1998). Some of these sites provided the first evidence of iron objects.

Southern Nilotic-speakers

The Southern Nilotic-speakers, from their origins in Sudan, reached the Lake Victoria Basin earlier than 2000 years ago and before the arrival of Bantu language-speakers (Ambrose 1982:114). They moved from their nuclear area in the Uganda/Sudan/Ethiopia border through eastern Uganda and the western highlands of Kenya. They moved further south to Mount Hanang and into the Lake Eyasi area in northern Tanzania (Ambrose 1982:114). Southern Nilotic speakers absorbed the Southern Cushitic communities in western Kenya, the Rift Valley and northern Tanzania. Nilotic-speakers are now the dominant pastoralists in northern Tanzania. Some areas are still occupied by Southern Cushitic people, particularly the Pare Mountains in northern Tanzania, where the Asa and Aramanik still live today (Ambrose 1982:114).

The Southern-Nilotic speakers in East Africa are represented by the Tatoga/Barabaig/ Datoga/Mang'ati in central and north Tanzania. Other groups include Kalenjin-speakers such as the Kipsigis, Nandi, Tugen, Marakwet, Keiyo Pokot and Sabaot who live on the slopes of Mount Elgon along the Kenya-Uganda border (Ambrose 1982:114). In Kondoa District the Southern Nilotes are represented by the Tatoga/Datoga/Barabaig/Mang'ati.

Eastern Nilotic-speakers

Linguistic evidence suggests that the Eastern Nilotic population lived east of the Nile before 3,000 BP (Vossen 1982:470). They moved further east to the border of Uganda and Sudan before arriving in central Kenya and northern Tanzania. The first movement from their homeland occurred around AD 1000 (Ambrose 1982: 115–6). The movement involved the shifting of Teso-Turkana people from the Ongamo and Maa language cluster south into Kenya and northern Tanzania (*ibid*: 116). It is believed that the language of Ongamo and Maa split in the highlands between the Nyandarua Mountains of Kenya and Mount Kilimanjaro around AD 1500 (Vossen 1982; Ambrose 1982:115). Modern Maa-speakers such as the Maasai and Samburu in the Rift Valley and Lake Turkana in Kenya represent modern-day Eastern Nilotic Speakers.

In northern Tanzania, Eastern Nilotic-speakers occupy the eastern hills of Pare. Around Mount Kilimanjaro, there are Ongamo people also practice a mixed agriculture and pastoralist economy. The majority of them have been absorbed by the Chagga, a Bantu language-speaking group (Ambrose 1982:116). The Maasai people of Kondoa District are an Eastern Nilotic-speaking group.

Western Nilotic-speakers

The Western Nilotic-speakers arrived in East Africa from their origins along the Uganda and further North Sudan border between 1500–1000 BP (Ehret 2003:172) and settled first in northern Uganda. Today, Western Nilotic-speakers include the modern Luo-speakers who occupy a large area of northern Uganda, living together with Eastern Nilotes. Luo-speakers also cover a large area of western Kenya and are settled amongst Bantu language-speakers. In the western part of Tanzania, along Lake Victoria and particularly in the Mara region, there a few Luo-speakers living together with Bantu language-speakers. Linguistic evidence from Kenya, Uganda and Tanzania suggests that the Luo occupied East Africa between AD 1400 and AD 1800 (Ogot 1967:67; Ehret 2003:173). Other Western Nilotic-speaking peoples include the Acholi, Shilluk, Dinka, Nuer and Langi (Vossen 1982). None of the Western Nilotic groups reached Kondoa District and so they are not considered further in this study.

Bantu language-speaker farmers

The origins of Bantu language-speakers have been traced back to West Africa in southern Cameroon and eastern Nigeria around 5,000 years ago (Ehret 1982: 58). According to Ehret (1982:58–9) and Vansina (1995:52) Bantu-speaking farmers started to spread outward from this area around 4,000 years ago**.** They moved into the equatorial region of the Democratic Republic of Congo. It is believed that the cause of movement of this group away from their nuclear base was associated with the development of agriculture, ceramics and the working of iron (Vansina 1990; Nurse 1982). These developments permitted them to seek out new ecological areas and to exploit new resources. Initially, the Proto-Bantu language-speakers had no access to cattle, sheep and goat.They obtained these from pastoralist groups in East Africa (Phillipson 2005; Reid 2005:590).

The development of the technology needed to clear the land, combined with the fertile soils around the equatorial rain forest zone may have allowed the early farmers to increase their population rapidly (Ehret 1982; Vansina 1990). As this expanding population spread out, they split into two branches: a western and an eastern branch (Nurse 1982; Vansina 1990:49; Phillipson 2005). The western branch moved through the western tropical rainforest and ended up south of Tanzania, in the DRC, Zambia and Malawi towards the end of the first millennium AD (Vansina 1995).

The Eastern branch advanced around the top of the tropical rainforest and arrived in the Lake Victoria Basin during the 1st millennium BC. The eastern Bantu language-speakers arrived in the interlacustrine region with a developed knowledge of metallurgy and ceramic production. This group is the maker of EIA (Urewe-wares) and LIA pottery in eastern Africa (Soper 1982; Sutton 1968b). From the Lake Victoria region Bantu language-speakers expanded to north central, south and coastal Tanzania then to Malawi, Zambia and Mozambique (Ehret 1998:13; Schoenbrun 1994/95:42–3).

Early Bantu language-speakers are represented in Kondoa by Lelesu, LIA pottery and iron remains such as tuyere and slag. Today the majority of the area's Bantu language-speaker population belongs to the Warangi group. Warangi groups moved from the northern-Arusha region to central Tanzania (Kesby 1981; Bwasiri 2008) around 600 BP (Kessy 2005; Lane 2009).

History of the settlement in Kondoa

Archaeological, linguistic and genetic evidence show that Kondoa has been home to four language groups for many centuries. These include click-speaking Wasandawe and Hadzabe, Cushitic-speaking Alagwa/Waasi, Waburunge and Wafyomi/Wagorowa, Nilotic-speaking Tatoga and Maasai, and Bantu language-speaker-Warangi. Wanyanturu and Wamakua are Bantu-speakers who first inhabited Kondoa around the 1900s and will not be considered in this study. All these ethnic groups have different ways-of-life, traditions and belief systems. Each has both differences and overlaps. Still, all these groups interacted and some shared socio-economic activities. Now I turn to discuss their distribution in the Kondoa landscape.

Wasandawe

The Wasandawe communities live in the west of Kondoa District, occupying the wards of Kwamtoro, Sanzawa, Farkwa, Suruke, Ovada and Mpendo (**Figure 4; page 57**). It is not apparent when they arrived in these wards. Archaeological, linguistic and genetic evidence suggest they have 'always' been there (see the previous discussion in this chapter). It is believed that their ancestors were the makers of Late Stone Age tools. Evidence of them has been recovered from archaeological sites spread over the district (Inskeep 1962; Masao 1979; Kessy 2009; Lane 2009; see also Leakey 1983). Their ancestors' lives depended on bush products such as honey. Some of these activities cannot be seen archaeologically because organic remains generally do not survive, but faunal remains of wild animals have been used to understand aspects of LSA diet and way of life (Masao 1979). In more recent millennia, the Wasandawe interacted with other language groups such as pastoralists and farmers and traded with them through a barter system (Bagshawe 1924).

The impact of interaction between hunter-gatherers and pastoralists/farmers has been noted in archaeological findings and linguistic and genetic evidence (Inskeep 1962; Masao 1979; Ambrose 1982; Tishkoff *et al*. 2007). It has resulted in the Wasandawe adopting cattle and agricultural practices (Ten Raa 1968; Lim 1992). It is believed that the Wasandawe got cattle from early pastoralists, probably the Alagwa, Waburunge, and agriculture from Warangi and Wanyanturu farmers (Ten Raa 1968).

The appearance of Early Iron Age pottery at Lelesu in Wasandawe territory proves that the Wasandawe have long been in contact with farmers (Sutton 1968a). The mixture of LSA in LIA materials at the villages of Pahi, Kandaga and Haubi shows a strong relationship between the ancestors of the modern Wasandawe and incoming Bantu language-speakers (Inskeep 1962; Masao 1979; Kessy 2005; Lane 2009).

The current population distribution of the Wasandawe groups is a result of pressure from intruders and the availability of wild foods. The wards where the Wasandawe live today were still rich in wildlife in the early 1900s (Nash 1984), making it easier for the Wasandawe to obtain meat through hunting. A wide Wasandawe distribution is also attested to in historical sources.

For example, Bagshawe (1924), in 1916, witnessed some Wasandawe groups occupying the Bubu River (see also Nash 1984:40) and there is evidence from Ten Raa (1969a) that the original distribution of the Wasandawe groups was much more widespread. Today, the Wasandawe live with other groups such as the Wanyanturu, Warangi, Wagogo, Maasai and Tatoga (Newman 1970:26; Lim 1992; pers. obs. 2010).

The Wasandawe can be divided into sub-groups consisting of several clans scattered over the wide area of Wasandawe land. Some of these, such as Elewa and Ni/ini, no longer seem to exist today. For instance, Ten Raa (1970:131) described the Ni/ini as short people who lived in rock shelters but who have now disappeared. The Wasandawe clan known as Bisa lives in the south-east of Wasandawe land near the Bubu River. They still consider the Ni/ini part of their group (*ibid:* 132). The Bisa are described by Ten Raa as 'uncouth.' They practise a more 45 years on traditional way of life, less affected by intruders and foreign religions (1970:140).

The Tehla Wasandawe lives in the northwest of the Wasandawe area and are more affected by both immigrants and foreign religions. Ten Raa named them as 'couth' (1970:141). They grow maize, sorghum and millet and keep small numbers of cattle, gained from interactions with Southern Cushitic groups such as the Alagwa/Waasi and Waburunge people. The Tehla Wasandawe also has knowledge of rain-making, probably adopted from the Alagwa/Waasi and Waburunge people (Bagshawe 1923, 1924; Ten Raa 1968). It is clear that the Wasandawe were once a much larger group, occupying most of the Kondoa District. Given the recent clan based nature of Wasandawe society, they may always have been quite a culturally diverse group.

Hadzabe

The Hadzabe or Tindiga live approximately 150 kilometres north of the Wasandawe. The Hadzabe of today comprise small groups living at *Mang'ola, Yaeda Chini* near Lake Eyasi in Arusha region, north central Tanzania and Iramba district in Singida region. In 1916 Bagshawe noted a much wider Hadzabe distribution covering Lake Eyasi, Mbulu district, Mwanza region and Mkalama in Kondoa District (1925:11). Mkalama is situated on the border between Iramba and Kondoa. Since 2011, Mkalama is an independent district in the Singida region and a few Hadzabe still live in the area together with the pastoral Tatoga and Bantu language-speakers, Waisanzu (Bagshawe 1925; pers. obs. 2005). Ten Raa (1970) described small groups of people

of short stature who live together with the Wasandawe but who have since gone. He thought they were probably Hadzabe.

It is therefore probable that the hunter-gatherer populations of Kondoa were diverse in the past. From our current evidence it seems that Wasandawe click-speakers dominated some areas that were also inhabited by Hadzabe community. In addition, there may have been other hunter-gatherer language groups (such as Ni/ini) for whom no modern descendants survive today and therefore who are lost beyond basic ethnographic memory about them.

Waburunge

The Waburunge belong to a small group living east of Kondoa and mainly in Goima in the ward (**Figure 4, Page 57)**. Small numbers of Waburunge are found also in the wards of Chemba, Chandama, Paranga and Mrijo. In these wards the Waburunge live together with the Warangi people. Originally, the Waburunge are said to have lived at Haubi, but they were pushed out of this area about 600 BP when the Warangi arrived (Östberg 1986:30). Oral traditions indicate that from Haubi, the Waburunge moved to Baura, Pahi, Kalamba, Kilema Mnenia, and Mondo. Nowadays these places are also occupied by Warangi farmers.

In the past, Waburunge life depended on honey collection, hunting, and cattle keeping (Östberg 1986:30). Today, they cultivate maize, millet, sorghum, beans and sweet potatoes, and continue with cattle keeping and honey collection. Warangi oral traditions state that they learnt how to make rain from the Waburunge and in turn they taught the Waburunge about crop cultivation. Because of the relationship between the two groups, today, the majority of the Waburunge speak the Warangi language, 'Kirangi.'

Waasi

The Waasi also known as Alagwa is a small group of Southern Cushitic-speakers situated in the wards of Kolo, Thawi, Soera and Changaa (**Figure 4, Page 57**) They were pushed northward by the Warangi from Kolo into these wards (Östberg 1986). The Waasi/Alagwa practise both agriculture and pastoralism. They are thought to have introduced cattle and rain-making technology to the Wasandawe (Bagshawe 1924; Ehret 1968; Kimambo 1968; Ten Raa 1968).

Wafyomi

Likewise, the Wafyomi/Gorowa is a small group of Southern Cushitic-speakers situated in Kikore ward, on the border between Kondoa and Babati Districts. In 1927 Nash described them as 'civilized' compared to the Wasandawe (1984:42). They live in the same area with the Warangi and Waasi. The Wafyomi/Gorowa practise agriculture and pastoralism similar to other Southern Cushitic-speakers in Kondoa and their language is similar to that of the Waburunge. Oral traditions from Alagwa/Waasi and Waburunge confirm that they were one group before they split. The date of their split is not known. In the 1950s, Fosbrooke observed both these groups living at Kolo and sharing rituals such as rain-making and circumcision ceremonies (1958a, b). The date of the arrival of these groups into Kondoa is uncertain (Chapter 1) and they have largely been ignored in archaeological accounts. However, there is no reason to doubt their presence in the near vicinity of Kondoa since 2500 BP (Mehlman 1989).

Tatoga

The Tatoga, also known as Datoga/Mang'ati/Barabaigi, live in many parts of central and north Tanzania. In Kondoa, they live in the wards of Bumbuta, Busi, Jangalo and Kwadelo (**Figure 4, Page 57**). They live together with Warangi, Wafyomi/Gorowa and Maasai groups. The Tatoga have migrated several times within Kondoa due to conflicts with both Maasai and farmer groups over land tenure. The migrations are said to have caused great hardship, even sickness and death among the children and the cattle (Wilson 1952:44). The Tatoga live in small groups and are known for building temporary huts that allow for easier movement. Traditionally they built a *tembe* hut, roofed with mud and arched on the top. Livestock keeping is their main form of economic activity and their wealth is centred on their cattle. Linguistic evidence shows that the Tatoga arrived in northern Tanzania around 1500 years ago (Ehret 1974; Ambrose 1982).

Maasai

The Maasai, like the Tatoga, live together with the Warangi and Wasandawe at Gwandi ward. Other groups of Maasai live with the Warangi and Tatoga in the northwestern area of Kondoa District known today as the Maasai plain **(Figure 4, Page 57**). Like the Tatoga, no specific dates of their arrival in Kondoa have been recorded. Linguistic evidence shows Maasai-speakers arrived in Kilimanjaro in northern Tanzania around AD 1500, after Bantu language-speakers

(Vossen 1982; Ambrose 1982). Their exact time of arrival in Kondoa District is not clear, but it seems to be comparatively recent, perhaps as recent as 400 years ago. Oral traditions from local people agree that the Maasai have occupied Haubi, Masange, Kandaga, Itololo and Pahi for only a few centuries (Bwasiri 2008). Their daily life depends on cattle keeping, similar to the Tatoga.

Warangi

The Warangi cover large parts of Kondoa, mainly in the wards of Pahi, Haubi, Kalamba, Mnenia, Kisese, Dalai, Masange, Mondo and Kondoa town (**Figure 4, Page 57**). Other wards with Warangi presence include Paranga, Mrijo, Chemba and Chandama. In some areas the Warangi live with other ethnic groups. Oral traditions state that the Warangi first settled at Haubi (Bwasiri 2008). Archaeological evidence supports this, giving them an arrival date in the area, of around 500-600 BP (Lane 2009:473).

Lake Haubi provided them a secure source of water for agriculture and livestock, a factor that encouraged all groups to settle in the Haubi area. At Haubi, the Warangi met with the Waburunge people, fought against them and forced them to move south and east of Kondoa (Bwasiri 2008). Today, the Warangi claim they originated in Haubi and then spread to other areas of Kondoa, forming the largest ethnic group in the district (Kesby 1981; Östberg 1986; Bwasiri 2008:12).

Nowadays, the Warangi control almost all former Waburunge areas and extend far to the south, east, and north. One Waburunge elder from Paranga village, south Kondoa described how the Warangi group acquired land from them:

> ‘The Rangi got land from us. They are afraid of felling trees. So, they follow the Burunge. They cultivated where we had harvested. If you have a Rangi friend cultivating beside your land, he builds his house and says he lives here’ (Östberg 1986:30).

The Waburunge elder continued to describe their close relationship with the Warangi people:

> ‘Many Warangi came here in 1969 when there were big floods at what is known as Old Kelema. We have the best relations with the Rangi. Our children marry each other. There are no differences. It is as if we were from one father and mother. We know the Rangi language. When others are present we speak Rangi or Swahili. Outsiders will not know that we are not Rangi. It is the same in the schools. Our children know Rangi. When the Rangi came we did not plough with oxen. We only used our hands. But the Rangi brought modern agriculture (kilimo cha kisasa) and we copied them. This is how this village changed’ (Burunge elder, Paranga Village: Östberg 1986:30–1)

The expansion of the Warangi group outward from Haubi, in search of new areas for cultivation brought them into contact with other groups. At Kolo they met with Southern Cushitic Alagwa/Waasi. An Alagwa/Waasi elder from Kolo described how the Warangi conquered their land and chased them away:

> ‘We were at Kolo when the Germans arrived. Both under the Germans and the British, the Sultan at Kolo was an Alagwa. The Rangi came from places like Haubi and Bolisa. They came to ask for land to cultivate. If you cultivate beside a Rangi he will move his boundary closer and closer to you. He will build his house and say that these are my fields, this is where I live. The Alagwa do not like quarrels. They are very quiet people (*watu wataratibu*). So they moved north. Now very few Alagwa live at Kolo. You will find them at Kwadino, Isabe, Bukulu, Thawi, Berabera and other places. That is where the Alagwa now live’ (Alagwa elder interview, Kwadino village: Östberg 1986:31).

A Warangi elder continued as follows:

> ‘We Rangi are clever. We used to follow the Burunge. They always move on after they have cultivated for one year or two years. As they left we moved in and cultivated the fields they had abandoned. In this way we could get more

> land. This used to be Burunge country. The Burunge also fear the Rangi. They say that, Rangi people practice witchcraft' (Rangi elder interview, Mondo village: Östberg 1986:31).

Extensive oral traditions indicate prolonged interaction between the Warangi and Cushitic groups. It was gradual and generally peaceful (Masao 1979). The interaction between these groups resulted in the sharing of language and rituals, as was witnessed by Fosbrooke. In 1953, Fosbrooke, at Kolo, witnessed the ritual ceremony of "blessing the year" and circumcision, performed by Waasi, Waburunge and Warangi (Fosbrooke 1958a, b). The ritual was conducted by a ritual leader, *Hapaloi* (Alagwa/Waasi) and *Mwenesi* (Warangi) to ask their combined ancestral spirits to bring rain (Fosbrooke 1958b:22; Chalcraft 2004, 2005; Bwasiri 2011a, b).

In the past, the Warangi were famous for the smelting of iron objects. The Haubi and Pahi areas provided much evidence of iron smelting (Kessy 2005; Lane 2009). Traditional smelting ceased when cheaper imported iron become widely available in the colonial period.

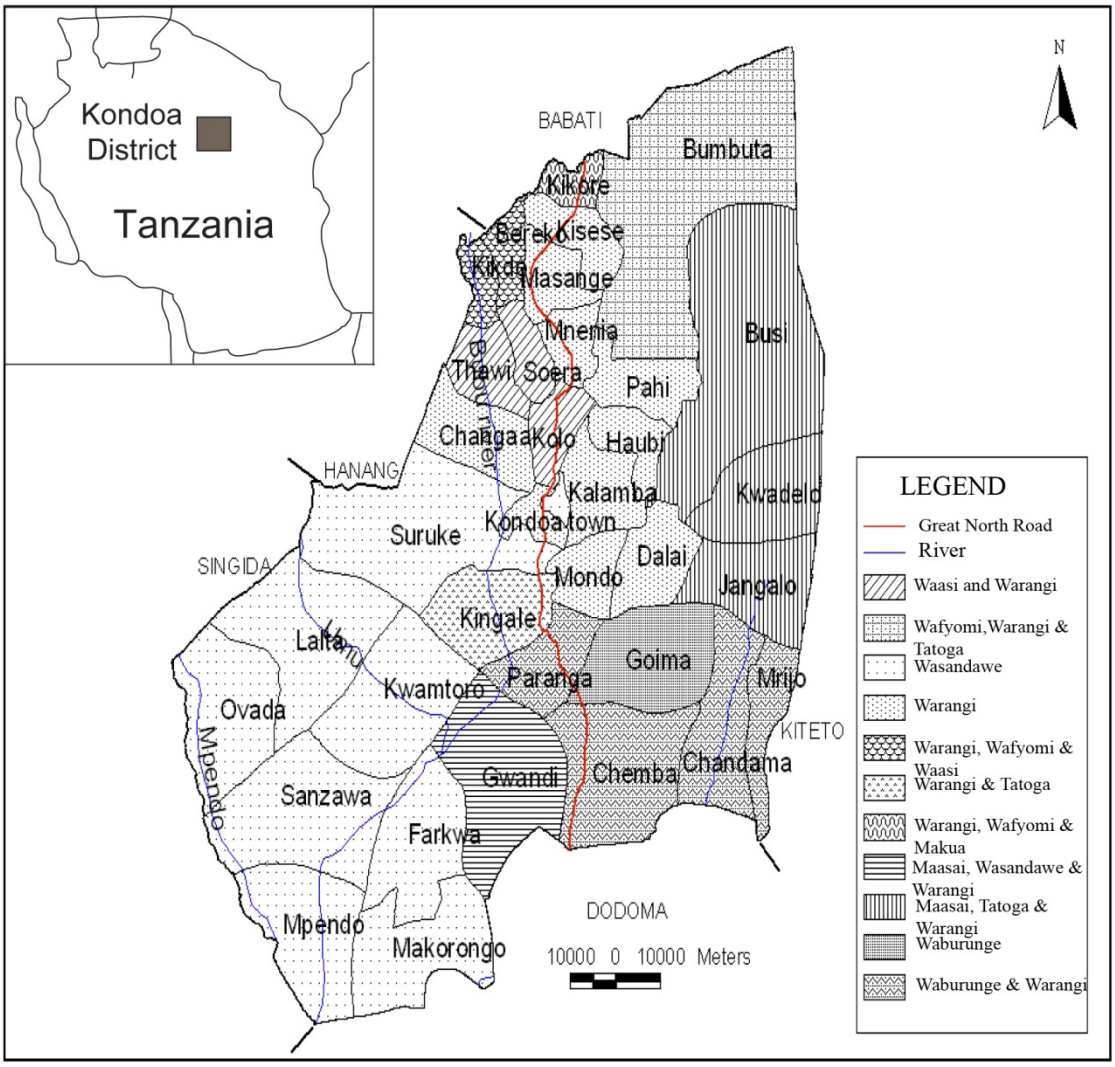


Figure 4: A map of Kondoa District showing ethnic groups distributions

The settlement distribution of the people in Kondoa is a product both of historical and natural factors. The Cushitic-speakers inhabited the area best suited for domestic animal grazing and the Warangi moved into the areas with fertile soils. When areas became overgrazed or infertile, people abandoned them; and moved on. There are extensive colonial and post-colonial records of conflicts between groups over land. For example, there are ongoing conflicts between the Maasai and the Warangi (Chapter 4). Drought, such as the great drought of 1890 (Mung'ong'o 1990), has always led to migration. Pastoral communities migrate to search for new pasture and sources of water for their cattle. Expansions of tsetse fly have also caused repeated movements (Mung'ong'o 1990). The ethnic tapestry of pre-colonial Kondoa was therefore complex, continually fluxing and one in which different people are constantly in contact.

Moreover, after Tanzania (previously Tanganyika) gained independence in 1961, the country's First President, Julius Kambarage Nyerere, introduced new land policies. The Arusha Declaration in 1967 aimed to provide social and economic equality and a spirit of self-reliance (TANU 1967). The implementation of this caused massive rural relocations where people were consolidated into new socialist communities through the Ujamaa villagisation project from 1973 to 1976 (Kürscner 1974–5; Hirts 1978; Lawi 2007). People were relocated from their original land and grouped into villages so as to ensure that social services such as healthcare, education and water could be provided by the government (Lawi 2007). The mixture of some groups in one area/village is therefore connected to the then government's Ujamaa policy**.**

There are thus seven major ethnic groups in Kondoa: Wasandawe, Tatoga, Maasai, Waburunge, Gorowa/Wafyomi, Alagwa/Waasi and Warangi. Each has its own history within Kondoa District and each has been in a particular part of the district for a particular period of time. A combination of linguistic, archaeological and oral historical evidence allows us a comparatively detailed understanding of this history of settlement and the complex movement and interactions between groups.

One, a few, or all of the seven groups could be the authors of the paintings in Kondoa. As I have noted before, the complex variability within the paintings suggests that more than one of these groups was involved in making the art. The challenge, therefore that I will address in this thesis is to define the variability in the paintings, to understand how this is situated in time and space, and then to try to tie this to the history of settlement considered in this chapter, so as to define the likely authorship of the paintings. I will therefore proceed to review our current understanding of the subject of this thesis, the Kondoa rock paintings, before proceeding to give details of my own new analysis.

CHAPTER THREE

Rock Paintings of Tanzania: An Overview

Introduction

Rock art researchers have long been interested in investigating 'the age of rock art, its cultural affiliation, the motivation for its production and its possible function' (Smith 1995: 8). All these are key topics in rock art research worldwide. In addition, today, management of rock art is also an important topic (e.g. Loubser 2001; Ndoro 2003; Chalcraft 2005; Deacon 2007; Taruvinga 2007; Ndlovu 2009; Bwasiri 2008, 2011a). This study concerns exploration of the authorship of the Kondoa rock paintings. This has been a key issue for researchers working in Kondoa for many years (e.g. Masao 1979, 2007; Anati 1986). I begin with a survey of the literature on the authorship of rock paintings in Tanzania. Whilst this review is necessarily general; my main focus will be on the rock paintings of Kondoa District. My aim is to provide a broad sense of what has been done in Tanzania to see the progress made by previous researchers towards establishing authorship.

Three terms are used in rock art studies and, to avoid confusion, I define them here. Rock paintings involve making paintings onto rock surfaces with liquid pigments. Rock engraving refers to making scratches or peckings into a rock surface while rock art is a general term referring to both engravings and paintings (Smith 1995:7). Tanzania generally lacks rock engravings. Three engraving sites have been reported: two in the Usandawe area of Kondoa District and one in Engaruka, Ngorongoro district (Fosbrooke 1950c:22).

Rock paintings, on the other hand, can be found widely distributed all over Tanzania. These sites are all in rock shelters, with no paintings found in caves in Tanzania. Rock art surveys have been limited to certain districts of the country. Survey and documentation has been undertaken widely in central Tanzania, particularly in Kondoa and Singida districts (Kohl-Larsen 1938, 1958; Odner 1971b; Masao 1979, 1991b; Leakey 1983, Anati 1986; Mahudi 2007), in the Lake Victoria region (Arundell 1936; Tanner 1953, 1957; Soper & Golden 1969; Chaplin 1974; Masao 1991a; Mabulla 2005), North Tanzania (Kohl-Larsen 1938; Masao 2007; Mahudi 2007) and in parts of the southern highlands (Whiteley 1951). From this work, it seems that Kondoa

and Singida districts have the highest concentration of rock paintings, followed by the Lake Victoria region. Audax Mabulla (pers. comm. 2007; see also Mabulla 2005:19; Masao 2007) named Kondoa, Singida, Hanang, Babati and Karatu district areas the north central rock painting zone, based on similarities in the subject matter and styles used throughout this area.

Research history of the Tanzania rock paintings

The first discovery of Tanzanian rock paintings was made in 1908 by Jan Czekanowski, a German anthropologist working at Bwanjai, Bukoba, on the western shore of Lake Victoria (Chaplin 1974). In 1936, Arundell recorded rock paintings in a similar locality. The majority of the paintings show stick-like quadruped figures depicted mostly in red and a few in black and white. He was not sure if the images depicted humans or not. Inhabitants of the area, both Bantu language-speaker and Hima, were unaware of who made the paintings. This gave Arundell the confidence to suggest that they were executed before the present inhabitants arrived (1936:114–5). While Arundell was uncertain what the red figures represented, the work of Chaplin (1974) suggested that the red figures represented cattle. Contemporary researchers agree that the red paintings at Bwanjai signify cattle (Namono 2012 pers. comm.) but who executed these images is still a subject of ongoing research. What Namono (*ibid*) suggested is cattle; Russel (2013: 19) has offered an interpretation that the Bwanjai red paintings are humans imitating cattle in dance and not paintings of cattle. It is therefore, no agreement among the researcher about the subject matter of Bwanjai red paintings.

On the southern shore of Lake Victoria, in the Mwanza region, Tanner (1953; 1957) surveyed and recorded rock paintings, mainly of geometric designs made in red. Then in 1969, Soper and Golden described additional paintings from the Mwanza region. As with Tanner, the work of Soper & Golden showed a high concentration of geometric figures. A few animals, such as cattle, and human figures, were also documented (1969:50–1). The animal figures in Mwanza are solid and differ from those found in Bukoba which are finger paintings. Soper & Golden (1969:49) thought that some of the geometric designs, such as concentric circles, might be the work of the Maasai.

The work of Chaplin in the same area started to note that the different motifs such as humans, cattle, wild animals, geometric shapes and snakes (1974:42) might reflect different styles of art.

In his work, Chaplin raised the possibility of different traditions of rock art made by different people at different times.

Fidelis Masao, former Director of the National Museum of Tanzania, commenced his rock art research work at Lukuba Island in the Mara region of the Lake Victoria basin. He recorded sites with some geometric and a few 'anthropomorphic/animal' figures (Masao 1991a: 176). The paintings were executed using thick lines and in red colour. However, Masao didn't describe the appearance of the humans and animals in his publication. It is possible that what Masao named 'anthropomorphic/animal' figures were cattle similar to those in Bukoba. Circles with rays were the most commonly depicted figures and local traditions connected these to initiation symbols of Lukuba Bantu-speakers (Masao 1991a:177) who inhabited the island 400 to 500 years ago. Masao, however, disagreed with oral tradition which linked the circular drawings to the Lukuba initiation symbol. He suggested that it was more likely that the paintings belonged to the Later Stone Age or Early Iron Age people or both (1991a:178).

Rock painting research in the Lake Victoria basin has also been conducted in the Mara region by Audax Mabulla. He spent three weeks in 2002 surveying and recording rock painting sites in five districts: Serengeti, Tarime, Musoma rural, Musoma urban and Bunda. Mabulla recorded fourteen (14) rock paintings sites, predominantly in Musoma rural district. His analysis used colour and artistic style to divide the paintings into two categories: red geometric tradition and red animal tradition (Mabulla 2005:36). The red geometric tradition includes various motifs such as uterus-like shapes, oval designs, concentric circles, lines of dots, ladders and lines. It is executed by finger painted lines in red. Mabulla associated some of the geometric figures with similar geometrics found along Lake Victoria at sites such as Nyero and Ngora shelter in Uganda, Nyankiri site in the Mwanza Gulf, Lukuba, Muleba and Bukoba districts in Tanzania. He linked the paintings to the broader geometric tradition of art spread across much of East and Central Africa (2005:36–8).

The red animal figures were portrayed in thick finger painted lines similar to the geometric designs. Common figures in this category are red humans, animals, spears, and arrows. This tradition is executed in a stylized form that is very different from the naturalistic and semi naturalistic animal paintings found in Kondoa, Singida and the Lake Eyasi basin. It is more

similar to rock paintings recorded in Zambia (Mabulla 2005:37). Mabulla concluded that both traditions in the Mara region were the work of hunter-gatherers and were probably part of the same tradition as the BaTwa rock paintings in Zambia (2005:40).

Catherine Namono has conducted the most recent rock art survey along Lake Victoria, on the Tanzanian, and more recently, Ugandian side. She came to a similar conclusion to Mabulla, that the red geometric figures along Lake Victoria belong to the BaTwa communities who were the indigenous hunter-gatherer people of the area (Namono 2010). Mabulla's and Namono's work finally clarifies Masao's (1991a) suspicion that the geometric figures found in Lukuba Island were more likely to be hunter-gatherer than farmer.

Moving on to western and central Tanzania, sites are known in Tabora particularly in Ukimbu and Unyamwezi (Shorter 1967; Collinson 1970). Between 1964 and 1967 Shorter conducted a rock art survey in the Ukimbu chiefdom. The Ukimbu chiefdom comprises Tabora region and some districts such as Manyoni in Singida and Chunya in Mbeya which border with Tabora. Shorter recorded one site at Chunya characterised by shields, circles and dots. It was painted in red and white. Local people were unaware of who made the paintings (Shorter 1967:49). A second site was characterised by human figures in black and animals in red. Again local people were ignorant about the authorship of the paintings (Shorter 1967:50). A third site, situated within Manyoni District in Singida region, had wild animals and humans painted in black pigment (Shorter 1967:50). The Manyoni animal figures are similar to those found in the Iramba area in Singida (Shorter 1967:52). And again, the local people did not know the authorship of the paintings (Shorter 1967). That means that all of the paintings in this area were probably made before the arrival of the present inhabitants of the area, who speak Bantu-languages.

In the Unyamwezi area, Collinson carried out research at the rock paintings site of Makalo. The figures recorded there were all red geometric designs such as circles and sun bursts. He associated these figures with other similar ones found in Masasi, Chunya, Bukoba, Mwanza and Tchitundo Hulo Mountain in Angola (1970:69). Collinson argued that the paintings were not the work of the local Nyamwezi Bantu language-speakers (1970:61). He noted the current *Nunguli* Nyamwezi rain ritual in the shelter was not related to the original authorship of the paintings, signifying their antiquity (*ibid*: 61).

A single rock paintings survey was conducted in the southern part of Tanzania in the early 1950s, in Masasi District, Mtwara region. Whiteley (1951) documented three rock painting sites. The paintings comprised red and white geometric forms. Naturalistic human and animal figure's in red were also found. In the oral traditions of local Bantu language-speakers Whiteley was told that the paintings were made by 'little people' who were found in the area when the farmer communities arrived but who had since disappeared (Whiteley 1951). But, who these 'little people' were was not documented.

Near Iringa town some geometric designs together with animals and human figures in red have recently been found (pers. obs. 2006). Shakila Halfan, the former site manager of Isimila Stone Age site in Iringa, also discovered some rock paintings at Kilolo District in Iringa region. The paintings share similar motifs to those found near Iringa town (pers. comm. 2006) and were probably made by the same artists. No detailed rock art research has been undertaken in Iringa region to survey and document the sites and describe the paintings. While authorship remains unsolved in the southern part of Tanzania, the geometric and animal images share strong similarities to the hunter-gatherer BaTwa paintings of Zambia and other areas (Smith 1995, 1997; Mabulla 2005; Namono 2010).

Lastly, I will consider the area in which Kondoa lies: northcentral Tanzania. I treat this area as a whole because of similarities between the majority of images painted in the region (Mabulla 2005; Masao 2007; Mahudi 2008; Bendera 2011). North-central Tanzania is an area where extensive rock art research has been carried out, from the 1920s to the present. This includes the regions of Dodoma, Singida, Manyara, Arusha and their districts. I will begin this survey by examining early research work carried out in the districts of Iramba, Karatu, Babati, Hanang and Mbulu before looking at specific studies conducted in Kondoa.

In the 1930s and 1950s, the German traveller and explorer Ludwig Kohl-Larsen and his wife Margrit surveyed the north-central Tanzania areas of Lake Eyasi (Karatu), Iramba and Usandawe (Kondoa). The two did an extensive rock art survey and recorded many red naturalist paintings of both humans and animals. They found that the geometric figures were few in this area. They

published two books in German, giving detailed descriptions of the rock art of north-central Tanzania (Kohl-Larsen & Kohl-Larsen 1938, 1958).

In 1931, Culwick recorded rock painting sites in central Tanzania, in Bahi District, Dodoma region. He described paintings drawn with lines, some clearly old while others recent. The colour of the oldest paintings was faded red and largely destroyed, making it difficult for him to recognize the images (1931a). The recent Bahi rock paintings were in white and depicted subjects such as humans, cattle, stools, a hoe, an arrow, a bird and bangles. According to Culwick (1931b:443) the human figures had horns similar to Maasai head-dresses.

Culwick reported that Bahi District was first inhabited by 'Wamia' people. The origins of the Wamia group are not known to the current Bantu language-speakers of the area, the Wagogo. Some oral traditions say that the Wamia were originally a hunter community, while other local legends say they were part of the Maasai group (1931a:40–1). Culwick recorded memories of a Wamia traditional funeral ritual sacrifice in the rock art site that involved the sacrifice of an animal and the drinking of local beer. The ceremony ended with the painting of an image of the deceased person and their property such as cattle and ornaments on the rock surface. An equivalent ritual was conducted when a traditional doctor passed away. In this case, they painted a snake on the rock. These sacrificial ceremonies made Culwick believe that the paintings were the work of the Wamia (1931b:453). The Wagogo used the shelter at Bahi for their rain-making ritual (Culwick 1931a:41–2). What makes Culwick's tantalising ethnography frustrating is that we do not know enough about the Wamia and their historic links to pastoralist or hunter-gatherer groups, although the rituals he described sound more typically pastoralist.

In 1971b, Knut Odner documented rock painting sites at Iramba in the Singida region area, where Kohl-Larsen and his wife worked. Only five sites were described in detail (1971b:164–176). These sites were dominated by naturalistic motifs of both humans and animals filled with solid red and filled with dots and just in outline. According to Odner, (1971b:164–7) these paintings are similar to those in Kondoa. Yet, he also recorded schematic and geometric paintings very different to the typical Kondoa rock paintings. Because of these similarities and differences, Odner (1971b:178) divided north-central Tanzania rock art into three groups:

Group1: ‘Realistic animals and human figures drawn in solid red. There are also a certain numbers of symbols, but these are not properly understood. Paintings of this group have often been reproduced, and further comment should be unnecessary;

Group 2: Schematic animals or crudely depicted human beings. The colours are most commonly white, but red and yellow may also occur. The art is often executed on the walls of the deep caves…; and

Group3: White and black - possibly also red-symbols including hand prints, “suns” and comb-like representations....’

In this division, group 1 seemed older than the others and so Odner connected it to the LSA and dated it to between to 8,000 BP and 2,000 BP. Some painting motifs in this group, he argued, showed arrowheads resembling those used by the Hadzabe of Iramba District. Odner recorded rock paintings of group 2 in sites containing Kansyore ware. He therefore linked the paintings with these communities and suggested a date more recent than 2,000 BP to fit in with his dates but in fact could be older for Kansyore. Group 3 paintings were scarce in Iramba and so Odner didn’t include them in his discussion (1971b:178–9).

Masao undertook five field seasons within the ten years from the mid-1990s to the mid-2000s, surveying and recording rock paintings in the Singida and Lake Eyasi region. He recorded 140 sites in the Singida region and 35 at Lake Eyasi in Arusha region (2007:15). In this work, Masao identified animal figures (42%), human figures (44%) and geometric designs (14%) (*ibid*: 22). Naturalistic paintings of both animals and human figures are the most frequently executed and there are also few geometric designs. The common colour used was red for the naturalist paintings, while white was commonly used for the geometric motifs and black was used for the wild animals (Masao 2007:23). The subject matter of the paintings in Kondoa, Singida and Lake Eyasi is almost the same. Yet, there is stylistic variation and temporal variation between motifs (e.g. Masao 28–9). The variation might imply different traditions and different authorship. Masao was uncertain about the exact authorship of specific types of paintings. Using oral traditions from local people, he connected the paintings to the Hadzabe and Wasandawe (2007:63–4) but lack of detailed information gave Masao a problem when trying to identify which painting tradition to tie to which group. Thus, authorship remained vague.

In 2007, Hiltruda Mahudi carried out research in the Matongo-Isanzu area of Iramba District in Singida region. This area had already been surveyed by other rock art researchers (Kohl-Larsen 1938, 1958; Odner 1971b; Masao 2007) but she searched for a relationship between the use of rock painting sites and socio-economic activities and cultural values (Mahudi 2007). In her work, Mahudi concluded that the rock painting sites in Iramba were used for ritual activities as well as for habitation. Habitation in rock shelter sites seemed to be temporary (Mahudi 2007:66). Mahudi's conclusions were general; she did not explain who occupied the rock shelters either for habitation or rituals. It seems that her conclusion was based on the current occupancy of the landscape and this is problematic.

Current activities in a rock shelter may not relate, in any way, to the original functions of the site. The user and the motivation may both be different. For instance, *Mongomi wa Kolo* rock shelter in Kondoa District is characterised by what Odner and others have classified as hunter-gatherer paintings (e.g. Leakey 1950; Masao 1979; Leakey 1983). But, Warangi and Waasi groups, who are not hunter-gatherers, currently use the shelter for rainmaking rituals (Leakey 1983; Antiquities Division 2004a; Chalcraft 2004, 2005; Bwasiri 2008; 2011a, b). Hence, the current use of a rock painting shelter cannot simplistically be equated with its original functions and authorship.

Ongoing (from 2007) rock painting research is being conducted in Hanang, Babati and Mbulu districts in Manyara and in the Lake Eyasi area of Arusha region by Audax Mabulla. His findings have not yet been published. The areas have a high concentration of naturalistic images of both humans and animals. In his work, Mabulla also found a shield in red that he linked to the Maasai people. He argues that the naturalistic paintings belong to hunter-gatherers (Mabulla pers. comm. 2007) without specifying which group of hunter-gatherers is responsible.

In 2008, Mabulla's student from University of Dar es Salaam, Ashura Bendera, undertook rock art field research in Babati and Hanang District. She recorded 21 sites within these two districts (Bendera 2011: 38). Bendera divided her findings into major shapes such as animals, humans, geometric designs, reptiles and insects. The animal group was made in naturalistic style in red and was dominated by giraffe followed by antelope. It is depicted by solid red outline and in brush painted fineline. Stylized human figures in red were also recorded. Red geometric motifs

such as lines and ladders were also common. Reptiles and insects were both depicted in red and white colour (Bendera 2011:61–2).

Based on colour, shape and style, Bendera divided the rock paintings into two traditions: “hunter-forager tradition and Bantu language-speaker tradition/Late White tradition” (Bendera 2011: 62). She also divided the hunter-forager style into two: hunter-forager figurative fineline and geometric tradition (see also Mabulla 2005). The figurative fineline tradition comprises red naturalistic wild animals and stylised human figures, while the geometric tradition is entirely red geometric forms (Bendera 2011: 63). It is not clear whether the two divisions represent different artists or the same artists. It could be one group with two types of paintings relating to different functions or motivation. This division is plausible, but it needs more elaboration and supportive evidence. The Bantu language-speaker tradition images were found at only two sites and consisted mainly of finger paintings made using white colour. Images included reptiles and stylised human figures (Bendera 2011:64). Bendera’s study was aimed at recording rock art sites and describing subject matter and therefore she didn’t make any detailed arguments about the specific authorship of the paintings beyond a basic (and useful) language-group ascription.

Each region in Tanzania therefore has its own rock art style and tradition, but these intersect with other regions. Starting in the Bukoba area, cattle form the dominant tradition together with a few geometric designs (Arundell 1936; Chaplin 1974). This tradition decreases along the southern shore of Lake Victoria in Mwanza and Mara regions. The authorship and age of this tradition are not yet established. Cattle in East Africa were introduced by early pastoralist groups (Bower 1973; Ambrose 1982). This allows us to guess that this painting might have been painted by a pastoralist society who occupied the area before Bantu language-speakers (Ambrose 1982). The arrival of PN ware around the southern Lake Victoria basin (Soper & Golden 1969:40–1) is dated to around 2,000 BP and based on this; I put a tentative date of 2,000–1,000 years ago for cattle tradition painting.

The Mwanza and Mara regions are dominated by a red geometric finger painted tradition. Scholars who worked in these two regions are uncertain about the authorship. The red geometric designs share similarities to what Desmond Clark (1959) named the central African schematic rock art zone. Current work by Smith (1995), Mabulla (2005) and Namono (2010) has associated

the painted images of this zone with hunter-gatherers. In Tanzania, this geometric zone is spread widely in the south (Whiteley 1951) and western-central regions (Shorter 1967; Collinson 1970). For a detailed discussion of the distribution of the tradition see Chapter 6. The red geometric finger painted tradition has been linked to the BaTwa hunter-gatherers. These groups have been argued to be culturally most closely related to modern Pygmy groups (Namono 2010) and Pygmy ethnography has helped to explain the symbolism of some of this art (Namono 2010). Therefore, at present this seems the most likely authorship of this art. All researchers have argued that the crude white painted art in this area was made by Bantu language-speakers.

The north-central Tanzania paintings differ considerably from the other painting traditions. Cattle forms are rare or absent. Geometric designs are also rare. Instead, the majority of painted images are naturalistic and depict humans and wild animals (Kohl-Larsen 1938, 1958; Odner 1971b; Mahudi 2007; Masao 2007). The few geometric designs present are generally accompanied by stylised human and animal motifs and executed in white. This suggests that the authorship in north-central Tanzania is different to that I have described above. Within this established regional context, I will therefore now turn to the history of research into the rather unique paintings of Kondoa District.

Research history on Kondoa rock paintings

The rock paintings of Kondoa have been studied from the time of early colonial rule in Tanganyika/Tanzania. It is almost a century since the Kondoa paintings were discovered and to understand the findings of the various scholars who have worked in the area, I divide the history of research into four approaches. Each approach made its own contribution to our understanding of authorship. It is from this foundation of knowledge that this thesis will build.

Approach 1 (1920s–1950s)

This approach is characterised by the work of amateurs, the majority of whom were colonial administrators and officials who discovered the paintings in the course of their duties (Bagshawe 1923; Nash 1929; Aitken 1948; Fosbrooke 1950a, b, c; Fozzard 1959, 1966). The first report of this was in 1923, by F.B. Bagshawe, a District Commissioner, who described the location of some painting sites, manners of depiction and colours used in Kondoa and the Lake Eyasi basin.

He published his findings in *Man* under the heading of "Rock paintings of Kangeju Bushmen, Tanganyika Territory" (Bagshawe 1923).

Following this, in 1929, T.A.M. Nash surveyed and published a short paper on rock paintings found in Kondoa District in the *Journal of the Royal Anthropological Institute* (1929). Nash's work illustrated paintings executed in different colour pigments ranging from red, white, yellow and purple to black (1929). Because he was not an expert in the field of rock art study, he invited Louis Leakey to visit the rock painting sites he had found. Leakey made a brief visit to the Kisese rock paintings in 1935. I consider Leakey's work in more detail below.

Henry Fosbrooke, a District Commissioner, and his wife, surveyed and documented rock painting sites throughout Kondoa District. Fosbrooke published five articles in 1950 describing different themes relating to the Kondoa rock paintings in *Tanganyika Notes and Records*, No. 29. For instance, Fosbrooke (1950a: 12–14) was one of first in Kondoa to consider the meaning and the age of the paintings. He associated the paintings with sympathetic magic and doodling. He noted that the white paintings were generally younger than the red images. Fosbrooke was uncertain about the age and authorship. He wrote, at the time, that the 'who, when, and why of the rock paintings is unsolved' (1950a:14).

In his second paper, Fosbrooke (1950b:20–6) illustrated how human and natural factors are damaging the paintings. He also described the location of the paintings and how to reach to the sites. His third publication (Fosbrooke 1950c:27–9) described two engraving sites in the Usandawe area. The engraving motifs included geometric designs such as circle lines and schematic representations which he thought depicted insects (Fosbrooke 1950c:27). These two sites are located in the Kurio and Mangasta areas. Fosbrooke's fourth and fifth articles provided details of the Kondoa sites and their locations, the subject matter of the paintings, the method used for depiction and the colours.

Generally, Fosbrooke's works are similar to the previous research, such as by Nash and Bagshawe, in that they never attempted to solve the authorship problem. Rather, he concentrated on describing the location and context of the rock paintings. When he moved on to the meaning

and age of the paintings, (1950a) there were few details and his interpretations were unclear and speculative.

Fosbrooke introduced a ‘system of numbering the sites, designating different areas in which they occur with the letters A to F, followed by site numbers’ (Leakey 1983: 14). He painted the numbers into the sites but most are now faded or have disappeared. In 1951 Leakey introduced a new way of numbering the sites by indicating the area name and then giving each site a number. For instance “PAH 55” means Pahi site number 55. Unfortunately, this numbering system led to the destruction of the painted images by local people, who, when they saw the number 55 on the rock shelter wall, believed that it showed the depth at which the Germans had buried precious goods such as gold and diamonds (local people pers. comm. 2010). They dug either within or outside the shelter, depending on the location of the number (**Figure 5**). Many of the paintings in Kondoa are faded and some have disappeared completely because of the dust caused by illegal excavation.

Figure 5: An example of illegal digging within rock painting site, Mnenia

Non-professional rock art research in Kondoa was concluded by Fozzard (1959, 1966). In June and December 1957, Fozzard surveyed and recorded rock painting sites in the southern part of Kondoa District. Fieldwork was carried out along the Bubu River; near Kingale ward and the villages of Chemchem and Iyoli. Between 1927 and 1929, Nash reported that this area was occupied by the Wasandawe people (1984). Currently, it is occupied by Warangi and a few Waburunge people. Six rock painting sites were recorded and details given. Painted images were

characterised by human and animal motifs using claret-red and orange colours. Using colour and subject matter, Fozzard suggested five styles of rock paintings as follows:

1. ‘Human figures where the body is filled in with paint and the head is drawn in outline, with centre, or face, left blank. It is a combination then of ‘solid’ or ‘open’ line style;
2. ‘Open line’ where animals are drawn in thin outline only, and although the animals are well shaped, the drawings are a little crude and there is not much detail;
3. ‘Spot style’ where shapes of the animals are constructed by grouping large spots of orange-vermillion paint; there is no outline;
4. ‘Detailed line’ animals are drawn in thin delicate outline with details such as manes, tails and body lines; they are lifelike and full of expression; and
5. ‘Solid’ where both humans and animals are in a thick coat of paint. Detail is not lost in this style, however, and care has been given in particular to the shaping of legs and feet’ (1959:94).

Fozzard was also silent about the authorship of paintings. But, he suggested that the paintings were made by local groups (Fozzard 1959:95). It is not clear, however, if he considered this the case for all the styles. Fozzard failed to use the history of the area and site distribution to explore the cultural affiliation of the paintings. As reported (Nash 1984), the area was occupied by Wasandawe and is now occupied by Waburunge and Warangi. It is possible that one or all three of these groups made the rock paintings.

Overall, the reports by non-professionals are generally descriptive, discussing the location and content of the paintings, with some categorising them according to style and pigment colour to establish typologies (Aitken 1948; Fosbrooke 1950a; Fozzard 1959, 1966). But, they failed to provide a satisfactory discussion of complex matters such as authorship and meaning.

Approach 2 (1930/50s–1980s)

The second approach of research into the Kondoa paintings was dominated by the work of professional archaeologists, but not specialists in the field of rock art studies. They wrote books and published a series of papers on the Kondoa rock paintings (Leakey 1936; 1950; Masao 1976, 1979, 1982; Leakey 1983; Anati 1986). The categorisation of the paintings according to style and pigment colour was adopted from approach 1, with the colour of the paintings providing the

primary variable by which styles were divided (Leakey 1936: 152–8, 1950:16–7). For example, Louis Leakey recognized thirteen styles of rock paintings at seven rock shelters in the Kisese and Cheke areas (see below).

After his first brief visit to Kondoa in 1929, Louis Leakey returned to the Kisese and Cheke sites. He spent several weeks in 1935 surveying and managed to trace seven rock paintings sites. The results were published in Leakey's book *Stone Age Africa* and then in *Tanganyika Notes and Records* (Leakey 1936:152–8; 1950:16–7). These were the thirteen styles Leakey identified:

1. 'Animals in red and in every case the whole figure is coloured, except for the face, which is drawn in the thick outline only and the middle left blank. Where the animal had a mane, it is shown by a series of short dashes;
2. Very curious human figures in unusual purple colour, rather badly drawn animals in the same purple, and large areas of concentric rings of dots apparently drawn with the fingertip dipped in the colouring material.In this style he also observed concentric rings of dots depicted by finger. Style 1 and 2 are older than any others;
3. A number of figures in which ostriches and giraffes are predominant, drawn in outline in a purplish red; the method of applying colouring was different from that in style 5;

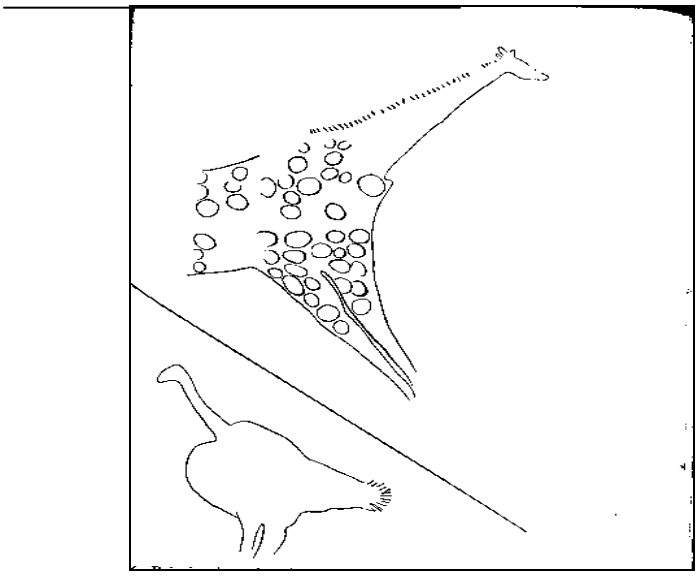


Figure 6: Rock paintings in style 3 (Leakey 1936: 29)

4. A very few indistinct black outlined figures under style 5. They may possibly belong to style 3, but the difference in colour as well as an improvement in style suggests that they should be classed alone;
5. Figures of animals drawn in outline with very thin lines of paint. The animals are very naturalistic and detail such as sex organs and manes very carefully shown. The colour used is a claret-red;
6. Yellow and orange human and animal figures, badly drawn, found overlying animals in style 5 and underlying style 7;
7. Animals in a dark claret-red colour in which the whole body is coloured. The animals are sufficiently naturalistic to be easily recognizable, but the detail is not good. Sex organs are not shown, or are the manes of giraffes. Animals in this style are common and human figures few;

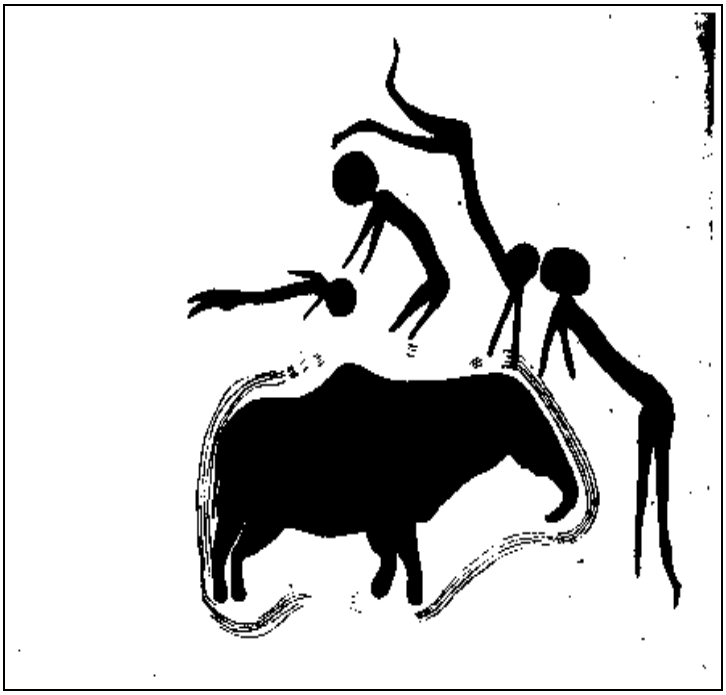


Figure 7: An example of rock paintings style 7 (Leakey 1936: 32)

8. The style overlying style 7 and animals drawn in a thick red outline. These animals are not nearly as naturalistic as those of style 5, and the commonest animal figures are

elephants. The wrinkles on the trunks of the elephant are always carefully shown, although little attention is paid to other details;

9. Animals drawn in outline in a brick-red colour. Often tails of animals are omitted;
10. A series of very curious orange human figures and badly drawn animals in solid colour;
11. Figures in a dirty yellow and white, apparently very recent indeed, including white hands;
12. Orange coloured lines and hands; and
13. Black human figures very conventionalized indeed' (Leakey 1936:152–8; 1950:16–7).

In his work, Leakey argued that style 1 to 10 belonged to Stone Age people, while the last three (11, 12 & 13) were recent and perhaps did not fit with the other 10 styles (Leakey 1936:158). At *Mongomi wa Kolo*, site BI, Leakey (1950:17–8) produced ten styles. Many of these styles are similar to those found at Kisese and Cheke sites, no doubt sharing similar traditions and authorship. Leakey didn't consider which 'Stone Age' people were responsible for making styles 1 to 10. As we saw in Chapter 2; Kondoa had at least two different hunter-gatherer groups.

On July 1951, Mary Leakey arrived in Kondoa for detailed survey and recording of the rock painting sites. She set up a research camp at Kolo hill. Local people around the area, the Warangi and Waasi, asked her to sacrifice an animal for their ancestral spirits at *Mongomi wa Kolo* and she agreed. Mary Leakey wrote:

> 'Five local leaders appeared and after exchanging polite greetings told us that before we could start work we would have to provide a goat for sacrifice to propitiate the spirits of the painted sites, which are regarded as very powerful. I agreed and we handed over 30 Tanzania shillings for a goat which we will sacrifice tomorrow in Kolo main site' (1983:17).

Together with Louis and local people, Mary Leakey conducted a comprehensive survey and documented dozens of painting sites which had never been reported by anyone before. She surveyed on the slopes and around the base of hills in the northern part of the district (**Figure 8, Page 75**). A total of 186 rock painting sites were located. Approximately 43 sites were traced and over 1,600 figures were recorded (Leakey 1983: 1). The copies of these Kondoa findings

remained unpublished and unknown for many years, kept in the National Museum of Kenya. One day, Mary Leakey's daughter in-law, Meave, was working in the archive of the Museum and by chance discovered the folder containing the original Kondoa materials. These materials were then sorted out and published in the book '*Africa's Vanishing Art: the Rock paintings of Tanzania*' (Leakey 1983).

Figure 8: A map showing rock painting sites surveyed and documented by Leakey (M. Leakey 1983:15)

In this book, Mary Leakey modified the previous sequence of styles established in Kondoa by her husband (Leakey 1936:152–8, 1950:17–8). She made a detailed assessment of the paintings

based on superimposed and non-superimposed images, colour and subject matter. She came up with nine styles arranged from earliest to latest:

1. ‘Black figures in thick outline, rather poorly drawn;
2. Faded brownish-red fingertip paintings such as stylized human figures and unidentifiable spotted animals;
3. Naturalistic paintings in fine outline executed in free-flowing lines with great appreciation of form. The courting white rhinoceroses and the ostrich at Kisese are good examples;
4. Animals in red outline infilled with yellow wash, most often used when depicting friezes of eland as at Pahi and Cheke;
5. Naturalistic animals in full red such as the herd of antelope (possibly eland) at Kisese;
6. Naturalistic streaky style. The herds of hartebeest at Kinyasi 2, in which the filling lines have been used to portray the contours of the antelope’s bodies. This was a period of great artistic ability, when animals were painted in different attitudes and not merely in profile;

Figure 9: Rock painting style 6 (Leakey 1983: 31)

7. Stiff, wooden animals in rather thick, brick-red outline, often without tails;

8. Crude daubs in white, black and red. A few depict game animals like those at Pahi 1 site, but many are merely symbols of various kinds: hands, lines of dots, rectangles, circles etc.; and
9. Representations of humped cattle and also of symbols in both black and white pigment, some of the latter may represent cattle brands' (Leakey 1983:28–31).

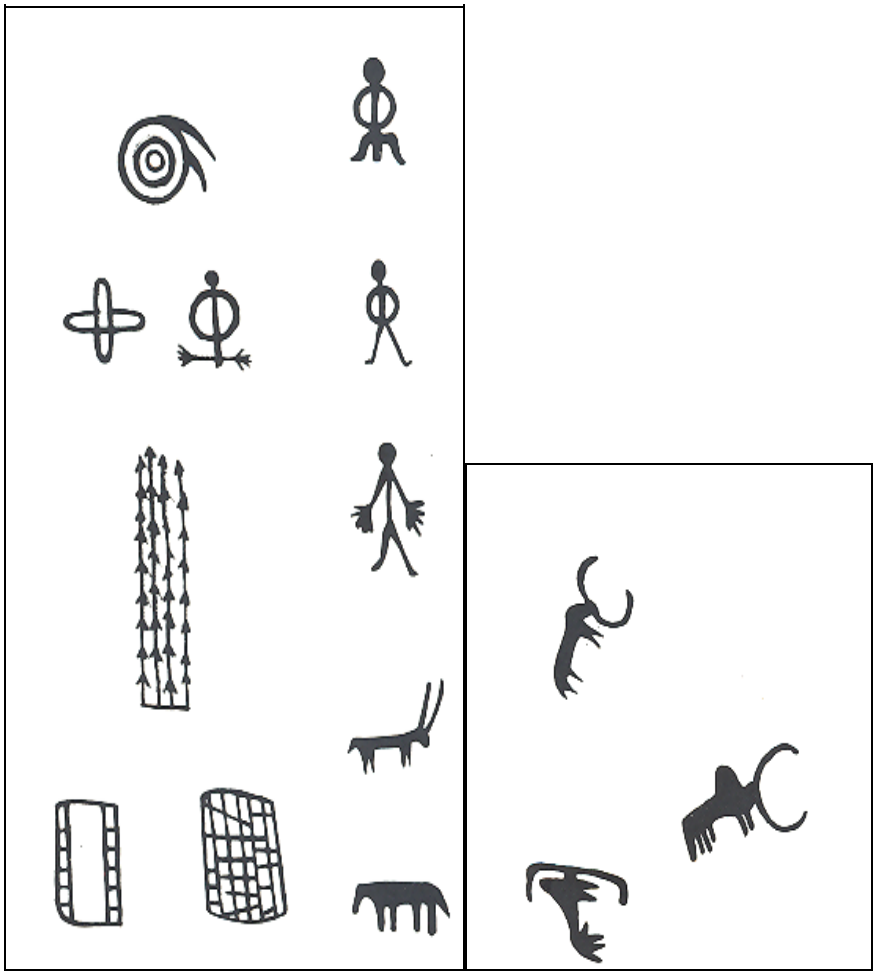


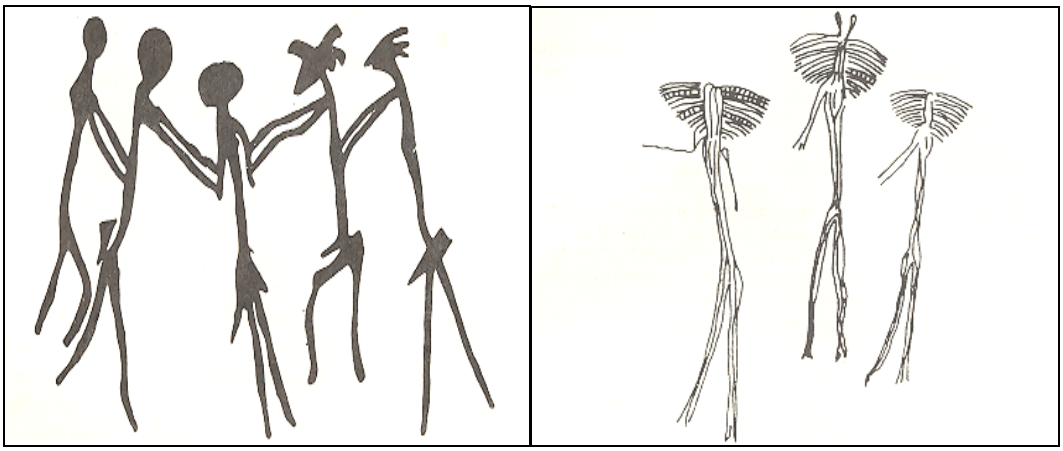
Figure 10: Rock paintings style 9 (Leakey 1983: 124─125)

In her work, Mary Leakey was less interested in authorship than in recording. She believed some paintings were old, made by Stone Age people while others were young.

Different scholars have continued to contest and modify the sequence of styles of the Kondoa paintings. Fidelis Masao, in his study in the 1970s of the Later Stone Age and the rock paintings of Central Tanzania, recorded about 70 rock painting sites in both Kondoa and Iramba districts

(1979). Using criteria such as subject matter, geographical distribution and chronological sequence, Masao simplified the overly complex early sequences into four chronological styles:

1. 'Stylized representations': the style involves human figures executed showing body parts such as head or muscles. Other figures showing various activities: dancing, hunting, running and fighting or carrying bow, arrow and spears. The figures are drawn with thin and thick line. Heads of human figures always have masks (**figure 11**);



a b

Figure 11: Rock paintings style 1 (Masao 1982: 9)

2. 'Naturalistic representations': animal figures ranged from largest to small creeping lizard. Animal figures are shown in various styles: simple open line, double open line, red solid filled-in silhouettes and red line outline infilled with various motifs. Few human figures are drawn. Among the animals, antelope is the most common group, and in this group, eland is often executed. Individually, giraffe is the most a common species painted followed by elephants, kudus, impalas and zebra. Anatomical features of the animals such as eyes, ears, horns, mane and tail are elaborated while sex organs are not shown. The style also includes a group of carnivores such as hyenas, reptiles and birds such as ostrich. Generally, animals are frequently painted with many more styles than humans;
3. 'White semi-realistic silhouettes': the style represents human and animal figures. Both are executed in different white shades with poor finishing. Methods of portraying the paintings include filled in, either with a thin wash or smeared with the same colour, such as white and black. Domestic animals such as cattle, sheep and dog are common. Some animal motifs have black colour while the more popular are white. The human figures are

always poorly executed. The majority of the paintings in this style overlie the red figures; and

4. ‘Abstract and geometric style’: these are representations of different geometric motifs of line, circles, squares, dots, and non-geometric signs and symbols. A large part of the motifs was done in white pigments and a few in orange and brown (Masao 1979:226–252, 1982:10).

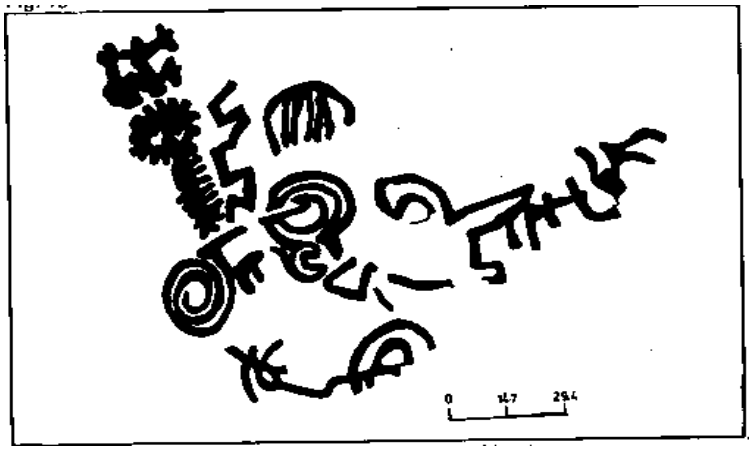


Figure 12: Rock paintings style 4 (Masao 1982: 10)

According to Masao (1979, 1982:40) styles 1, 2 and 3 in central Tanzania are older, dated at least 3000 years ago, and correlate to Late Stone Age people. He also added that if we agree that Hadzabe and Wasandawe are native to the area and represent descendant of LSA people, then they were possibly the makers of the early rock paintings in central Tanzania (Masao 1982:28). The white and yellow paintings are recent, dating to less than 200 years ago (Masao 1982:40). Masao’s conclusion is similar to that of Phillipson (1972) for Zambian rock art. He attributes the naturalistic red rock art to Late Stone Age people. However, Masao didn’t provide authorship of the black animals, such as the cattle in style 3 and the geometric and abstract motifs in style 4. Generally, Masao struggled with authorship and left it unclear as to which style was produced by which group.

In the 1980s, Emmanuel Anati, a UNESCO consultant, surveyed and documented 102 rock painting sites in Kondoa District (1986). He proposed a stylistic system, which categorised the rock art into six major styles, reflecting both chronology and typology. The styles revealed the

social and economic activities of the societies which he thought were connected to the paintings (1986:32). Anati's styles were later adopted by Mturi when describing the rock paintings of Kondoa (Mturi 1998: 77–81). The following styles designs were established, starting from the most recent and moving to the oldest:

1. 'Late-White Bantu Style': this comprises schematic and geometric figures. The style is dominated by white or "dirty-white" as its main colour. Other colours include yellow, pink and black. Common figures are geometric designs such as rectangles, discs, zigzag line, and series of parallel lines, hand stencils and astral and solar shapes. These are followed by human figures and domestic animals such as goat and sheep. A few wild animals such as giraffes and antelopes are also painted. Other motifs include snakes, alligators, lizards, birds, axes, bows, arrows, spears and hoes. Anati connected this style to Bantu language- speakers. Some shelters containing these paintings were used for initiation training, rituals and other secret ceremonies. This style was dated to 200 years ago;
2. 'Pastoral style': main colours used are black, grey and green-grey. It consists of domesticated cattle such as zebu or humped cattle. The horns of some cattle figures are emphasized. Weapons and tools, such as spears and shields, are rare and some motifs have signs of tribal marks. Economically and socially, the style conveys nomadic pastoral groups and particularly the Nilotic group. These paintings started in the first millennium BC;
3. 'Stone Bowl Culture style': this style frequently depicted large animals. Few giraffes are drawn, but wild caprines and elephant are often painted. Colours used range from brown-grey to grey. Method of depiction involves splashing mud onto the shelter wall and then smearing it and making outlines, using a finger dipped into the mud. Economic and social activities reflect the making of heavy, thick bowls from stone. They made pestles, polished grinding stone and a variety of other polished stone tools. Material culture included pottery vessels with impressed decoration, bone points, egg shell beads and stone tools. Blades, burins, scrapers, microlithic crescents and triangles are common stone tools. The stone bowl paintings were dated between the second and first millennium BC. Anati acknowledges that this date overlaps with what he described as pastoral paintings;

4. ‘Late hunter style’: the figures are depicted with more detail. Colours used for depiction include orange, yellow, brown and violet. Bichrome and polychrome figures are also depicted. Most of the figures show the daily life of hunting activities. These activities were represented by the depiction of human figures using bows and arrows. Humans were shown with hairstyles, headdresses, necklaces and skirts. Common animal figures were antelope. This style covered the last two millennia BC. Hunting was the main economic activity while antelope was a common animal painted;
5. ‘Art of the early gatherers’: this style is defined by humans participating and performing ritual activities. Dominant colours include various shades of red and brown. Dirty white is also present. Bichrome figures are common. The figures indicate humans involved in social and religious activities. Geometric designs and vegetables such as fruits and leaves were represented. Animal figures are rare and few details are given. Food collection was the main social and economic activity. Brush was the most common method used. No dates have been established, but Anati suggested the style perhaps ranged between 2,000 to 6, 000 years ago; and
6. ‘Early hunter style’: the style is defined by the depiction of large numbers of animal figures and a few or almost absent human motifs. The animal motifs are solid in red colour and parts of the figures are defined by a line of contour. Motifs showed details: manes, hair parts, horns, tails and genitals. Dark reddish-brown was the main colour used. Other colours are red and brown. The application of more than one colour such as bichrome and polychrome was also used. Elephant and giraffe were frequently drawn. Antelopes, gazelles and eland were also represented. Weapons and tools are absent indicating that hunting without the bow was the main economic activity. The approximate date of this style is 40,000 years ago (Anati 1986:32–55 also see Mturi 1998:77–81).

By comparison, Anati’s (1986) scheme was more detailed than that of Leakey (1936, 1950), Fozzard (1959, 1966), Odner (1971b), Masao (1979, 1982) and Leakey (1983). He linked paintings with economic activities and the social beliefs of the painter and he even speculates upon the dates of paintings in each style. However, these styles were at least partly based on Anati’s global rock art schema which is not widely accepted (Smith pers. comm. 2011). Both the

ascription of style and authorship is done more on the basis of assertion than on evidence and well-reasoned arguments.

Table 5: Tentative association of styles proposed for Central Tanzanian rock paintings

Author	**Leakey 1936**	**Fozzard 1959**	**Odner 1971b**	**Masao 1979**	**M. Leakey 1983**	**Anati 1986**
Style No	-	1	2	1	2	5
	5	4	1	2	3,4,5,6,7	3,4,5,6,
	11	5	3	3	9	2
	12	-	3	4	8	1

While providing a sound empirical basis, the approach of description and formal classification failed to provide a clear understanding of which ethnic group made which tradition within the Kondoa rock paintings sequence. The failure created a major problem for understanding the Kondoa rock paintings. The approach also failed to create a clear sequence of styles. In **Table 5** I have tried to reconcile the different sequences as far as is possible. As can be seen many of the sequences are incompatible or contradictory. There is no way to exactly align them.

Approach 3 (1980s–1990s)

Work in this approach differs from previous work in the sense that it ignores problems of style and chronology and focuses instead on the search for the meaning of the paintings by considering the rituals and beliefs of the indigenous people of the area (Ten Raa 1971, 1974; Lewis-Williams 1986; Lim 1992). Eric Ten Raa worked in this area from the 1960s to 1980s. I decided to group his work into this approach instead of approach 2 because his ideas were based on understanding the paintings through ethnography notably considering rituals and beliefs of the local people and ignoring issue of style and colour on interpreting the art. Ten Raa work fits to Lewis –Williams (1986 and Lim (1992) ideas that define approach 3.

Approach 3 scholars were from recognised institutions and experienced in both the field of rock art research (David Lewis-Williams) and anthropology (Ten Raa & Imogene Lim). Ten Raa and Lim conducted dedicated research in Kondoa, while Lewis-Williams used published references and interpreted the art based on these and his own experiences from southern African San rock art. He has used a shamanistic explanation to understand the rock art of southern Africa and he applied this approach to Kondoa. The ethnographic approach had been used effectively in southern Africa to study San rock art since the 1970s (e.g. Vinnicombe 1972, 1975, 1976; Lewis-Williams, 1980, 1981, 1992, 1998; 2002; Lewis-Williams & Pearce 2004).

The use of ethnography to interpret the rock paintings of Kondoa was initially carried out by Ten Raa in 1960s to 1980s. Ten Raa was a postmaster in Kondoa and used his experience of the area to study Wasandawe social life and culture (e.g. Ten Raa 1963, 1964, 1966a, b, c, 1968, 1969 a, b, c, 1970, 1971, 1974, 1981). This gave him the interest to search for the relationship between the rock paintings and the Wasandawe inhabitants of the area. He participated in Wasandawe daily life and social activities such as hunting and rituals. Through these activities he recognised a strong relationship between some paintings and Wasandawe culture. He recognised three categories of rock paintings made by Wasandawe according to different functions namely: 'casual', 'magic' and 'sacrificial' paintings (Chapter 6 for details).

Lewis-Williams (1986), with his emphasis upon shamanism, focused specifically on the Wasandawe shamanistic ritual of *simbó.* He describes *simbó* as a "spirit control cult". During *simbó* Lewis-Williams suggests that *simbó* dancers believe that they turn into lions rather than being possessed by spirits. *Simbó* dancers fight off evil spirits. Lewis-Williams, drawing from San trance dances, suggest that both *simbó* dancers and San medicine men attribute the ability to know things from afar to out-of-body travel during trance and experience. Lewis-Williams' analysis suggests ways of studying hunter-gatherer paintings by considering specific features in the rock paintings in relation to the Wasandawe ritual *simbó.* The ethnographic method used by Lewis-Williams requires that the paintings interpreted were made by the Wasandawe. If not, then the use of ethnography is irrelevant. I question whether sufficient research has been done to make this a wise assumption. At the very least, it is premature.

Imogene Lim (1992) undertook her PhD research on the Kondoa rock paintings, particularly in the Usandawe area. Lim attempted to interpret the Usandawe paintings by combining both the physical environment and the social context of the site using "a site-oriented approach to rock art". Her approach focused on the relationship between the rock paintings and sites, sites and the landscape, and the landscape and the community. Lim concentrated on understanding beliefs and explored how these beliefs could assist her to interpret the paintings. She recognised that most Wasandawe sacrifices took place on hills; therefore, she considered hills as important points in the Wasandawe symbolic landscape. From this observation, Lim suggested that the hill should be the second object in the process of studying rock paintings after the belief system. According to Lim the meaning and the power of a place is produced through ritual activities: **"**that is, the meaning is in the doing (=process), not in the object (=painted figure)" (Lim 1996:79).

Contrary to Ten Raa (1971, 1974) and Lewis-Williams (1986), who had both connected some paintings to the *simbó* ritual dance, Lim associated paintings in Usandawe with the *iyari* ritual for the celebration of the birth of Wasandawe twins. The ritual aimed to protect mothers and twins from lightning (1992, 1996). In a number of African farmer/pastoralists societies, such as Nuer, Nyoro and Sukuma, ritual ceremonies related to the birth of twins can be found (Evans-Pritchard 1936; Cory 1944; Beattie 1962). This raises the issue of whether *iyari* is originally Wasandawe or whether it has been borrowed during interaction with neighbouring groups.

The work of Ten Raa (Ten 1971) Lewis-Williams (1986) and Lim (1992) explicitly gives authorship of the rock paintings in Kondoa to the Wasandawe. I argue that the Wasandawe cannot be assumed to be the authors of all of the rock paintings scattered in Kondoa District. This is because the area has been occupied by many different groups with different lifestyles and cultures. The presence of different subjects, styles and methods of depiction within the Kondoa paintings, what I call different "traditions" of art, suggest strongly that more than one group may have been involved in making rock art. Hence, more research is necessary to explore issues of authorship and to resolve this matter before an ethnographic approach to interpretation is used. This will ensure the use of appropriate ethnography in future interpretation. For this reason, contra Lewis-Williams (1986), issues of the style are foundational to secure interpretation.

Approach 4 (2000 to present)

A fourth group of researchers, including myself, have focused on the management of rock painting sites and associated living heritage (Loubser 2001; Ndoro 2003; Antiquities Division 2005a, b; Chalcraft 2004, 2005; Bwasiri 2008, 2011a, b, 2014). The focus on management gained momentum in 2000 when the Antiquities Division, through the government of Tanzania, asked the UNESCO World Heritage Committee to inscribe the Kondoa rock paintings onto the World Heritage List. Acceptance onto the World Heritage List went together with the implementation of various important management measures. This started with a lengthy nomination process (Antiquities Division 2005a) in which experts in heritage management were consulted to evaluate the paintings and the associated living heritage (e.g. Loubser 2001; Ndoro 2003; Chalcraft 2004; 2005). The findings from these scholars showed that some sites, particularly *Mongomi wa Kolo*, have strong living heritage associations amongst the local people. This living heritage has become a source of study and interest in itself (Chalcraft 2004, 2005; Bwasiri 2008; 2011a, b, 2014).

The process of nomination for inclusion on the World Heritage List involved seminars and meetings between the heritage authority and the local community associated with the sites. As part of the nomination process, the Division of Antiquities also constructed a new management office at Kolo in 2002. The new building was designed to accommodate the office of the Antiquities staff at the Kolo station, as well as to provide a place for displays. The Kolo office now has four staff members and two trained guides who are the custodians of the Kondoa rock paintings. I am among the four staff members to have worked at the Kondoa rock paintings World Heritage Sites. The approach 4 works have not contributed anything specifically on authorship but have revealed much about contemporary use and perspectives on the paintings and so contributed to this study.

This history of research in Kondoa has therefore left authorship questions unresolved. These questions are in need of urgent attention, before we can move forward to consider the interesting topic of meaning and motivation for each style. In Chapter 4, I will set out how I intend to fix the authorship problem in Kondoa and in Chapter 5 I will attempt to do this.

CHAPTER FOUR

Methodological and Theoretical Considerations

Introduction

With the historic confusion over the stylistic sequences at Kondoa clearly in mind, and the implications of this upon our understanding of authorship and meaning laid bare, I now set out the theoretical and methodological approach that I will use to address these problems. Issues of rock art style and cultural identity, which have been central concerns in archaeology for many decades, lie at the heart of this project.

More than thirty years ago, a study of style and identity of comparable complexity, was made by Ian Hodder (1977, 1982) in his study of material culture at Baringo District in western Kenya, western Zambia and the Nuba mountains in Sudan. These regions contain multiple 'ethnic' groups within the same landscape, each producing both similar and different material culture. To understand the distribution of material culture and how material culture styles tie to authorship, Hodder examined the history of the area, including past and present interaction, individual daily activities and material culture styles. He also considered the movement of the people in the landscape. He was able to see the effects of gender on material culture production among the groups. He also noted that sharing of economic, trading and marriage activities and movement of the people, resulted in a mixing of material culture traits within the areas. Objects of some groups appeared in use by other groups.

Hodder noticed that each group tried to maintain its identity through its creation of material objects. He concluded that despite considerable interaction and inter-marriage, material culture boundaries between ethnicities were maintained. Working in a similar manner, this study also expects to see evidence of rock art motif/s associated with contact and interaction between the groups in Kondoa maintained.

In this chapter, I consider rock paintings as material objects, and will use statistical methods for sorting and finding patterns of association among the paintings. This study draws further from

Hodder in that it is theoretically grounded in postprocessual theory, and in an understanding of material culture production as agentful and contextually rooted.

Postprocessual theory

Postprocessual theory, as first used by Ian Hodder in 1985, referred to a series of theoretical approaches deployed in archaeological thinking that shared little except being critical of processual archaeology (1985). The postprocessualists argued that knowledge comes from a dialogue between subject (archaeologist) and object (the archaeological record). They abandoned the search for an objective reality, believing that 'New Archaeology's primary failing is its overemphasis on validation and efforts to be objective' (Patterson 1989:563). Postprocessualism puts emphasis on social factors in the way human societies operate. It incorporates many different approaches derived from Marxism, hermeneutics, post-structuralism, and constructivism as alternatives to the Middle Range Theory (Patterson 1989). It provides archaeology with more sophisticated conceptions of past societies and gives researchers the tools to explore ancient societies through the study of archaeological materials (Shanks & Hodder 1998).

In keeping with a postprocessual approach, I accept that it will be useful to investigate rock art style as a tool for dividing the art into sequences, considering authorship and developing approaches to understand symbolic meanings in the art in Kondoa. Julie Francis (2001) saw style as an agentful vehicle of expression within the group, communicating and fixing certain values of religious, social and moral life as well as a range of personal individual and contextual factors. Changes in style can correlate with the rise, maturity and decline of specific identities (Shennan 1994). In this framework, style in rock art consists of the repeated creation of particular figure types that shows internal continuity with respect to specific manufacturing techniques and combinations of design element, within a limited temporal, and a specific spatial distribution (Francis 2001). In addition, Franklin (1989) points out that style must be understood as an element of intentionally constructed differentiation caused by the mutual interaction of human groups. Style inevitably reflects certain values and intentions of the makers of the art and society to which they belong (Smith 1998).

Scholars tended to classify art as they classify stone tools, with style taking the place of typology (Burkitt 1928). In Kondoa, researchers had been using style to establish cultural sequences within the paintings (e.g. Leakey 1936; Masao 1979, 1982; Leakey 1983; Anati 1986). The rock art sequences formulated by early scholars were contested by others scholars (Lewis-Williams 1986; Lim 1992). Lewis-Williams pointed out that studying style did not lead to an understanding of meaning. According to Lewis-Williams (1986), the style can be explained through a framework of the cultural belief systems and practices that motivated the art.

In Kondoa, more than one ethnic group may have been authors of the paintings. Styles relating to different periods of time are clearly evident in the rock paintings in Kondoa. However, simple correlation of style with identity may not be possible. It is possible that one culture might be responsible for two or more styles at the same time. This can happen, such as when each style had different and specific functions for the artists (Franklin 1989; Whitley 2005). Therefore it is problematic to associate a style with a particular ethnic group in the Kondoa area without considering the history of the area and its people.

I therefore build this study on an awareness of the ethnic complexity of Kondoa. I have explored, in detail, the history of the settlement of the area and made a careful study of the historic background of the ethnic groups in the area. The relationship between changing rock painting styles and changing conceptions of ethnicity will be considered. Shanks & Tilley (1987) and Shanks (1992) also emphasise the issue of looking at the relationship between past and present and with other societies and cultures, when developing archaeological interpretations. I agree with Shanks and Tilley that the social context is crucial to how the paintings were made and I use this as the foundation for considering authorship.

I expect to achieve the depth of analysis that will allow for changing conceptions of authorship to be revealed. The methods used here are designed to be open to this and consider variations between individual artists. I consider particular painting choices made at each site and I look for repeated changes in the paintings through time. In my broader theoretical framework, I consider contextual approaches, material culture, identity, ethnicity and how to consider such issues using an analysis of rock art style.

Contextual approach

Contextual archaeology is an approach advanced by Ian Hodder in 1986. It deals with identifying and studying context when seeking to understand an object and its functions. The approach examines landscape, environments and social setting when trying to understand archaeological objects. Within the framework of context, the approach encourages researchers to understand how an object was made and then read it 'as text' in order to interpret the past. For this study, just as a student would read an historic text to understand an author and his/her social context, so I will attempt to read the rock art. As with text, both the paintings and the reading of the paintings are defined by their context (Hodder 1986:154, 1987; Hodder &Hutson 2003:204).

The work of William Challis (2008) concerning contact rock art in the Maloti-Drakensberg Mountains of South Africa provides a great example of a contextual approach to authorship. His thesis describes, in detail, the interactions among the hunter-gatherer Bushmen, and Bantu language-speakers, during the introduction of colonialism to the area. Rock art analysis of style and content, as well as a study of site distribution, proved useful in revealing changing identity conceptions and changing authorships of the rock art. It identified and showed authorship by a new multi-ethnic group known as the AmaTola. Using rock art style and content, Challis was able to identify art produced before and after colonial contact, and then to interpret each within its own particular social context. In this way, his study moved San rock art studies towards changing contextually based readings of the art. It is this kind of approach that I hope to achieve in Kondoa.

Material Culture

According to Hodder (1977, 1986; see also Huffman 2007:104), material culture creates a society through its use in the action of an individual. Material culture is an active agent affecting action, behaviour and culture. It constitutes the lived experience of social and cultural identity (Hodder 1986). Individuals and societies construct their own social reality through material culture. I consider rock paintings in this way. Careful analysis of the paintings can aid in knowing the people who created them (e.g. Hodder 1982, 1986, 1987, 1991; Shanks & Tilley 1987; Tilley 1990). I consider rock paintings within a broad approach of reading material culture

as text and use style as a fundamental component of this. A writing style betrays an author and his/her time just as does a painting style.

Style and identity in material culture studies

For decades, archaeologists have debated the use of style to identify authorship in material culture. One group of scholars believes style is a useful tool for understanding ethnicity in past societies through material culture (Plog 1980; Conkey 1990; Chaloupka 1993; Lorblanchet & Bahn 1993; Huffman 2007). The second group of scholars refutes this kind of use of style by arguing that archaeological interpretation can be made without it (e.g. Gebauer 1987).

In this debate, some scholars such as Plog (1980, 1983:127) consider style a reflection of social membership, status, wealth, belief system and political ideology. These elements define the identity of the related group. Similarly, Hodder (1990) viewed style as an expression and validation of group identity and difference. Kintigh (1985) views some styles as a product of a learning process and information exchange among groups or between individuals. He suggests that different styles exist through learning and interaction. This involves interaction between parents and their children and between groups and individuals (Plog 1983:126; Hardin 1984). Lindahl & Pikirayi (2010:293) have a different view, considering style as a form of social communication (see also Wobst 1977; Wiessner 1989).

The debate continues about the definition of style among scholars. Archaeologists and art historians have defined style in different ways. According to Sackett (1982:63, 1985:115) style is a 'highly specific and characteristic manner of doing something, which by its very nature is peculiar to a specific time and place'. Wiessner (1990:107) defines style as "a form of non-verbal communication through doing something in a certain way that communicates information about relative identity". Hodder (1990:45) defines it as 'a way of doing', where 'doing' includes the activities of 'thinking, feeling, being'.

Generally, archaeologists treat style as patterns in material culture that result from human interaction (Conkey 1990:10–1; Hegmon 1992:518). Researchers gain information about past people through style analysis (Binford 1987). Thus the study of style considers specific patterns

of material culture variation that relate to aspects of identity (Hegmon 1992:519). The variation within the material culture style regularly indicates group identity and ethnic boundaries and I discuss this below.

In recent years, archaeologists have been interested in examining the relationship between identity and material culture (Gleason 1983; Gosselain 2000; Meskell 2001, 2002; Croucher &Wynne-Jones 2006; Wynne-Jones & Croucher 2007; Lindahl & Pikirayi 2010). These scholars believe that archaeological findings can provide a useful tool to understand the distribution of past groups and past identities.

Identity expresses the idea of sameness, likeness and oneness (Trimble 2000). Scholars such as Simpson & Weiner (1989:620) defined identity as 'the sameness of person or thing at all times or in circumstance; the condition or fact that person or thing is itself and not something else; individual personality'. Basically, identity exists in social groups and individuals (Zavallon 1975; Tajfel 1978). Identity is divided into two categories: firstly, the group of people who marked and shared membership rule and characteristic traits (Erikson 1950:219; Gleason 1983:914), secondly, the individual identity that the person learned from childhood or features of biological inheritance (Sokefeld 1999:417). This will inevitably be influenced by the historical situation of the culture (Erikson 1950).

Related to identity, is the word 'ethnic'. The word ethnic refers to a group of people who share common customs (Trimble 2000). Grouping these two words together gives ethnic identity, carrying the meaning of a group of people who share common customs, traditions, historical experiences and geographical residence (Barth 1969). Sociologist Fredrik Barth (1969:14) suggested that ethnic identities have boundaries which distinguish one group from another. These boundaries include culture, language, religion, ideology and kinship (Phinney 1990, 2000, 2003; Harrison 1999). The boundaries define only groups of people and not their culture (Phinney 2003).

According to Phinney (2003:63) ethnic identity is not fixed; it changes according to certain situations such as the invention of new technology, and according to contact with other groups. When an ethnic individual migrates from their original homeland and meets with other groups,

their ethnic identity will be influenced and new traits will be adopted (Tajfel 1978). A good example of this can be seen in young African people who go to America or Europe for their studies or businesses and who adopt aspects of other cultures easily.

The boundaries which form ethnic identity are maintained through ethnic status (Barth 1969; Tajfel 1978). Analysis of material culture style allows one to identify elements that mark identity and to see their spatial boundaries (Wobst 1977:322; Yang 2000). Thus style can be used in rock art studies as an approach to understanding artist identities and social boundaries (Franklin 1989).

Scholars such as Baumeister (1986) and Meskell (1999) have discussed a number of problems that connected to identity studies, particularly how identity operates in society, how material culture reflects identity or how artefact style links to individuality. Archaeologists have been responding to these problems by exploring case studies to see how ethnic groups known through historic records are manifested in patterns in material culture (e.g. Jones 2000; Gosden 2001; Harrison 2002; Blundell 2004). This has yielded valuable insights for example Malkki (1995) has noted the possibility of multiple identities within one society caused by contact between groups. The problem of studying multiple identities is solved through examining style difference and boundaries among the society and charting connections and borrowing between groups (Malkki 1995; Hodder 1977; Gosden 2001). A similar idea can be applied to rock art analysis.

Ethnographic work has also helped us to understand how style operates (Haizer & Baumhoff 1962:197; Whitley 2005:49–52). Activities carried out within specific groups can produce numerous styles over a long or short time period. Each activity has its own ritual, custom and taboos, carrying different meaning and having a different function within societies. Combinations of these activities, together with gender differences, produce various styles within a specific time and place. For example, Franz Boaz in 1927 analysed decorative designs in material culture among Eskimo men and women. The analysis showed that two different styles existed in the same community. The style of men was represented by geometric designs on clothing while that of women was indicated by geometric designs on basketry and matting (Boaz 1955:180).

A parallel study was conducted by William Bascon concerning African art designs. He witnessed that multiple styles existed among the Yoruba, such as wood carving and brass casting styles. These multiple styles were manufactured by the same people, in the same time and same area. Bascon noted that distinctions of style resulted from the artists' use of different methods and different functions for objects (1969:108).

Biebuyck (1969:20) also noticed that some aspects of styles are not always restricted to the whole ethnic group. Rather they can represent individuals or institutions within a culture. Style therefore, need not symbolize different regional or sub groups; it is may be a product of the different functions and actions undertaken by people or institutions within society (Biebuyck 1969:20; Whitley 1982:53). In showing style, it is not an indication of the whole society rather than specific people, Biebuyck wrote:

> 'There is ample evidence to show that specific categories of art object or specific art style are often correlated not with a whole culture but with a particular institution such as an initiation system, cults, voluntary association, restricted belief system and myth. These institutions represent only one dimension of the entire culture; sometimes they have a local rather than pantribal distribution; sometimes they are transtribal' (1969:20).

Style is therefore multilevel, at the grand scale reflecting broad cultural identity and at the smaller scale it can reflect methods, functions and even the gender of the individual.

Style and identity in rock art studies

Rock art researchers defined style variously in terms of colour, method and subject matter. For instance, Masao (1982:8) refers to 'style' as a combination of motif, character, method and form. The combination of four stylistic traits assisted him in coming up with four rock painting styles in central Tanzania (Chapter 3). Smith (1998:218), who worked on the rock paintings of Malawi and Zambia, defined style as the "body of pictures that have been collected together by their common use of convention". Style relates to ways that artists execute their motifs and their picturing choices in particular times and places. Styles therefore, flux and change in time and

space (Smith 1998:218). At Giant's Castle, South Africa, Russell (2000: 61) defined style as "the colour of the paint and the way in which it was mixed and applied".

Archaeologists and rock art researchers therefore use overlapping conceptions of style. The archaeologists use style to study archaeological assemblages such as lithic and pottery to understand how they change through time and space. Equally, rock art researchers use style in a similar way, to examine changing painting traditions.

Art historians also use the concept of style. They define style based on a cultural history approach where the history of people and their culture defines style. The art historian Meyer Shapiro (1953) provided a definition which is accepted and used by many rock art researchers (e.g. Shaafsma 1971; Francis 2001:222; Whitley 2005:43). Haizer & Baumhoff (1962:197) used Shapiro's conception of style when they studied engraving sites in Nevada and in Eastern California. Likewise, Shaafsma (1971:2–3) in Utah and Whitley (1982) in south-central California followed Shapiro's use of style. Shapiro defines style as follows:

> 'A system of forms with a quality and meaningful expression through which the personality of the artists and the overall outlook of a group are visible. It is also a vehicle of expression within a group, communicating and fixing certain values of religious, social, and moral life through the emotional suggestiveness of forms. Or by style is meant the constant form and sometimes the constant elements, qualities and expression in the art of individual or groups….. For archaeologists, style is exemplified in a motif or pattern which helps to localize and date the work and establish connections between groups of works or between cultures: style here is a symptomatic trait, like the non-aesthetic features of an artefact' (1953: 287).

This study agrees with these definitions and combines them. My definition of style is the set of choices made in the production of a set of paintings. Unique choices may reflect the 'style' of the individual. Regularly repeated choices will reflect the style of the group. These artist choices include the choice of material (colour), place to paint (shelter wall), method, manner of depiction, and subject matter. The time, place and demands (social, economic and political) upon

the individual/group/institution guide the artist's choice of style. These demands differ from one time and place to another.

While rock art style has proven useful in many studies of identity and authorship (e.g. Challis 2008), its use is as contested in rock art as in other fields of archaeology (e.g. Conkey & Hartorf 1990). The majority of rock art scholars emphasise the importance of style. They argue that studying rock art without considering style is fundamentally flawed (Smith 1992; Chaloupka 1993; Haskovec 1993; Smits 1993; Clegg1993; Mathpal 1993; Welch 1993; Whitley 2005). Only a few have argued that style is best ignored (Bahn 1993; Clottes 1993; Boast 1997).

Researchers who support the value of style in rock art studies argue that style is a cultural product of people in particular spatio-temporal context. In this regard, a single style is formed, continues in use and then develops through time and fluxes in its distribution. Multiple styles are produced within a single period of time and in the same space. No single factor is sufficient to explain single/multiple styles in a particular space and time (Smith 1992; Haskovec 1993; Smits 1993; Clegg 1993; Mathpal 1993; Welch 1993; Whitley 2005).

In Kimberley, Australia, for instance, David Welch (1993:99) showed that different styles co-existed and overlapped. They ranged from the earliest naturalist human and animal figures to recent styles. Welch noted that style change is associated with changes in the manner of depiction of subject matter and colour.

A similar study was conducted in Arnhem Land Australia, by Ivan Haskovec (1993). He noted that social activities carried out within societies such as traditional marriage, ritual processes and innovations, all contributed to style change within the area (1993:201). According to Dronfield (1993:190) and Haskovec (1993:199), technological change and social change within a society contributed to the development and spread of particular styles.

In connection with how style changes in rock art, Smits (1993:127) worked at Ha Baroana in Lesotho. He emphasized that researchers should consider the subject matter of the motifs and its attributes. The attributes include size, shape as well as the methods used for portraying the

figures. Each attribute has a relation to a cultural identity in a particular period of time, therefore underpinning different styles.

The work of David Whitley (2000) in California describes and explains how multiple rock art styles are produced by one group. Ethnographic records indicate that the rock engravings of San Diego were made by shamans during female puberty, male puberty and initiation. These gendered initiations are carried out in distinct ritual contexts. The result of these two rituals is the making of different styles of art within the same area by the same group (Whitley 2005:49). Here style represents both identity and function while also linking to gender.

Also in San Diego is the Yuman-speaking population. They live along the lower Colorado River at the south-eastern part of California. The Yuman made four different rock art styles: the art depicted during the visitation of their Creation Mountain, initiation of boys and girls, separation from puberty and shamans and non-shamans in group ritual pilgrimages (Whitley 2000, 2005:49). The functions of the rituals, gender differences and the division of labour create different styles within the same community (Whitley 2005: 50). These examples from America and other parts of Africa provide important lessons for understanding the use of style in the rock paintings of Kondoa and my study of authorship.

No single factor causes style variation; rather there are multiple factors including gender, technological change, production context, place and individual/group needs. But, broader uses of style within time and space when repeated regularly move beyond the contextual factors and reflect broader social identities. According to Chippindale (2001:250), material culture expresses and constructs the social meaning of the people attached to it. Specifically in rock art, style will therefore be a key element for recognising authorship, tradition and change through space and time.

In the context of Kondoa, where we have multiple language groups interacting and sharing some beliefs, style can provide a valuable marker of identity formation and cultural influence. Some interchange of style can be expected from social factors such as intermarriage and ritual initiations. I anticipate that some motifs will show transitions, while others will show continuity or discontinuity. Any continuity of painted images within space and time will be termed a

tradition. Incremental changes within a tradition could show other factors. I will therefore consider the nature of change through time and space as this can reveal important information on authorship.

Furthermore, I assume that sometimes there will be more than one style within a tradition. A tradition may contain a series of styles representing variations in the identities of the makers. I expect also that variations in style within a tradition will be caused by interactions between groups. I do not assume a simplistic link between material culture, style and identity. Ethnographic enquiry and historical records will assist me to examine the relationship between these three variables. It is therefore the stylistic evidence for interactions, continuities and change that I will use as a framework for examining the rock art of Kondoa. I use this framework to examine the painted sequence and then to establish the authorship of the art.

Methods

Archive survey

After choosing my Kondoa study area I started my research by reviewing the existing literature on the rock paintings, archaeology and settlement history of Kondoa district. I then supplemented this with a review of archival records in the National Museum of Tanzania, National Archive of Tanzania, University of Dar es Salaam and the Kondoa District archive. The approval of a permit from the Antiquities Division and Kondoa District office allowed me to conduct field work in Kondoa. A Kondoa District Authority permit facilitated communication with the Village Executive Officer (VEO) in each village. The VEOs assisted in identifying persons/families using rock painting shelters for traditional ritual activities. The VEOs also introduced the research team to traditional practitioners, elders and other villagers. These introductions gave us the opportunity to explain our research objectives to the villagers. This ensured good co-operation between the research team and local people.

Field survey

The field survey was carried out in three phases; the first two from mid-January to late March 2010 and from late April to mid-July 2010, involved the surveying and recording of rock painting sites. The third phase was from August to early November 2010 and it involved visiting groups I expected to have special knowledge relevant to the rock paintings.

My survey and recording work on Kondoa rock painting sites was divided into five zones: North, South, East, West and Central. The North and Central zones are labelled **A** in **Figure 13, Page 100** and are located within the Kondoa World Heritage Site (**Figure 8, Page 75**). These zones were previously surveyed and documented by Mary Leakey (1983) and they cover an area of 2,336 square kilometres. Local people claim that some sites were missed in the Leakey survey. Surprisingly, little in the way of site reports and photographs survive from the Leakey survey. The redrawings survive in full and are at the Nairobi National Museum of Kenya. These were made only for the larger and more important sites. I therefore decided to record the entire Leakey sites. The task in all these zones was to visit and record all rock painting sites, hold conversations with local people and to explore local views about the authorship of the paintings. The villages I worked in included Kolo, Pahi, Masange, Mnenia, Kandaga, Kisese, Itololo, Kinyasi, Kiteo and Itundwi/Cheke. These villages are located within four wards: Pahi, Kolo, Kisese and Masange.

The West zone includes the area of Usandawe, Farkwa and River Bubu and is labelled **B** in **Figure 13, Page 100**. The area is rich in rock painting sites. Scholars have reported many sites (Fozzard 1966; Ten Raa 1974; Madokoro 1982; Lim 1992), but large sections of this area have not been systematically surveyed. The presence of thick vegetation and the tsetse fly infested Swaga Swaga Game Reserve made it difficult for the research team to cover the entire area. I worked along the Bubu River, particularly around the villages of Thawi Chini and Thawi Juu. I also surveyed the area along the Great North Road at Bukulu and Alagwa villages which form Thawi ward. This zone borders the North and Central Zones and it forms part of the Kondoa rock paintings World Heritage Site.

The East and South zones are labelled **C** in **Figure 13, Page 100** and are characterised by hills with fine rock shelters. To date, the area has not been surveyed by anyone except for some part

of Kingale ward where Fozzard (1959, 1966) conducted a survey. Local people indicated to me that rock paintings sites existed in the area. The intention was to conduct original survey work in these areas and see if the paintings were similar to those recorded in the other zones. In the East Zone, we surveyed hills around the villages of Mrijo and Goima while in the South Zone we worked in areas around the villages of Kingale and Iyoli, in Kingale ward, which is located along the Great North Road.

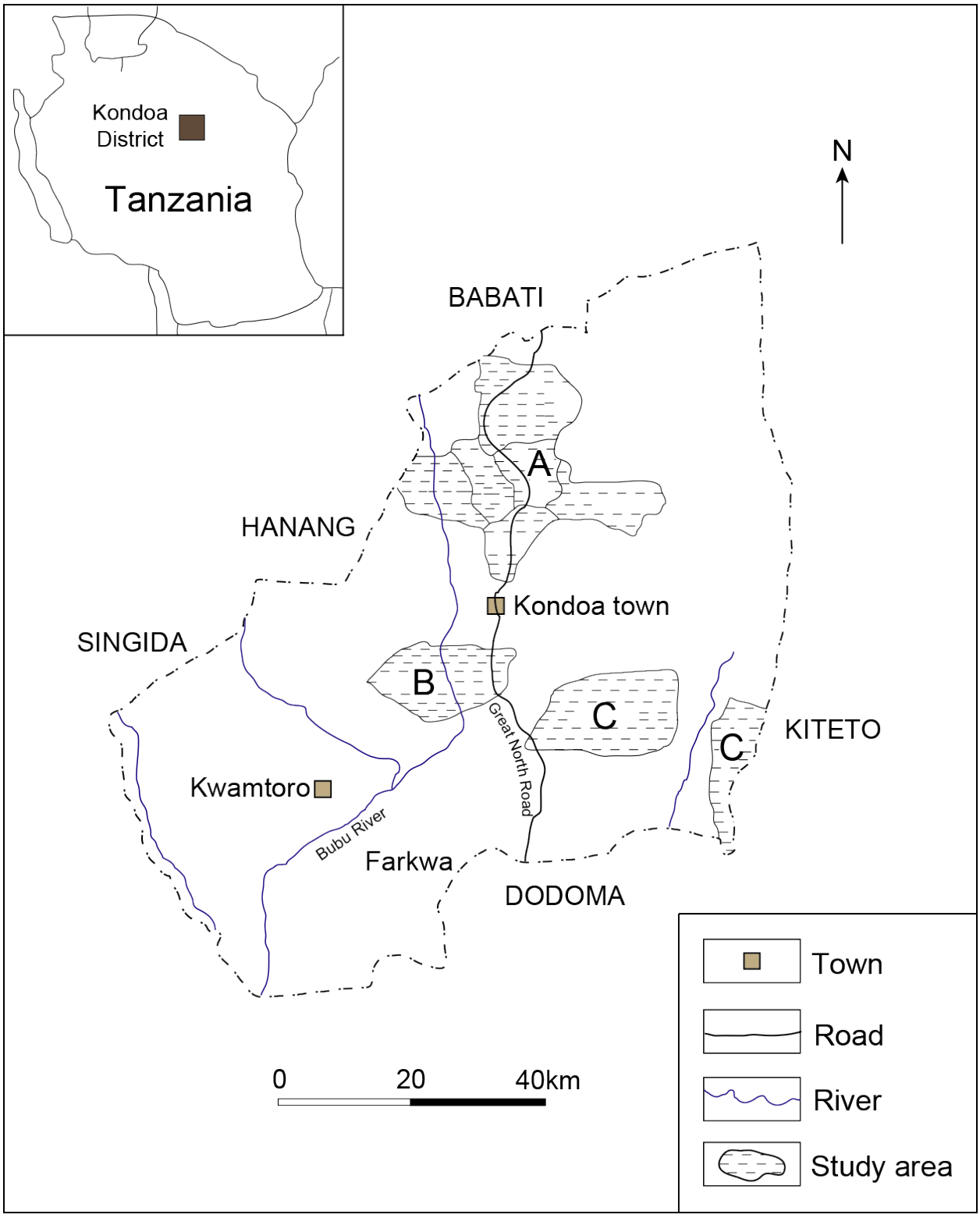


Figure 13: A map of Kondoa District showing study areas

The research team conducted systematic surveys to investigate the distribution of rock painting sites. To achieve this goal, I divided the research areas in square kilometres and systematically walked these as units.

Topographic maps of Kondoa were used to plan the survey routes. The survey work was completed using a six-member research team. Five members were local assistants from the villages where the field work was carried out. Among the five, one was a permanent assistant who worked with me during the entire research period. Four were occasional assistants chosen from each village in which we worked. The Site Manager of Kondoa Rock Art World Heritage Site, Mr. Remigius Chami was an occasional assistant up until his tragic death in a road accident in July 2010. The number of assistant researchers was not constant; sometimes I had a surplus of them. In some areas where I asked for four assistants, many more came with the hope of getting paid. This is inevitable in an area where the majority of citizens are small-scale mixed farmers with low income levels, earning less than one dollar a day. They hope to earn a little extra money by supplementing their daily life with temporary jobs. This was a challenge for me because my field budget only catered for five assistants. Besides this challenge, the field work was conducted well and I met all of my field research objectives.

Before starting the survey, I trained the assistants in how to conduct surveys and made them aware of rock painting conservation practices such as not touching the paintings, not creating fires/smoking and dust, or splashing water on the paintings. I arranged the assistants in a line approximately 50 metres from each other, with myself as the team leader guiding them from the middle. When an assistant found a rock shelter with paintings, they called the entire group to come and we recorded it.

Figure 14: Research team taking a break at one of the rock painting shelter, Mrijo village

As pointed out before, the aim of the survey was to locate the majority of sites in each study area. However, some sites may have been missed due to the presence of thick vegetation which hindered our survey in certain areas. The research team was also restricted by Kondoa District authorities while surveying Mwisanga hills, a place believed to be the first settlement of the Warangi people. These hills are located along the border between Busi and Haubi villages. Three weeks before the research team visited the area, two people from Busi (Maasai) were killed by people from Haubi over a land conflict. The conflict caused the District Authority in Kondoa together with village authority to stop all non-essential work in the area.

Site Recording

The recording methods were designed to meet the research needs of this project. Every site was recorded using a standard rock art recording form (**Appendix 1, Page 258**). The recording forms covered a range of details on the location and nature of the site as well as the rock paintings. I also recorded the modern use of the painting sites such as for habitation, living heritage and tourism as well as any visible archaeological artefacts at the site. During the survey, the relationship between landscape and the paintings was also considered and explored (Deacon 1988; Lim 1992; Ouzman 1998; Smith & Blundell 2004; Lenssen-Erz 2004; Taçon & Ouzman

2004). The aim was to investigate whether different styles of paintings were placed in different types of location and to use this as another clue to authorship.

Photos were taken with a Nikon digital camera (D300) at each site. The number of photos taken at each rock painting site was recorded on the recording form of that site. The camera used by the research team had a memory card of 8GB which was downloaded daily into a computer (laptop). On the computer, I created a folder for each site. The site name used was derived from the name of the place where the site was found. Local people with whom I worked assisted me in getting accurate names of the places. After completion of the survey I made folders grouping sites by their nearest village. I saved the general folder onto an external hard drive as a backup. After analysis, all of the images were transferred to the South African Rock Art Digital Archive (www.sarada.co.za) at the Rock Art Research Institute, University of Witwatersrand. Researchers and others can access the archive online. Another copy was given to the Antiquities Division, Ministry of Natural Resources and Tourism, Tanzania and 8 CD with rock painting 3175 images are attached to this thesis (see **Appendix 4, Page 271**).

Geographical Position System (GPS) coordinates **(see Appendix 3, Page 265**) were taken at all sites using a Garmin Etrex. GPS accuracy was an average of 5m. The coordinates were used to plot the sites onto a map of the study area and this showed how the paintings' sites are distributed on the landscape (**Figure 55, Page 153; Figure 56, Page 154**). A compass bearing (Grid system machine WGS 84) was also used for establishing the orientation of the painting sites.

Detailed notes were taken in field notebooks at every site. These include motif appearance, motif overlays, site appearance, current use and archaeological assemblages. In the process of recording the painting sites I also spent hours in the evenings and weekends chatting with villagers. The aim of this was to record details of local customs, beliefs, rituals and traditions that may have related in the past to rock painting production. This knowledge contributed to my understanding of the groups who previous researchers (e.g. Ten Raa 1971; Masao 1979) have proposed as possible artists. The exercise of making conversation with local people and trying to understand their social life is called ethnographic research. Ethnographic research has been used

(e.g. Ten Raa 1969a, b, c 1971; Lewis-Williams 1986; Lim 1992) to explore the meaning and motivation behind the paintings. In this study, it is used to explain the authorship.

Ethnographic research

Ethnographic research involves studying people and their culture. Data collection is often done through participant observation, interviews and questionnaires. I did not create a questionnaire or do formal interviews with people. This was because the study concentrated on recording rock painting images aimed at understanding how change through time. In the field, I simply chatted with people and asked general questions. The basic questions were about who made the paintings and why. I also asked whether the sites are still used by local people. I asked the research team the same questions. The aim of this exercise was to explore who could have made the rock paintings.

Ten Raa observed Wasandawe making art in the 1960s (1971) and the area where other groups, such as Waburunge and Warangi, live has fresh looking rock paintings, perhaps as little as 100 years old. But, no researcher has tried to use anything except Wasandawe ethnography to understand the paintings. There is thus good reason to have confidence that local ethnography maybe useful in searching for the authorship of the paintings and so local interviews seemed a wise addition to my rock art recording and analysis work.

The research team spent five days a week surveying and recording rock paintings in the hills. On Fridays and Sundays the team asked to rest for religious reasons. I used these two days to meet with local people especially traditional elders and elderly people of both genders to discuss what they knew about the paintings. During these meetings with elders I used Mary Leakey's book *'Africa's Vanishing Art*', and some painted images I had recorded during my survey, to provide a basis for discussions. Surprisingly, the majority of the elders held no opinions about who made the rock paintings. I held these discussions also during the evenings, when I visited individual households or evening gatherings. In Kondoa District, for instance, young and elderly men assemble in the evening from 5 to 8 pm for coffee. This occurs mostly in areas with large numbers of Muslims, and is a part of local culture. In their gatherings, they discuss issues such as politics, economics and social matters. I used these occasions to explore the history of the area

and its people. Some elders and traditional practitioners refused to disclose information, but others were willing to speak to me.

In conversations and discussions with local people, some proposed that the rock paintings were made by the Portuguese while others suggested the Maasai. One day, while I was having breakfast in one of the restaurants in Kondoa, the owner told me that he had heard from people that I was doing research on the history of caves with paintings. For him, a rock shelter is a cave. I agreed and started chatting with him. His name is Matepu Hassan from the Warangi ethnic group and he is 66 years old. He told me with confidence that the paintings were made by Maasai and Waburunge. Matepu thought that all the painting belonged to these two groups. It was my first time to hear someone linking paintings with these two groups, especially Waburunge. It was morning and I was on the way to my daily survey work. I arranged to meet him on a weekend (Sunday) for further discussion. We met as agreed and he was able to tell me the places where the Maasai and Waburunge live. I made arrangements to visit those places soon after completion of the survey. The survey work ended in mid-July 2010.

Completion of the survey gave me the opportunity to return to Dar es Salaam to conduct a preliminary analysis and typology of my data. In these exercises I checked all photographs taken in the field and realized that there were distinct patterns in choices of subject matter, manner of depiction and colour used (Masao 1979; Leakey 1983; Anati 1986; Mturi 1998). My first thought was that the differences probably reflected different rock painting traditions by different groups who have occupied Kondoa in the past. Some of the motifs I had recorded were similar to those that other scholars had tied to particular groups of hunter-gatherers, pastoralists and Bantu language-speakers (Masao 1979; Leakey 1983; Anati 1986; Smith 1995; Lim 1992; Mturi 1998). But, the patterns my detailed analysis revealed were more complex, it was difficult to group the paintings into simple ‘styles’ and to pin one to each group.

From this preliminary analysis I decided to go back to Kondoa to conduct oral tradition research and to find out which elements in the paintings could be tied to particular groups. Moreover, as Smith (1995:14) noted ‘to go to the ethnography before studying the rock art would waste more time than unnecessary quantification of artistic features’. This preliminary analysis gave me the

opportunity to study the paintings and to recognise patterns in the paintings before going back to observe traditional rituals and practices among the groups.

After becoming familiar with the rock paintings, I went to the field for my oral tradition research. This was the third phase of my fieldwork. It started in the middle of August 2010 and ended in early November of the same year. During this third phase I was able to attend a Wasandawe *simbó* curing dance ceremony, a Waburunge boys' circumcision ceremony and to chat with many local people around Kondoa District. Not all of my oral tradition enquiries were directly relevant to this study. But, I wanted to cast my net a wide as possible to see if I could recognise features in the paintings that were specific to particular groups. Few people expressed opinions on the authorship of the paintings (Smith 1995). I realized that the majority of the current groups in Kondoa are broadly unaware even of the existence of the paintings. Some tried to provide information but acknowledged that they were guessing, while others repeated things they had been told in school or read in books. While aspects of my oral tradition research threw up useful pointers such as the identification of objects and postures seen in the paintings, I had to return to a detailed analysis of the paintings themselves and their distribution in the landscape for a more through consideration of authorship.

Data analysis

The data analysis was divided into two parts: an analysis of the sites and an analysis of the rock paintings. My site analysis considered the 204 sites (Chapter 5) I had recorded and involved examining the site and its surrounding environment. Specifically my site analysis was categorized into:

- Site location,
- Site elevation,
- Site type,
- Modern use of the site,
- Dimension of the site,
- Modern site vegetation, and
- Associated archaeological material around the site.

My analysis of these categories (not all) contributed to my understanding of authorship. For instance, the hunter-gatherers of Kondoa often occupied large shelters on the escarpment edge in the hills (Ten Raa 1971; Lim 1992). Emmanuel Kessy also noted that most farmer settlements were on the lower and middle of hill slopes on the edge of the escarpment (2005). Pastoralist groups have dominantly occupied the lower-lying plains area (Bagshawe 1925). These differences in population placement allowed me to interpret my observed rock painting distribution (Chapter 5 & 6 for details). I also recognised that some of my categories could not help to answer my research question and therefore I abandoned them. This included 'modern site vegetation'. For details of my site analysis see Chapter 5.

Motifs

My motif analysis was based on three variables: shape, colour and method (see Chapter 5 for details). For the shape category I looked at the fundamental way each motif had been formed by the artist. I broke shape into three main categories and gave each its own number series: Anthropomorphic (1000s), Zoomorphic (2000s) and geometric designs (3000s). Colour was determined based on basic pigment colour: White, Red, Yellow and Black. In the colour category I also looked at how the colour was filled within the motif: Outline filled, Line filled, Dot filled and Solid filled. The dot filled figures were few and was removed from my analysis.

Variations in colour among the white and red pigments were noted. The white pigments seem to bleach over time. The white pigments are also transitory, not surviving long when exposed to sun, water or wind. These factors all caused the white pigment shift to an off-white, brown appearance, or to become faint. For this reason I ignored white pigment variation and analysed it as a single white colour. Similarly, the red pigments appeared to be more stable (i.e. to have suffered less deterioration) than the white, they also show colour variations, ranging from brownish to claret red. It was difficult to differentiate between 'pure' red and 'claret' red using the naked eye and since pure red and claret red shapes were always found together, sharing a similar method of depiction, both were treated as 'red'. The application of more than one colour (bichrome) was rare and not considered in my colour analysis. Method was divided into two categories: fineline and finger paintings.

Once each image had been categorized by shape, colour and method, I then analysed which categories were found together repeatedly. The data were processed using Microsoft Windows 10 Excel and mathematical permutation method was used in grouping the images. My first tabulation produced 3175 variables at 204 sites and proved too complex to be managed. To make analysis easier and more manageable, I combined some variables (colour, shape, method) together. For instance, I put shape (e.g. 2001), colour (e.g. Red-R) and method (e.g. Solid-S) together (e.g. 2001RS), (see **appendix 2, Page 260**). This allowed me to determine more easily the number of each shape at each site for further analysis. I also decided to reduce the number of motifs. All motifs which appeared only once or very infrequently were eliminated. Shapes which were similar and shared colour and methods of depiction and which often occurred together at sites were joined together. For instance, zoomorphic 2001 to 2010 were grouped together forming shape number 2001. This approach to grouping was also applied to human and geometric figures (**Figure 49, Page 140 & Appendix 2**). All sites with less than three paintings were omitted. The process of consolidating the data for mathematical analysis ended with the analysis of 52 shapes (**Figure 50, Page 141)** and 159 sites**.**

Shapes in black and internal dots were also eliminated. These shapes were few and did not co-occur with other shapes. Only white, red and yellow were considered in further analysis. Some rare shapes omitted in the analysis that had unique characteristics were later considered during the interpretation of the rock painting traditions. Examples include shapes 2015, 2016 and 2017 and other shapes with black colour (Chapter 5).

After the completion of my tabulations the motifs were sorted by their repeated association at individual sites. Mathematical application (permutation) created an adjacency matrix of the shapes (Chapter 5, **Figure 52, Page 143**) that was used for finding permutations that clustered images according to the strength of association. Motif groups were then formulated based on repeated association of shapes that occur together at sites. Generally the motifs in each group were found to share similar characteristics such as colour and manner of depiction to other shapes in the group. In a few cases obviously incongruous image types clustered together either suggesting contact among the artists or coincidental clustering. These instances were rare and were considered separately. The relation between groups of motifs is shown in a connectivity

diagram (**Figure 54, Page 152)**. Then the sites within each group were computed together with GPS coordinates to find their overall distribution within the landscape **(Figure 55, Page 153**). Detail of the motif analysis procedures and its outcome are given in Chapter 5.

These statistical analysis techniques have proved successful in lithic and ceramic analysis for establishing chronological sequences (e.g. Brainerd 1951:303; Robinson 1951:293–4; Belous 1953:341–2; Spaulding 1953:305–6; Tugby 1958:25). However, we should note that my analysis is slightly different from these lithic and ceramic analyses, where chronological sequences were obtained on the basis of closeness of the artefacts arrayed in the matrix. In my study, traditions and authorship will be formed by examining the association of method, colour, shape at many sites and then an analysis of the distribution of the image clusters through space.

I went further in this analysis by looking at the superposition of motifs as a means of trying to find out the sequence age of the paintings (**Table 9, Page 157**). I examined the basis on which one shape was over another. The colour and method of depiction of each shape was also considered. For instance, 2001WS over 2002RF means that shape 2001 depicted in solid white was found on the same shelter wall overlying shape 2002 drawn in red fineline. I therefore considered 2001WS to be younger and 2002RF to be older.

In 1970s, scholars working in southern Africa used statistical analysis to interpret rock art (e.g. Vinnicombe 1976; Pager 1976; Lewis-Williams 1979). Lewis-Williams proposed that the results of this work failed to provide sound explanations in rock art studies (1979:212–3). This may well be true, but my study does seek to use quantification to consider meaning. I use quantification to sort a complex body of rock paintings into traditions. I then seek to assign authorship to each tradition identified. This process will then allow for the application of relevant ethnographies to each body of paintings. My quantification work is therefore an essential precursor to future studies of meaning or other related studies.

Cultural tradition sequence formulation

Dividing rock paintings into cultural tradition sequences required me to understand connections between the three variables: colour, shape and method, as well as the location of the groups

within the landscape of the study area. It was expected that each tradition/group will be distinguished from others through examination of these three variables, but overlapping of these variables into other traditions will not affect my interpretation. A group will be established based on how often these variables occur in associated contexts. The tabulation and grouping of motifs will occur in the final stage of the analysis by sorting variables and analysing their association. When all associated variables have been examined, then paintings of a tradition sequence will be precisely defined.

Additionally, superposition also guided me in the establishment of the cultural tradition sequences. Superpositions demand that figures appearing on top of others are younger than the ones below (Smith 1995). Where superposition occurred in conjunction with marked differences in method of depiction, I separated the images into different traditions. But, not all superposition need necessarily represent the overlay of different traditions; there can be superpositioning within a tradition. In order to attempt to address this issue, I combined evidence from the rock art sites with archaeological evidence and local views, gaining knowledge related to settlement distribution on the landscape in order to create more secure definitions of the traditions of this area.

Authorship of the paintings

The next step after the establishment of traditions was to consider the authorship of each tradition. To do this I used a multistranded method. First I looked at the overall location and distribution of the sites belonging to each tradition using my own data and published data from further field beyond my study areas. Each of the four language groups living in Kondoa has a distinctive historic distribution. I therefore expected that the distribution of each rock painting tradition would provide a strong indication of an affinity with one or other of the language groups (Chapter 2). In saying this, I do not deny historical complexity: all groups have migrated from one place to another for various reasons at various times. This is known from archaeological findings (e.g. Sutton 1968b; Lane 2009) and ethnographic research (e.g. Ten Raa 1969a, b, c, d, 1971, 1981; Östberg 1986; Lim 1992). The Villagisation policy in Tanzania at the end of 1960s and early 1970s resulted in groups leaving their original places and being moved to new areas near townships. In my attribution of authorship I therefore use archaeological evidence, linguistic, genetic, historical evidence (Chapter 2) and oral traditions to understand

pre-colonial settlement patterns. Additionally, I considered site orientation (North, South, East and West). Specific directions have meaning in some societies. For instance, a western orientation is associated with many Wasandawe rituals (Ten Raa 1981).

Drawing on my own ethnographic research, the subject matter of the paintings also guided me. For instance, it was clear that a concentration on cattle images would be more likely to indicate a pastoralist authorship, whereas the regular depiction of iron implements would probably indicate that the art was made by Bantu language-speakers. Links between the subject matter and known traditions, rituals and beliefs also helped to give a strong indication of authorship. Comparative analyses with other areas can also prove useful, for example most African hunter-gatherer rock art is fineline and dominantly in red, whereas most Bantu language-speaker rock art is finger painted and dominantly white. The known antiquity of groups was also helpful: for example, very old widespread and faded art in stable pigments are more likely to be hunter-gatherer. Lastly, the published ethnographies of the area (e.g. Ten Raa 1971; Lim 1992) were used. Using these multiple-strands of evidence in combination I built up a strong case for the authorship of each paintings tradition (Chapter 6). My detailed analysis of the traditions and authorship will be presented in Chapters 5 & 6 respectively.

CHAPTER FIVE

Field work and analysis

Introduction

This chapter presents the outcomes of my fieldwork and data analysis. For a detailed explanation of my methods of data collection and analysis, see Chapter 4. A total of 204 sites **(Appendix 3**) were documented and 3,175 (**Appendix 2**) figures recorded from five study areas. 145 sites were recorded in the North and Central study areas while 38 sites were recorded in the West and 21 sites in the South and East. A site here refers to a painted rock surface. Following the Antiquities Division (2004a) estimate of 300–400 sites situated in the Kondoa area, the 204 sites I recorded account for approximately 50 per cent of the total sites in the district. This percentage is at estament to the dimensions of the study area, and provides confidence in the representativeness of the data presented in this project.

All the sites visited are listed in **Appendix 3**, by site name, village and district. Village here refers to a place where a small group of people live in a rural area and whose main activities are agriculture and livestock farming while district refers to an official political administrative division. The colour of the paintings at each site is also shown in the table. Colour refers to the pigments used in the making of the paintings and is a physical trait useful for differentiating sites; in this study area, 100 (49.02%) sites used red, 74 (36.28%) sites used white, 22 (10.78%) sites contain both white and red, 4 (1.96%) used red and yellow, 2 (0.98%) sites used black and white, 1 (0.49%) site used white and yellow and 1 (0.49%) site used red, yellow and white.

These sites were recorded in rock shelters throughout the Kondoa District. No site was found in a deep cave and only one site was found on an exposed rock boulder. Though many of the sites are well protected from natural factors such as sun, water and wind, others are not. However, the fact that not all protected shelters contain painted images gives the impression that more complex factors influenced the artists' choice of shelter. Although the majority (95%) of the painted images are found in well protected sites, most were still affected by some natural deterioration factors as well as by ongoing human activity such as graffiti, deforestation, grazing, illegal

excavations and farming. Both human and natural deterioration factors made it difficult to recognise some of the painted shapes.

As well as the variations in colour, there are also major differences in the shapes used and their method of depiction. Even on cursory inspection some patterns in this variability are evident. But, the complexity is bewildering and in order to gain a more thorough understanding of the patterns in the paintings (and to test the reality of the cursorily evident patterns), I applied statistical analysis, examining the relationship between three variables - shape, colour and method of depiction. These are set out clearly in the analysis below. My aim was to explore whether motifs clustered according to repeated association, and whether this would allow me to establish painting sequences and authorship.

Methods of depiction

There is great variation in the method of depiction of the shapes. This is determined by how the colours were applied and filled within the shape. This variation can be grouped into two broad methods: fineline and finger paintings. Fineline paintings were made using an application implement, probably a brush or a stick. Finger paintings were made directly by applying pigment using the hand. Within these methods, however, there are techniques variations (e.g. outline/filled).

The fineline method uses two techniques: (a) red outline (RF/L), covering 61.5% of the total fineline images without any internal fill and (b) red solid filled (RS) or a range of other partial fill types, which cover 38.5% of the fineline images. Both techniques were used for human and animal shapes, but only the outline technique was used for geometric shapes.

Figure 15: An example of a fineline human motif, Thawi Chini

Figure 16: An example of solid filled fineline elephant motifs, Mlimani-Pahi

The finger painting method was used for the depiction of human and geometric designs. Wild animals were only occasionally made using this method. White covered 94% and was the

dominant colour used in this method, with other colours (red 3%, yellow 2% , black 0.97% and, white and red 0.03%) appearing only rarely. Based on shape similarities, this method was divided into the white finger line method (F/B), covering 75% of the total images and which involves only the application of a finger outline without any filling. Finger solid (SW, YS, BS) methods were paintings made using the finger and filled with various solid colour. For instance, white fingerline paintings (WF/B), white finger solid (WS), yellow fingerline (YF/B), yellow finger solid (YS) and red fingerline (RF/B). Where the finger painted shapes were filled with solid colour, the pigment application often looked very fresh. Scholars such as Masao (1979; Leakey 1983:31; Anati 1986:55) have suggested the fineline painted method is associated with early paintings while the finger paintings are more recent.

Figure 17: An example of fingerline motifs, Lusangi-Pahi

Figure 18: An example of finger solid motifs, Lusangi-Pahi

Colour pigments

White colour motifs

The white images were more widely spread across the landscape, covering 58.58% (**Figure 26, Page 121**) and were made from white kaolin clay. Archaeological research has shown the presence of white kaolin around the rock painting sites (Kessy 2005). Additionally, oral traditions collected from Warangi group members indicate that some white motifs were also made with python droppings.

Large numbers of white motifs covering 65% were finger painted and executed in rough lumpy pigments. Some of the motifs, especially animals covering 34%, were filled with solid white and appeared crude. Some wild animals such as giraffe were drawn with white fineline covering 1% (**Figure 19, Page 117**). Geometric figures were the most frequently 87.4 % executed in white, followed by human figures 9.4%. Wild animals and domesticated animals were 3.2% in white. Some of the white figures were superimposed over red (**Figure 57, Page 156)**. White paintings were not evenly distributed, but were mainly concentrated in the lower and middle part of the Kondoa hills at the villages of Pahi, Kandaga, Kiteo and Mrijo (**Figure 56, Page 154**).

Figure 19: An example of white outline animals (giraffe), Alagwa

Figure 20: An example of finger solid white motifs, Markazi-Pahi

Red colour motifs

Red motifs are second to white, covering 31.72% (**Figure 26, Page 121**) of the total images. The red colour is made from red ochre; archaeological work at Kondoa rock painting sites has revealed extensive evidence of red ochre materials in the deposit (Inskeep 1962; Masao 1979; Leakey 1983; Kessy 2005).

Large numbers of red motifs were executed using the fineline method (**Figure 21**). Wild animals are the most commonly 51.3% drawn forms, followed by human figures 30.8%. Geometric motifs (circles, ladders and dots) are present covering 17.9% (**Figure 45, Page 137**). The red motifs are more frequently found at higher elevations on the hills (such as those at Pahi and Kolo) than other figures. Some sites are also situated at lower elevations along water courses. The Thawi ward sites provide good examples of lower-elevation sites, located near the River Bubu.

Figure 21: Examples of red fineline figures, Thawi Juu

Red and white motifs

The red and white figures (**Figure 22 & 23, Page 119**) seem to be variants upon standard types of purely white or purely red images. Where white is used in red fineline figures, it is typically used as a fill colour. It is possible that many red fineline figures were originally red and white, but that the white has not survived. The surviving bichrome images all come from well protected sites and include geometric designs and wild animals, covering 0.07% (**Figure 26, Page 121**) of the total images.

Figure 22: An example of red and white finger painted figures, Lusangi-Pahi

Figure 23: Fineline eland motif (left) executed in red outline and white fill, Lusangi-Pahi

Yellow motifs

The use of yellow pigment (**Figure 24, Page 120**) is rare in Kondoa District, covering just 8.09% (**Figure 26, Page 121**) of the total images. The few figures that were found in yellow include those of humans, animals and geometric designs. The shapes were executed by both finger and fineline, and most were solid filled. It is not apparent exactly where this pigment comes from.

Some local people suggested to me that the artists may have obtained yellow ochre from certain erosion gullys and river banks.

Figure 24: An example of yellow motifs, Lusangi-Pahi

Black motifs

Like yellow motifs, black paintings are also very scarce (**Figure 25, Page 121**), covering just 1.54% (**Figure 26, Page 121**) of the paintings. It is not clear what material was used to make the black colour, but charcoal is a likely candidate. At Usandawe, Lim (1992, 1994, 1996) witnessed the making of twin boards drawn using black, white and red. The black pigment was made from a soot pot. In Zambia, Smith (1995) found paintings drawn in black, suggesting that these were produced using charcoal. Where present, the black motifs in Kondoa were made using the finger method. Though it is not apparent what material was used for the execution of black motifs, this study suggests charcoal was used, similar to Usandawe and Zambia. The black motifs are always found together with white paintings and are usually located at the foot of the hills.

Figure 25: An example of a black motif, Kandaga

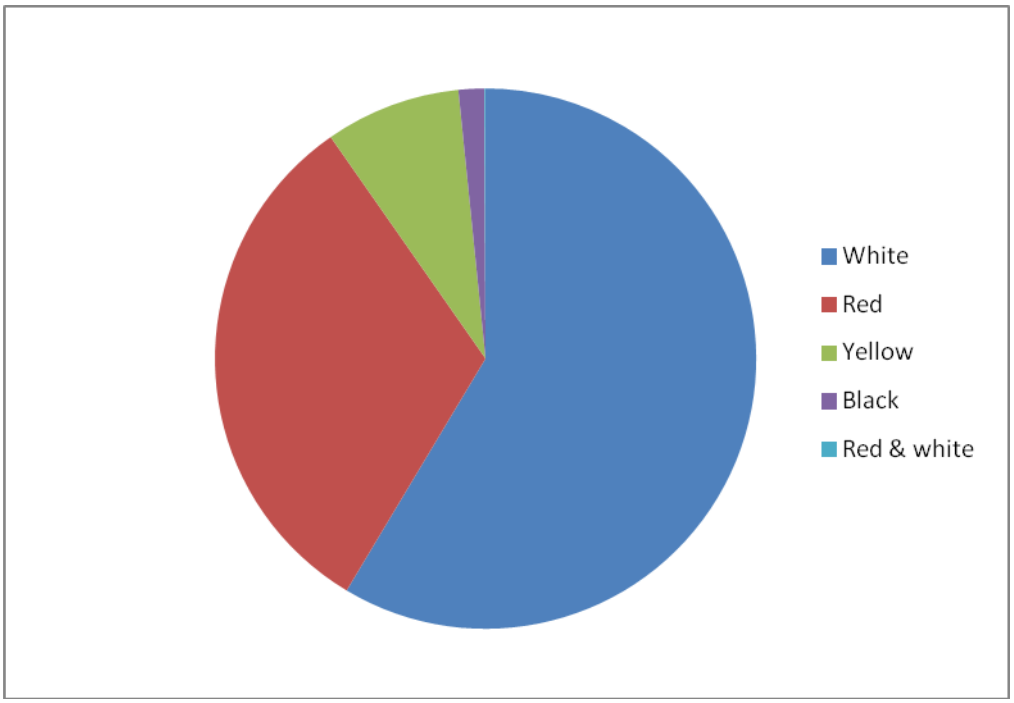


Figure 26: Percentage of motifs according to pigment colours

The significance of colour

The colour of pigment has been used by scholars to predict the age and authorship of the Kondoa rock paintings. For instance, red paintings have been placed as early paintings, probably made by hunter-gatherers. White paintings are thought to be recent, belonging to farmer groups (Masao 1979; Leakey 1983:31; Anati 1986:55). Most scholars (e.g. Masao 1979; Leakey 1983) were silent about the black paintings. But, Anati (1986:52) suggested that the shapes belonged to pastoral groups and are older than the white paintings. Before my final analysis, it is difficult to agree or disagree with previous scholars. My analysis, based on association, will be the first rigorous independent assessment of the assumed ages and authorship of the paintings in Kondoa.

Shape typology

A shape typology was constructed with the aim of categorising the painted shapes types. My literature review on the Kondoa rock paintings (e.g. Masao 1979; Leakey 1983; Anati 1986), and my personal experiences working in the sites that contain them, assisted me to plan out a shape typology. I divided the paintings into three main types of shape: anthropomorphic, zoomorphic and geometric designs. Of these three categories, anthropomorphic designs were the most common (1,409 images or 44.4% of the total), followed by geometrics (1,119 images or 35.2% of the total), and then zoomorphic imagery (647 images or 20.4% of total). This tripartite division formed the basis of my data collection sheets, though in the field this was modified to take into account some unusual shapes that had not been recorded before. I examined these missing shapes and added them to my typology. This typology formed the basis of my shape analysis.

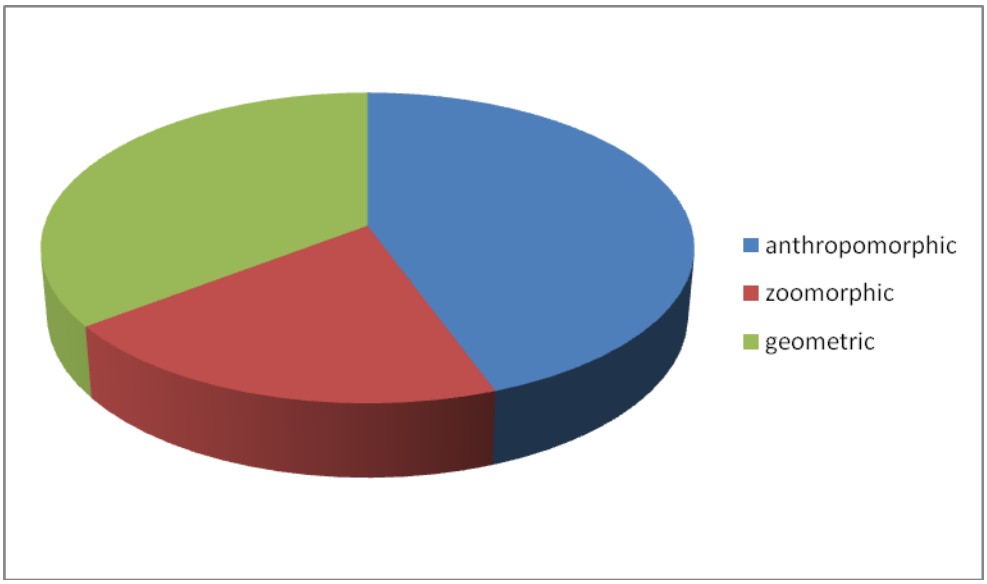


Figure 27: Painting occurrences based on shape typology

Anthropomorphic shape typology

The anthropomorphic shapes divided fairly neatly into two groups; red fineline and white finger paintings. Each group has its own characteristic features. To understand the typology of each group and its subdivision, I considered how shapes showed repeated association.

Red fineline human figures shapes included 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1015 and 1023 (**Figure 38, Page 129**). Shape 1023 (**Figure 72, Page 183**) was not in my previous recording sheet and was added after it showed repeated association and method of depiction with the other human fineline shapes. The human shape design seems to refer to the general conformity of the image in terms of posture, presence and attitudes of limbs and so on. This creates shape categories such as 'bending forward' (shape 1005 see also **Figure 31, Page 125**), 'collapsed' (shape 1006 see also **Figure 71, Page 182**), 'raising up hand' (shape 1001 see also **Figure 69, Page 181**), and 'down hand' (shape 1002, **Figure 29, Page 124)**; see **Figure 38, Page 129** for a full list. These red fineline human figures show variation in terms of their head shapes, and in their association with a range of material culture items **(Figure 39, Page 129)**: for instance**,** shape 1003 has head design F **(Figure 30, Page 125)**. Similarly, the human figure (**Figure 21, Page 118)** at Thawi Juu holds material culture item I (**Figure 39, Page 129** for details). Although conforming generally to this suite of variation, some shapes are shown carrying unknown objects on their heads - see shape 1007 (**Figure 32, Page 125**).

Figure 28: An example of shape 1001, Kolo B1

Figure 29: An example of shape 1002, Thawi Chini

Figure 30: An example of shape 1003, Kolo B 2

Figure 31: An example of shape 1005, Thawi Chini

Figure 32: An example of shape 1007, Masange

Humans made with white finger paintings also display variations in terms of their shape (**Figure 38, Page 129**). Their heads are always round although they may be headless (1019). However, shape 1019 (**Figure 36, Page 127**) can be described as an axe-head or an arrowhead. It always appears together in the same location (shelters) with human shapes and I am convinced that this shape should be grouped with human shapes depicted in different design. Other shapes display round heads with embellishments such as dots (shape 1011, **Figure 46, Page 137)** or lines (shape 1012, **Figure 46**). Arms are thin and outstretched sideways, as are the legs, which form a spread-eagled design (**Figure 17, Page 115**). Some have arms, legs and toes (shape 1013 & 1014, see **Figure 37, Page 128**) while others lack arms and legs (shape 1019, **Figure 36, Page 127**). Between the arms and legs, some shapes have a big 'stomach' akin to pregnant women (**Figure 37, Page 128)**. Some shapes were depicted with many lines with roud head (**Figure 35, Page 127)** across the body (shape 1020, 1021 & 1022), or with heads pointing downwards (shape 1021).

A further category of anthropomorphic image is found in both red fineline and white finger paintings, in the form of human hand depictions (shape 1024, **Figure 33 & 34**). In most cases these shapes occur together in different locations but are more dominant at Pahi hill.

Figure 33: An example red fineline hand shape 1024, Itololo

Figure 34: An example of white finger painted shape 1024, Markazi-Pahi

Some white finger painted shapes were not present in my initial recording sheet and were added after their repeated occurrence became apparent: they were then given unique codes within the group numbers. These shapes include 1016, 1017, 1018, 1019, 1020, 1021, 1022 & 1024.

Figure 35: An example of shape 1020, Markazi-Pahi

Figure 36: An example of shape 1013 and 1019, Markazi- Pahi

Figure 37: An example of shape 1013 and 1014, Markazi-Pahi

Generally, there are some differences in the features observed in the human shapes of the fineline and finger methods. White finger painted anthropomorphic shapes are characterised by round heads or are headless. They also tend to have stomachs, toes and lines surrounding the body. Yellow/white/red pigment was used in the depiction of finger painted humans while by contrast, fineline shapes are intricately drawn and easily recognisable. Many of the red fineline designs have features absent in the white finger paintings: elongated, bent postures, arms held pointing up and/or down, and figures carrying material items (notably weapons). Heads are always executed in a distinctive style, either round, dotted, solid filled, or line filled showing rectangular masks.

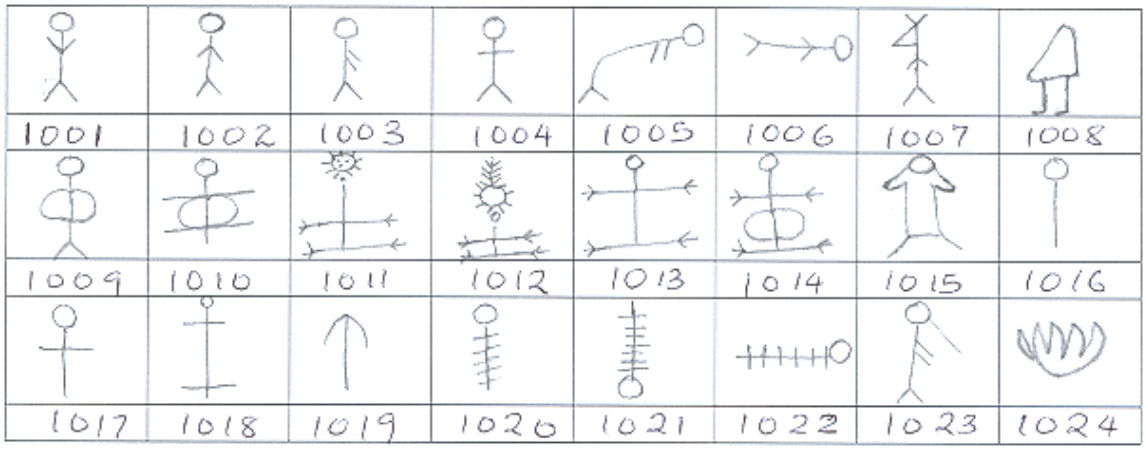


Figure 38: Anthropomorphic typology shapes

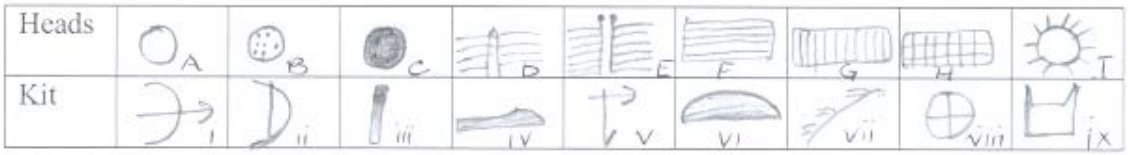


Figure 39: Anthropomorphic head and material culture items

Table 6: Analysis of Anthropomorphic head and material culture items

Shape	A	B	C	D	E	F	G	H	I	I	Ii	Iii	Iv	V	Vi	Vii
1001	1		1	1		2										
1002	98	2	36	21	7	10	9	4		2		5	2		5	1
1003	12		27	11		14					2	8	1	1	3	1
1004	5						1					1				
1005	5		3				1									
1006	1															
1007	3															
1008	2			1												
1009	67											1				
1010																
1011																
1012																
1013	12	4														
1014																
1015	1															
1016	22		27	2		2		1	**1**							
1017	26															
1018	36															
1019																
1020	27	5						5								
2021	3							1								
2022	16															
2023	2															
2024																

Zoomorphic typology

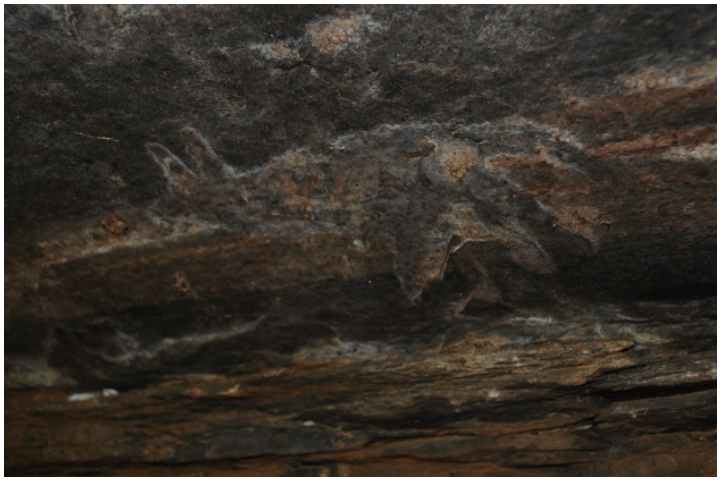
This typology includes wild and domesticated animals, snakes and birds. Some zoomorphic shapes were difficult to identify because of fading and damage. Identification of zoomorphic shapes was done using published animal identification guides **(**e.g.**Figure 40, Page 131**)** and my data collection sheet was prepared before field work.

Figure 40: A poster showing animals found in Tanzania's Game Reserves and National Parks

Two techniques were employed to help identify faded or damaged imagery and to discriminate between similar animal shapes. Firstly, based on comparison with more complete or better preserved imagery, it was possible to identify the species and assign the image a category even if all that remained was a leg or head of the animal shape. Secondly, local people who worked with me also assisted with the recognition of some of the more cryptic animal shapes. Shape numbers 2026 to 2029 (**Figure 41, Page 131–133)** was not on the initial recording sheet and were added after they were recognised in the field.

a: Shape 2026, Mrijo Juu

b: Shape 2027, Thawi Chini



c: Shape 2028, Kandaga

d: Shape 2029, Lusangi

Figure 41: Examples of zoomorphic shapes added in the field

The internal sections of red fineline animal shapes were completed using a range of different fill types: horizontal straight lines, vertical straight lines, zigzag lines, dots, grids and solid filled colour. Wild animals were predominantly painted with red fineline followed by white and yellow fineline. Those animals that were finger painted in black were mostly domesticated animals (**Figure 44, Page 134)** and a few wild animals **(Figure 43, Page 134)**. Black animals were almost all cow shapes (shape 2015, 2016, 2017, **Figure 44**), with a variety of different types of horns depicted. Other zoomorphic shapes include snakes executed in fineline (**Figure 42**). Overall, going into the field with clearly defined shape typology proved to be a useful and successful method for recording and identifying zoomorphic figures.

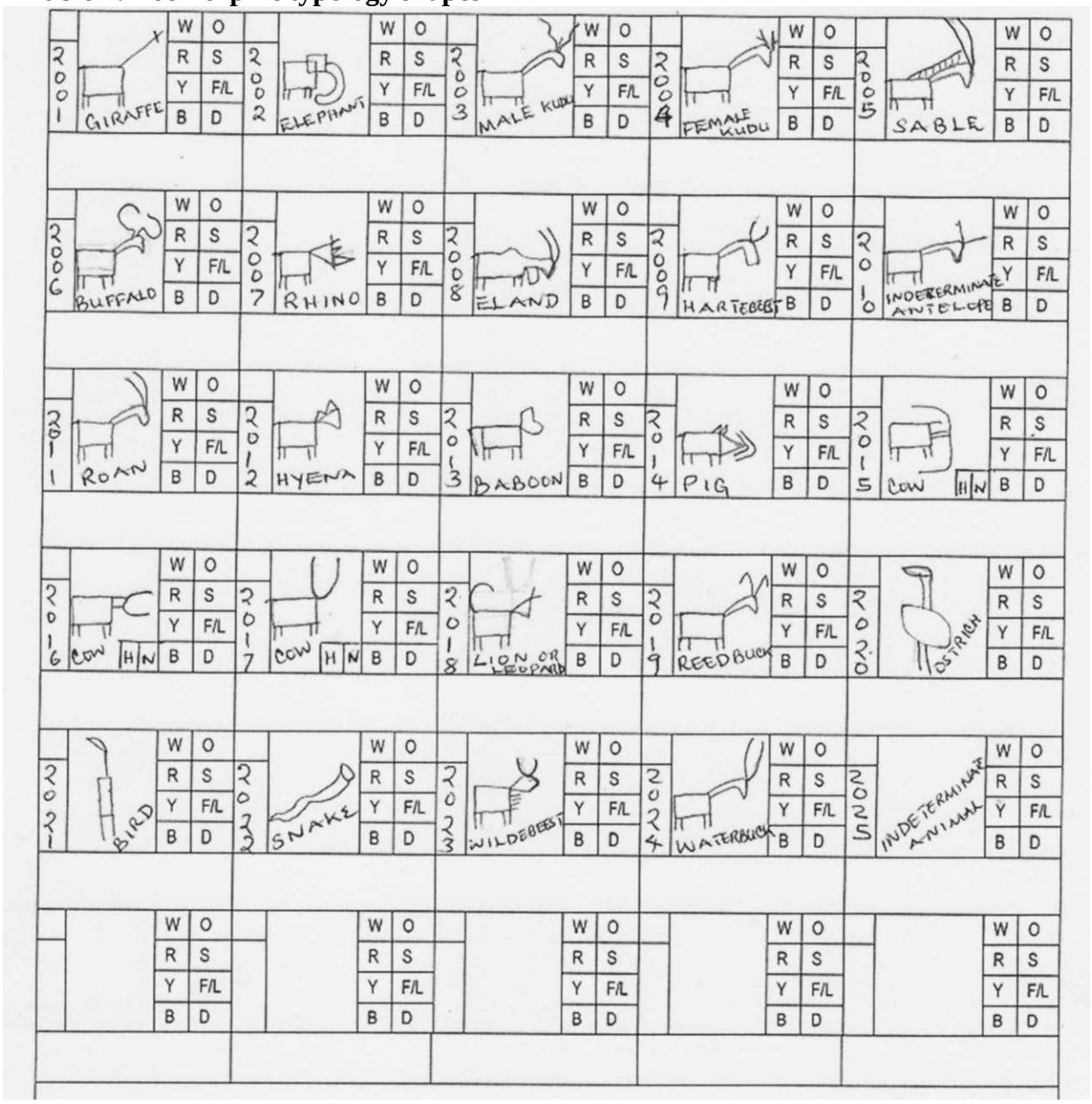
a: Thawi Chini **b:Pahi**

Figure 42: Examples of red zoomorphic fineline images (rhino, left; snake right) filled with dots and lines

Figure 43: An example of a white finger painted zoomorphic motif (giraffe), Kisese

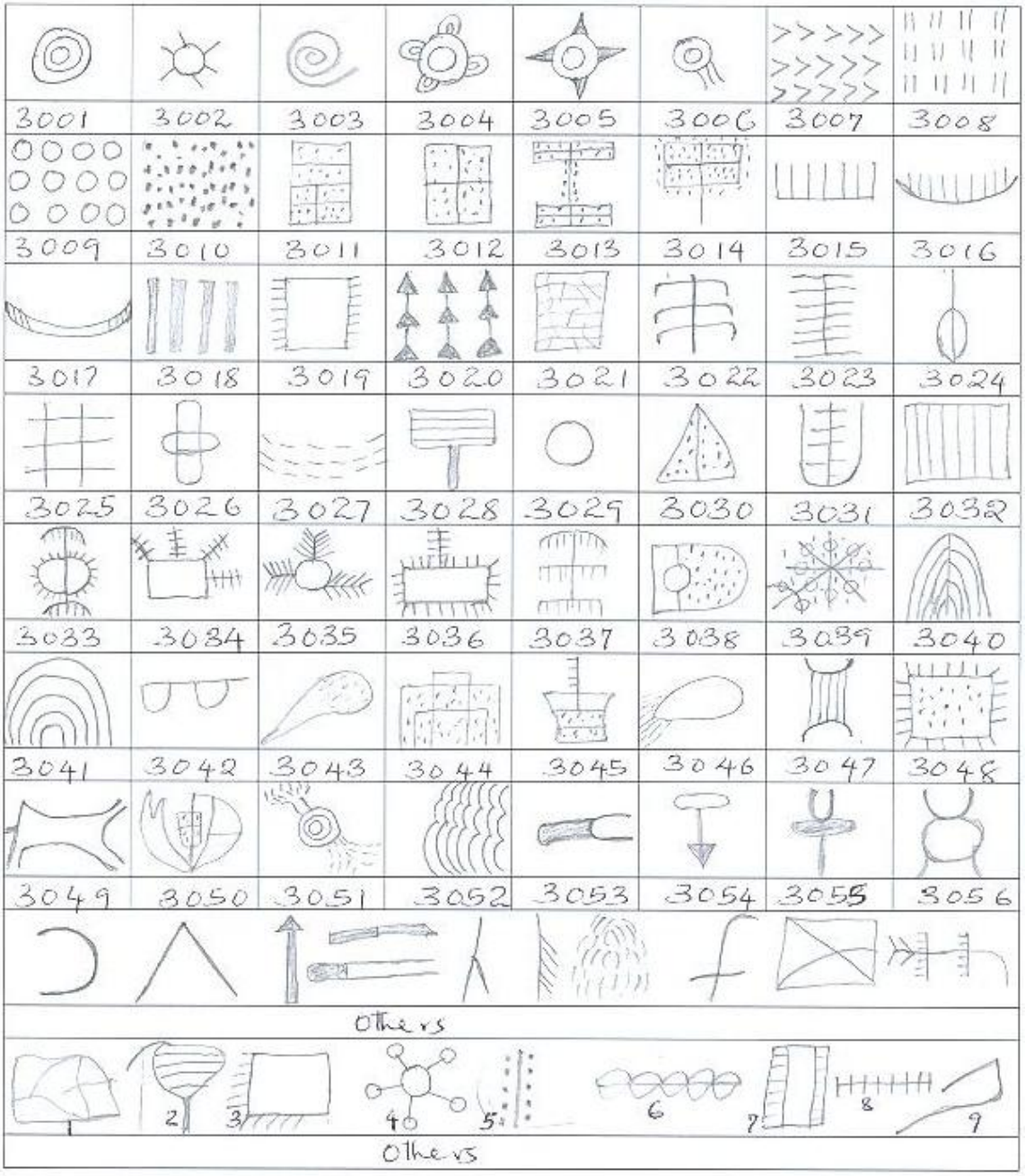
Figure 44: An example of black zoomorphic motifs (cattle), Lusangi-Pahi

Table 7: Zoomorphic typology shapes



Geometric typology designs

Table 8: Geometric typology shapes



In the case of geometric imagery, defining shape type was challenging; furthermore, figures were often crudely painted and faded, and this made it hard to identify them in the field. Some shelters presented 'amorphous' (shapes which were not easy to recognise and not confirming to any pre-established imagery) geometric images, which I attempted to incorporate within my recording sheet shapes. 'Amorphous' (**Figure 62c, Page 163)** geometrics were associated either with a

method which showed poor depiction or with deterioration; as such, some of these were only photographed and not recorded for analysis. The fineline shapes on my recorded sheet were easily recognised and recorded (**Figure 47, Page 138)**. Some shapes not present on the recording sheet were added in the course of the fieldwork; shape numbers 3030 to 3056 (**Table 8, Page 136,** see also **Figure 45, 46, 47a & 62, Page 164**) were added in the field after recognition. Some shapes were easy to recognise, but occurred so infrequently that they were not assigned specific numbers; these shapes are presented on the sheet as 'others' (**Table 8**; see also **Figure 48a, Page 139**). The delineation and identification of these shapes helped clarify the diversity of the geometric designs. Geometrics were commonly executed in white finger painting, though a few red and yellow designs were also present. Red fineline geometric shapes were rare.

Figure 45: An example of shape 3033, Markazi-Pahi

Figure 46: Different geometric motifs, Markazi-Pahi

a: Itololo

b: Thawi Chini

Figure 47: Examples of geometric motifs made by red fineline method

a: Kandaga **b: Markazi-Pahi**

Figure 48: Example of geometric motif drawn with finger painted method

Motifs tabulation and grouping

In the beginning of this chapter, I indicated that 204 sites were recorded and 3175 (**Appendix 2**) figures were identified. This produced a huge and unmanageable data set. I thus reduced it (Chapter 4) to allow for the application of mathematical analysis. The data set was simplified by grouping images which shared similar colour and method of depiction (**Figure 49, 50 & Appendix 2**).

The **appendix 2** shows combined shapes obtained through examining colour, shape and method of the depiction motifs and their percentage. Percentage for each shape typology (anthroporphic, zoomorphic, geometric) was calculated. For instance (a) anthroporphic shapes- was obtained by taking sum of 1001RS shape which 10 multiply by 100 divide by total number of anthropomorphic (1409) or 10/1409 x 100= 0.709 ≈ 0.71 for detail see **Appendix 2 Colum 3**. (b) A percentage for all shapes collected in the study area in colum 4 obtained by taking sum of shape (10) multiply by 100 and then divide /total number of all shapes 3175 or 10/3175 x 100=0.314≈0.31for detail see appendix 2 colum 5. This was aims to understand which individual figure is mostly depicted and which groups have more figures in term of percentage.

1001= 1001, 1002, 1003, 1004

1002= 1005, 1006

1003= 1007, 1023

1004= 1008, 1015

1005= 1009, 1010, 1011, 1012, 1013, 1014, 1024

1006= 1016, 1017, 1018 1019

1007= 1020, 1021, 1022

2001= 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010

2002= 2012, 2018

2003= 2013

2004= 2015, 2016, 2017

2005= 2011, 2019, 2023, 2024, 2028

2006= 2020

2007= 2021

2008= 2022

2009= 2025

2010= 2027

2011= 2026, 2029

3001= 3001, 3002,

3002= 3008, 3018, 3026, 3027, 3028

3003= 3009, 3010

3004= 3011, 3012, 3013, 3014, 3030,3033,3034,3035, 3036, 3037, 3038, 3039, 3044, 3045, 3048, 3050

3005= 3015, 3016, 3031, 3032, 3047

3006= 3022, 3023, 3025

3007= 3029

3008= 3040, 3041

Figure 49: Grouped images for further analysis

No.	Shapes	No.	Shapes
1	1001RS	27	2005WS
2	1001RF/L	28	2006RS
3	1001WF/B	29	2006WS
4	1002RF/L	30	2007RF/L
5	1002WF/B	31	2008RS
6	1002RS	32	2008RF/L
7	1003RF/L	33	2008WF/B
8	1004RS	34	2009RS
9	1004RF/L	35	2009RF/L
10	1005RF/B	36	2009WS
11	1005WF/B	37	2009WF/B
12	1005YF/B	38	2010WF/B
13	1006RF/B	39	2011WS
14	1006WF/B	40	3001WF/B
15	1006YF/B	41	3002RF/L
16	1007WF/B	42	3003RF/L
17	1007YF/B	43	3003WF/B
18	2001RS	44	3003YF/B
19	2001RF/L	45	3004WF/B
20	2001WS	46	3005RF/B
21	2001WF/B	47	3005WF/B
22	2002RS	48	3005YF/B
23	2002WS	49	3006WF/B
24	2003RF/L	50	3007RF/L
25	2004WS	51	3007WF/B
26	2005RS	52	3008RF/L

Figure 50: Combined shapes used for groups formulations

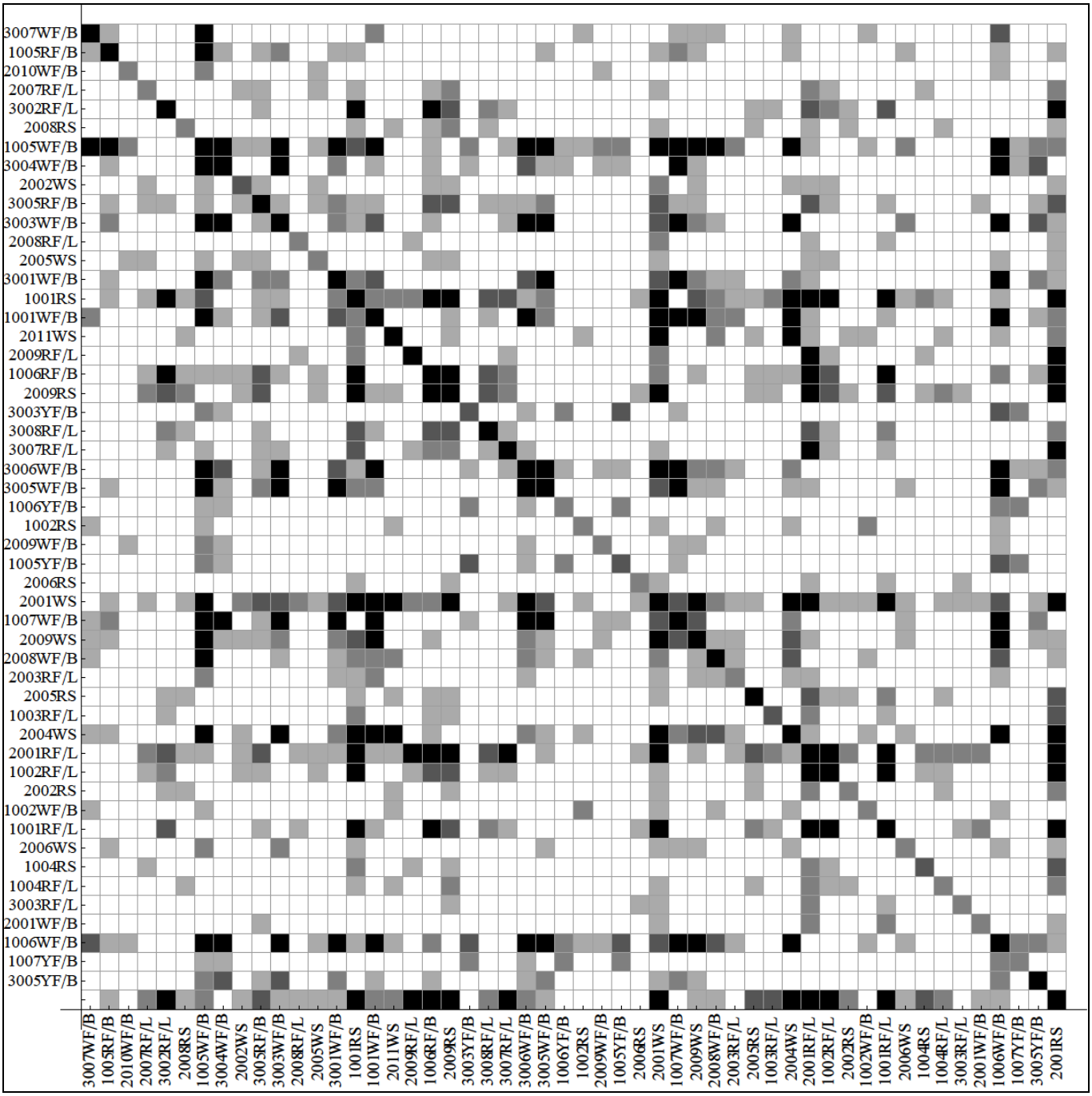


Figure 51: Scattering motifs before grouping association

This matrix table (**Figure 51**) shows a scatter of ‘shapes’ before they were associated; motifs are displayed without links and represent the data as it was collected in fieldwork. Mathematical sorting by repeated association created a series of ‘shape’ groups (**Figure 52, Page 143**).

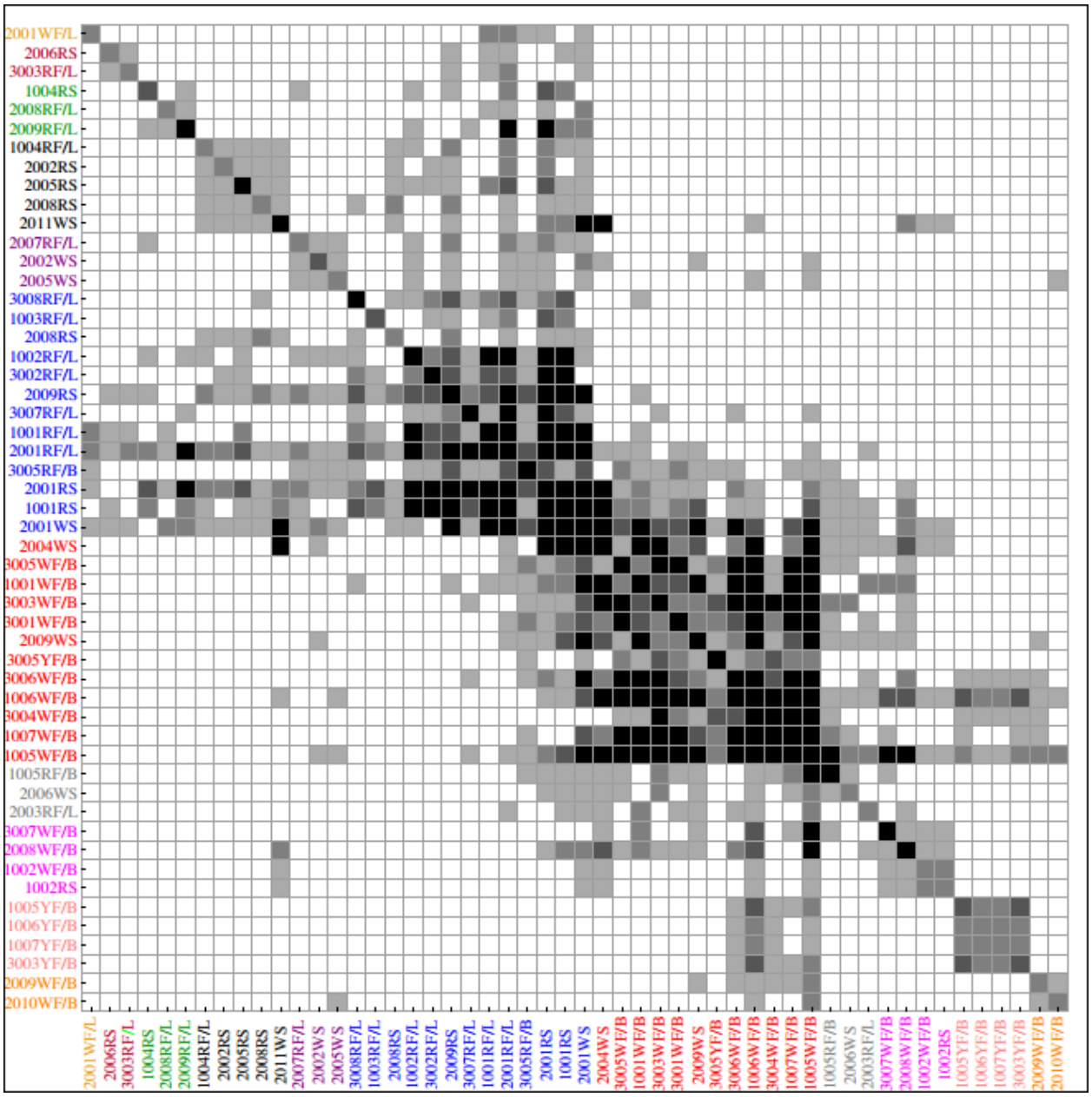


Figure 52: Showing groups of motif clustered by repeated association

The colours used in the descriptors for **Figure 52 & 53** show shapes which tend to occur together at repeated sites and which share similar methods of depiction. For instance, dark blue, purple, black, light blue, green and yellow are shapes applied using the fineline method and the rest of the colours are shapes executed by the finger method. The results indicated in **Figure 52 & 53** suggest two broadly recognisable sets of paintings exist in Kondoa.

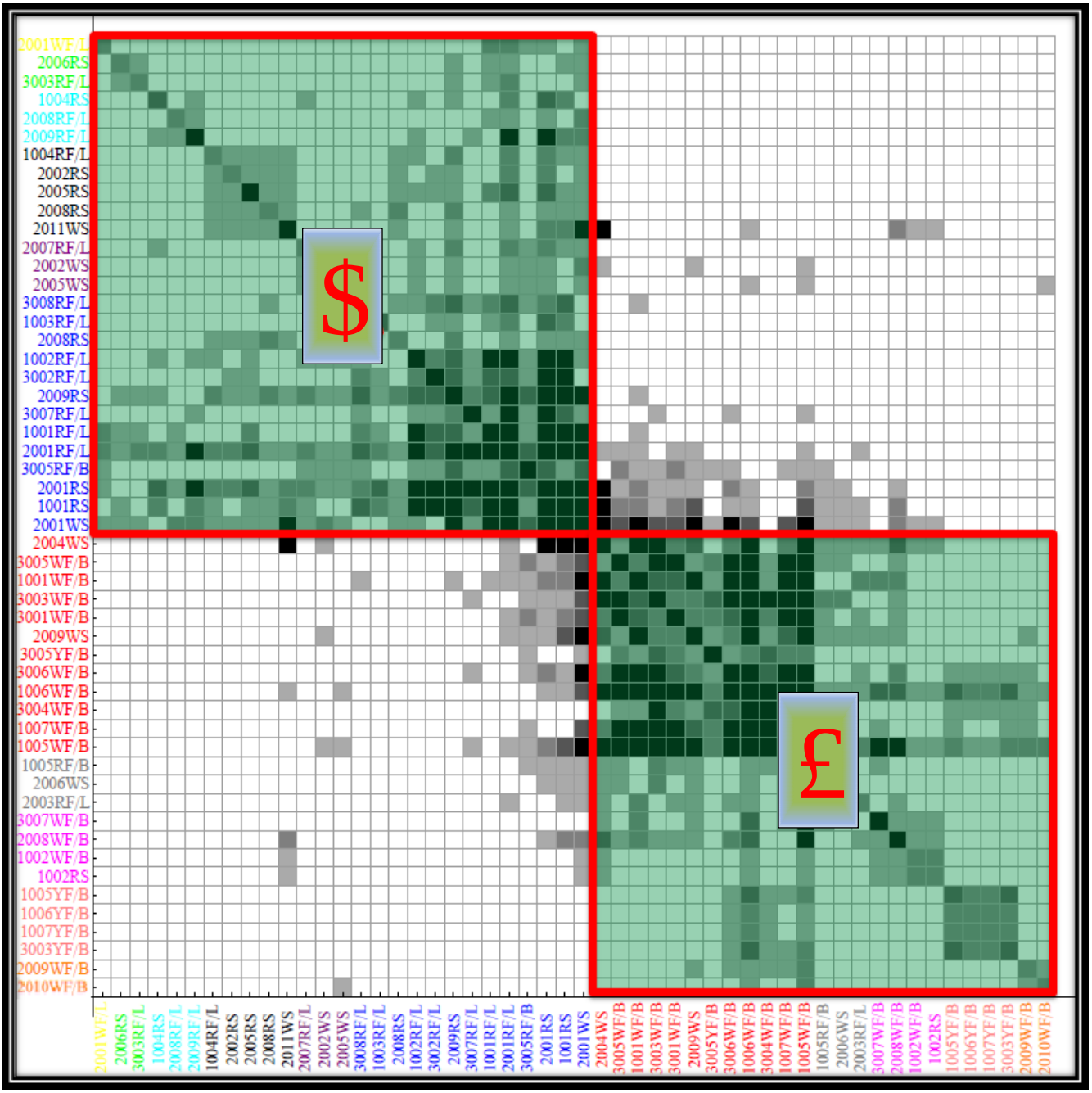


Figure 53: Showing two blocks after motifs association

The two blocks (**$** and **£**) above show motifs associations. Block '**$**' is mostly (but not entirely) fineline shapes and Block **'£'** is predominantly (but not entirely) finger painted. There is some degree of overlapping in the shapes between the blocks, as well as in the method of execution. A few red fineline painted shapes appear in Block **'£'** and similarly, a few white finger shapes also

occur in Block '**$**'. The overlapping may reflect cultural contact and exchange. The methods (fineline and finger) used to depict shapes in the blocks, and a comparison of relative states of preservation, suggest that two different groups existed, with different but overlapping periods of occupation.

A mathematical application was then performed (**Figure 52 Page 143; Figure 53, Page 144**) to find out exactly which motifs go together and how often. From the two larger overall blocks of paintings, eleven sub-groups were formed on the basis of repeated shape association. These groups were numbered by capital letters A, B, C, D, E, F, G, H, I, J and K (see below). Each table shows shapes which connected while the number in the square indicates how many times the shape appear together with a related shape.

	2001WF/L
2001WF/L	2

Group A

	2006RS	3003RF/L
2006RS	2	1
3003RF/L	1	2

Group B

	1004RS	2008RF/L	2009RF/L
1004RS	3	0	1
2008RF/L	0	2	1
2009RF/L	1	1	10

Group C

	1004RF/L	2002RS	2005RS	2008RS	2011WS
1004RF/L	2	1	1	1	1
2002RS	1	2	1	1	1
2005RS	1	1	4	1	1
2008RS	1	1	1	2	1
2011WS	1	1	1	1	6

Group D

	2007RF/L	2002WS	2005WS
2007RF/L	2	1	1
2002WS	1	3	1
2005WS	1	1	2

Group E

	3008RF/L	1003RF/L	2008RS	1002RF/L	3002RF/L	2009RS	3007RF/L	1001RF/L	2001RF/L	3005RF/B	2001RS	1001RS	2001WS
3008RF/L	6	0	1	1	2	3	1	2	3	1	2	3	0
1003RF/L	0	3	0	0	1	1	0	1	2	0	3	2	0
2008RS	1	0	2	0	0	2	0	0	1	0	1	1	1
1002RF/L	1	0	0	11	2	3	1	5	5	1	6	6	1
3002RF/L	2	1	0	2	7	3	1	3	3	1	4	6	0
2009RS	3	1	2	3	3	20	2	3	9	3	11	10	4
3007RF/L	1	0	0	1	1	2	5	1	4	1	4	3	1
1001RF/L	2	1	0	5	3	3	1	23	11	1	10	6	5
2001RF/L	3	2	1	5	3	9	4	11	43	3	20	13	11
3005RF/B	1	0	0	1	1	3	1	1	3	6	3	1	3
2001RS	2	3	1	6	4	11	4	10	20	3	41	18	5
1001RS	3	2	1	6	6	10	3	6	13	1	18	39	5
2001WS	0	0	1	1	0	4	1	5	11	3	5	5	30

Group F

	2004WS	3005WF/B	1001WF/B	3003WF/B	3001WF/B	2009WS	3005YF/B	3006WF/B	1006WF/B	3004WF/B	1007WF/B	1005WF/B
2004WS	19	1	4	4	2	3	0	2	6	0	2	9
3005WF/B	1	17	2	5	5	1	2	4	10	1	10	13
1001WF/B	4	2	17	3	3	4	1	5	7	1	4	11
3003WF/B	4	5	3	18	2	2	3	5	9	4	10	15
3001WF/B	2	5	3	2	8	2	2	3	4	2	4	6
2009WS	3	1	4	2	2	10	1	2	4	1	3	7
3005YF/B	0	2	1	3	2	1	4	1	2	3	2	2
3006WF/B	2	4	5	5	3	2	1	15	8	3	8	8
1006WF/B	6	10	7	9	4	4	2	8	40	7	20	35
3004WF/B	0	1	1	4	2	1	3	3	7	8	5	6
1007WF/B	2	10	4	10	4	3	2	8	20	5	25	22
1005WF/B	9	13	11	15	6	7	2	8	35	6	22	55

Group G

	1005RF/B	2006WS	2003RF/L
1005RF/B	5	1	0
2006WS	1	2	0
2003RF/L	0	0	2

Group H

	3007WF/B	2008WF/B	1002WF/B	1002RS
3007WF/B	5	1	1	1
2008WF/B	1	6	1	1
1002WF/B	1	1	2	2
1002RS	1	1	2	2

Group I

	1005YF/B	1006YF/B	1007YF/B	3003YF/B
1005YF/B	3	2	2	3
1006YF/B	2	2	2	2
1007YF/B	2	2	2	2
3003YF/B	3	2	2	3

Group J

	2009WF/B	2010WF/B
2009WF/B	2	1
2010WF/B	1	2

Group K

A summary of the group formulation

Group A

Group A comprises depictions of wild animals executed with white fineline painting (2001WF/L).

Group B

Group B encompasses ostrich shape which grouped into zoormphic typology (2006RS) and two geometric represented (3003RF/L) figures. The animals were made using solid filled fineline technique whereas the geometrics were made using outline fineline.

Group C

Group C contains human shapes (1004RS) and animal shapes (2008RF/L, 2009RF/L) executed in red outline and solid filled fineline. The human shapes were drawn with solid filled fineline, they have arms outstretched sideways making a spread-eagled type form. The arms are always thicker at the shoulders and thinner at the wrist. Heads are always round or absent. The whole body including head was portrayed in solid filled red (see also Masao 1979; Smith 1997).

Group D

Group D is composed of fineline animal figures (2002RS, 2005RS, 2008RS) drawn in solid filled red. Only one human figure (1004RF/L) was found in this group. Shape 2011WS was also found associated with Group D. These were drawn using the finger method in solid filled white. The method of depiction made the shape different from the rest of the group. It is not clear if this was purposeful or accidental.

Group E

Group E is a collection of animal shapes 2007RF/L, 2002WS and 2005WS depicted in solid filled white and solid filled red fineline only.

Group F

Group F is made up of human figures such as 1001RF/L, 1002RF/L 1003RF/L and 1001RS. It is characterised by red fineline paintings. The human shapes are always thin and tall in appearance. The red fineline human shapes have heads with different fills such as round (A), dots (B), solid filled (C) and line filling, others are masked or headless(D, E, F,G, H and I, see **Figure 39, Page 129)**. For examples of the human motifs in Group F see **Figures 30, 32 & 33**. They have elongated and bending features and arms held pointing down, forward and up. Some figures are shown carrying objects on the head. Toes were not common. Some are shown with hands and carrying weapons or sticks (see material culture items, **Figure 39**; see also Masao 1979; Leakey 1983; Anati 1986).

Animal designs, such as 2008RS, 2009RS, 2001RS, 2001RF/L and 2001WS, are common in this group. The first group of animal shapes were drawn with red outline fineline and varied internal fill types including: straight lines (horizontal or vertical), zigzag lines, dots and grids. The second group involves solid filled fineline animals. For good examples of animals in Group F see **Figures 16, Page 114; Figure 18, Page 116**.

Geometric designs such as 3002RF/L, 3008RF/L, 3007RF/L and 3005RF/B form part of the group. All shapes in the group are depicted by red fineline and only one red finger painting is found within the group.

Shapes in Group F are well drawn with numerous details that make them easy to differentiate and identify, though some of the shapes are faded, perhaps as a consequence of a considerable period of exposure to natural weathering. The shapes in Group F are more naturalistic and some tended to occur in bigger panels in larger shelters. This group shares many similar characteristics to Groups A, B and C and may be made by the same artists.

Group G

Group G is dominated by white finger painting shapes, including human shapes (1001WF/B, 1005WF/B, 1006WF/B, 1007WF/B), geometric designs (3001WF/B, 3003WF/B, 3004WF/B, 3005WF/B, 3005YF/B, 3006WF/B) and solid white domesticated animals (2004WS, 2009WS).

The human shapes are characterised by round head and headless forms; arms are thin, outstretched sideways, as are the legs, forming a spread-eagled type design. Some have hands and toes (**Figure 38, Page 129**, shape 1013 & 1014 see also **Figure 37, Page 128**). Others lack arms and legs, as with shapes 1019 (**Figure 36, Page 127**). Between the arms and legs some have big stomachs, reminiscent of pregnant women **(Figure 37)**. Some figures are depicted with many lines surrounding the body (**Figure 35, Page 127)**. These shapes are crudely drawn compared to the red anthropomorphic shapes. The method of depiction is also different to red human fineline shapes. The geometric figures were represented by different designs and were depicted in white and yellow colours. White domesticated animals are also found within the group, and were depicted in a finger painted white solid method. The overall colours, shape treatment and methods used in groups G and F are different, suggesting they had different artists.

Group H

Group H is dominated by animal figures (2006WS, 2003RF/L) in solid white or red fineline. Only a few human figures (1005RF/B) made by the finger painting occurred together with these fineline animal shapes.

Group I

Group I contains a collection of human figures (1002WF/B, 1002RS), animal shapes (2008WF/B) and geometric figures (3007WF/B). The group includes white and red solid finger paintings.

Group J

Human images in Group J are well drawn, showing a fine level of detail. Group J is characterised by shapes 1005YF/B, 1006YF/B and 1007YF/B followed by geometric shape 3003YF/B. All motifs were finger painted in yellow.

Group K

Two animal shapes (2009WF/B) and (2010WF/B) form group K. The motifs are portrayed by the finger painting method. The method and colour used show strong association between the two shapes.

Generally, each group has its own characteristics that differentiate it from the others. For some groups, this takes the form of a predominance of a particular method and colour of depiction: groups A, B, and C were dominated by red fineline and/or white fineline. The three groups are characterised by the fineline method, suggesting similar artists. Equally, groups J and K are dominated by the finger paintings drawn with yellow and white colour and appear to have different artists to A, B, and C. The F and G groups contain many shapes executed in more than one method, though each group is still dominated by a particular method. Group F was dominated by red fineline shapes and showed recurring relationships with groups A, B and C. Group G was mainly formed by white finger painted shapes and it has strongest connections to groups J and K. The two groups F and G therefore appear to be, at least in part, intermediate groups and may hold important information about interaction and borrowing between painting groups.

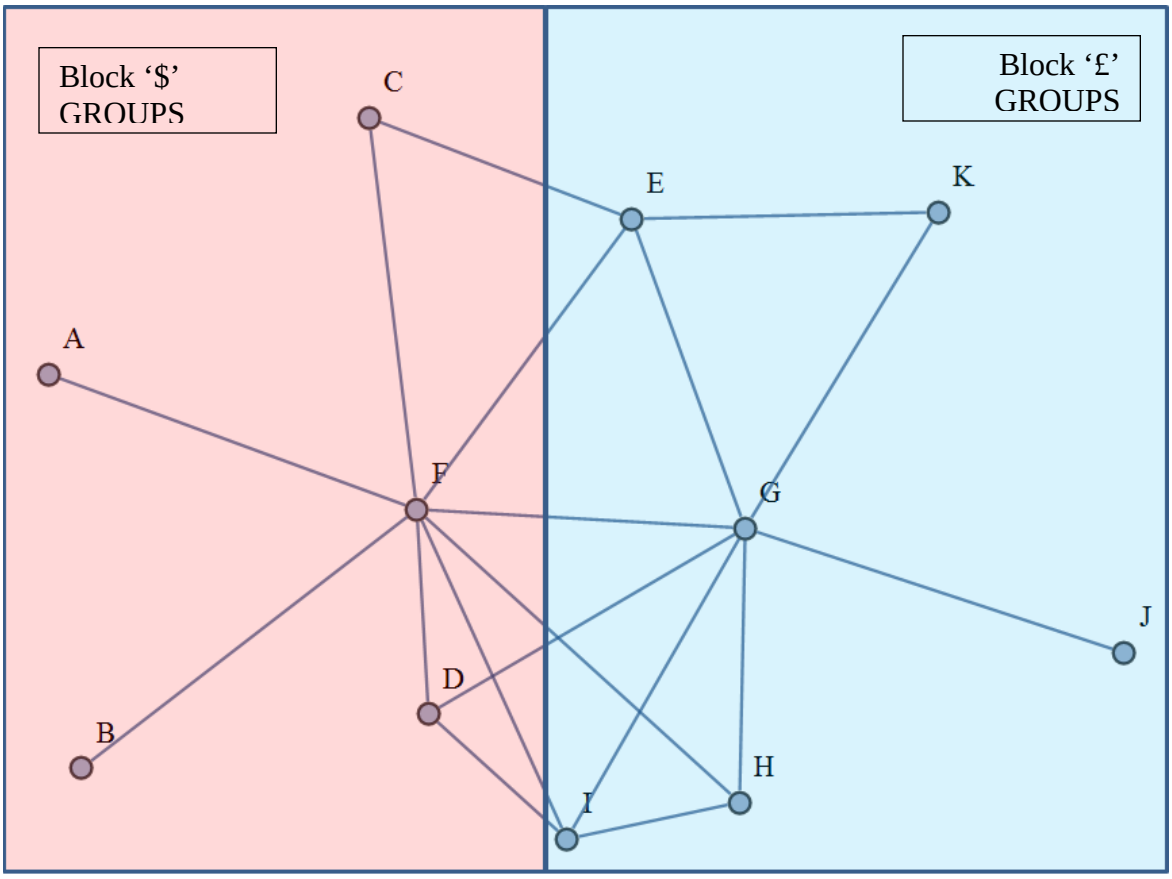


Figure 54: Group connectivity diagram

The connectivity diagram (**Figure 54)** shows connections between the groups. Links are based repeated associations (in other words co-occurrences) between figures in one group and figures in another. The diagram shows how the other groups all connect to groups F and G. These therefore seem to be the core groups. This diagram further confirms that the 11 groups divide between two higher level groupings as identified in **Figure 53, Page 144**. The left hand grouping (Block**'$'** groups) consists of the major Group F and its most closely affiliated groups A, B, C and D. The second grouping (Block**'£'** groups), is centred on Group G and its closest affiliations are with groups E, I, J and K. The groups D, E, H and I have some cross grouping affiliations, suggesting contact, interaction and sharing between groupings. This connectivity diagram illustrates graphically the possibility of separating the rock art of this region into distinct 'traditions' as a basis for analysis and interpretation whilst avoiding essentialism and allowing for influence and exchange.

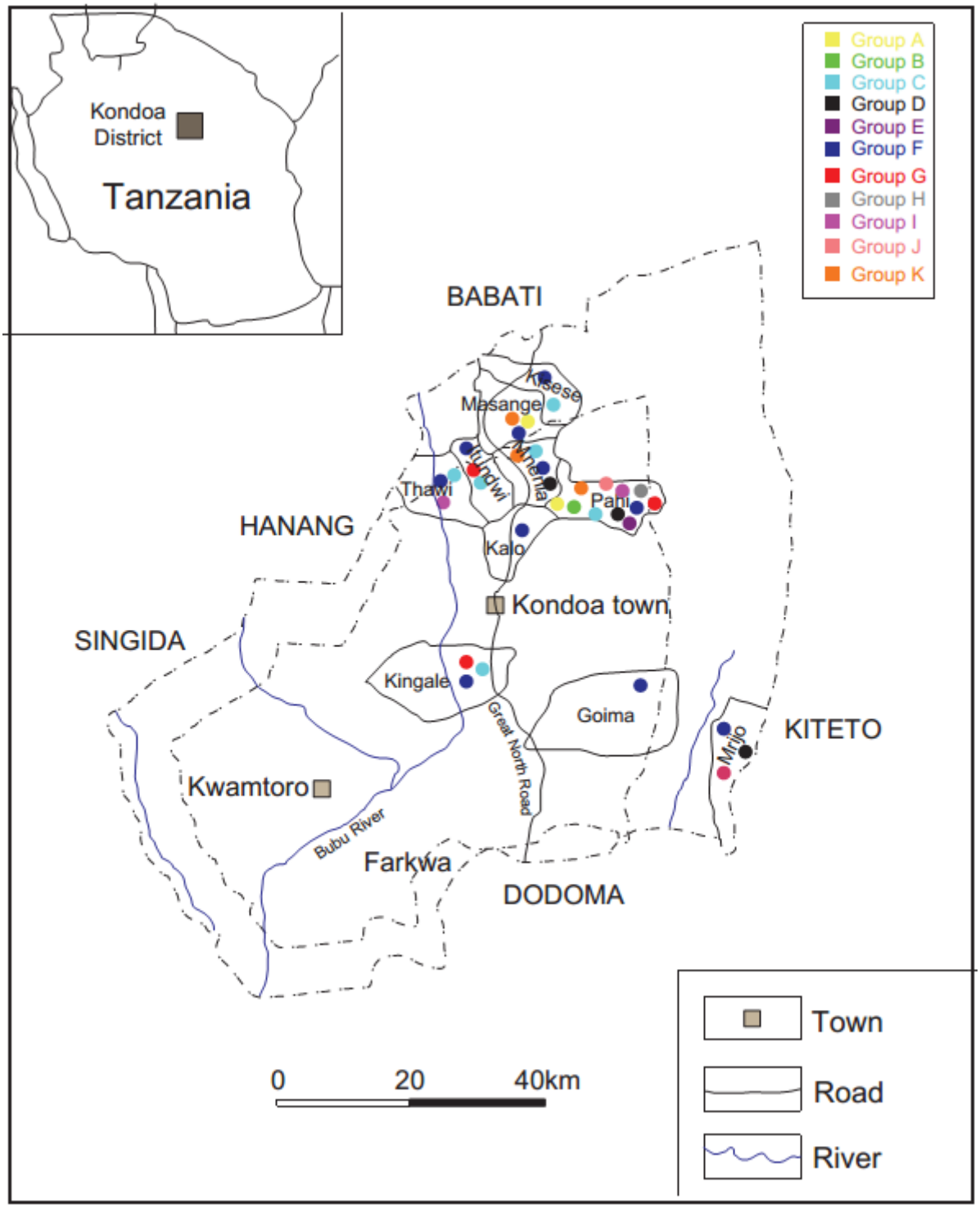


Figure 55: A map showing group distribution within study area

Figure 55 shows the distribution of the groups within the Kondoa landscape, providing another lens through which to view the likelihood of relationships between groups. Groups using the same method tend to occur in the same environmental zone. **'$'** groups dominate the upland areas, whereas **'£'** groups dominate the lower lying area, but there are important overlaps.

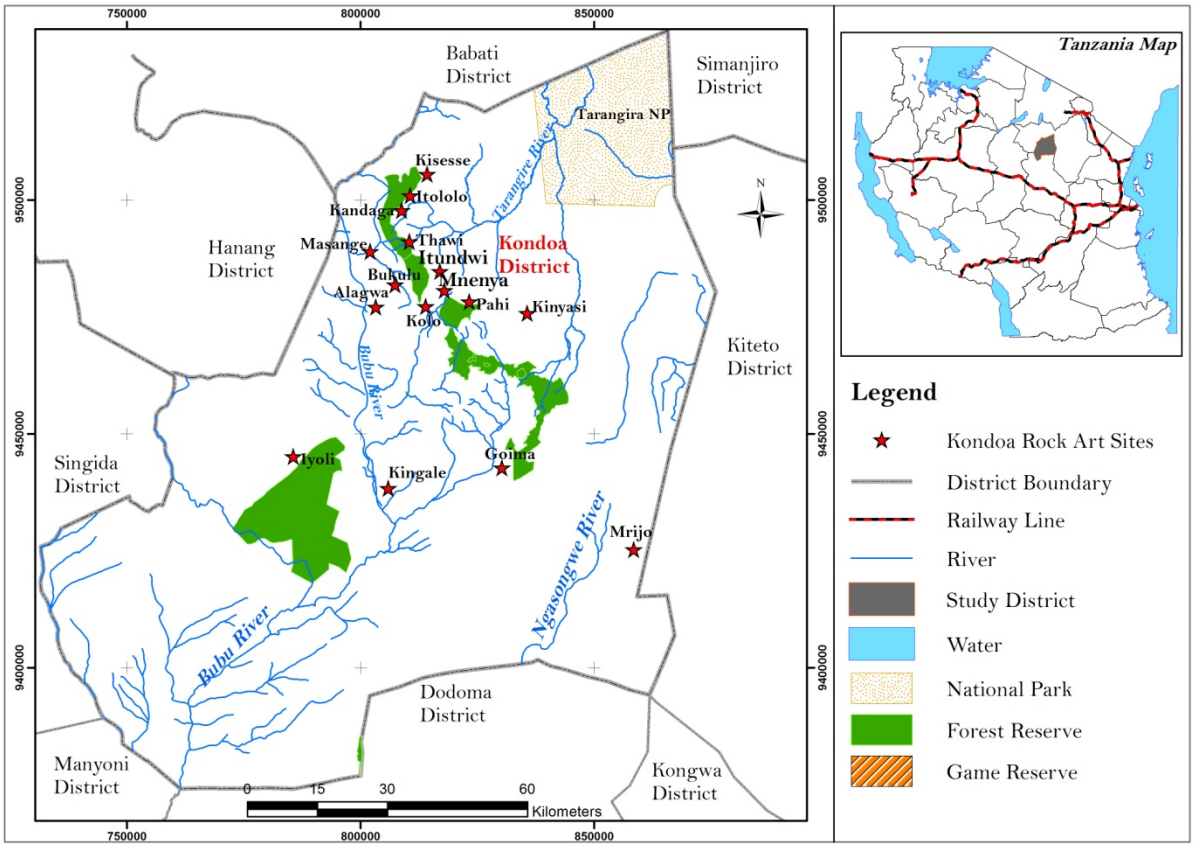


Figure 56: A map showing rock art sites in the study areas

This study therefore provides evidential rock art based support for the tentative archaeological findings of Masao (1979), Kessy (2005) and Lane (2009) that this area has been a landscape of ethnic interaction and influence over a long period of time. Even today, groups in Kondoa live in the same area, sharing economic activities, including rituals. The intensity of interaction which we see today in Kondoa may not be as particular to the colonial and independence period as some have assumed. It began thousands of years ago when hunter-gatherer first interacted with pastoralist and farmer groups in this landscape and the extensive long standing rock art overlaps allow us a new insight into at least a part of this history.

Dividing rock paintings into cultural tradition sequences

Firstly, I examined all groups which shared similar methods, shapes and colours and examined whether they could be plausibly explained as regional variations or temporal developments, based on their distribution. This allowed me to define more precisely the nature of the groupings. Each group tended to dominate within a particular area, though sometimes more than one group dominated one area (**Figure 54, Page 152**). For instance, Group F and associated groups appear along the Bubu River at Thawi ward, while Group G and connected groups mostly occupy Pahi wards. Groups which were frequently found together in my association analysis (e.g. groups A, B, C and F) were most likely made by one set of artists (see also Spaulding 1953; Tugby 1958). This can be tested and expanded upon by considering the superpositioning of the motifs.

Superposition motifs

The overlays between motifs are counted and tabulated in **Table 9, Page 157**. I acknowledge that only a part of overall data sample was considered in this superimposition analysis. This is due to the fact that many of the sites where there were substantial numbers of overlapping paintings were also very faded, making it difficult to identify correctly the overlays between motifs. Superpositions of motifs were sorted based on method, colour and shape. As mentioned in Chapter 4 the principles of superpositioning demand that figures appearing on top of others are younger than the ones below them (Smith 1995; see also **Figure 57, Page 156**). In regard to the superposition seen in **Figure 57**, wild animals painted in red fineline method are therefore older than white (here a dirty white) solid finger painted images.

Figure 57: An example of superimposed motifs, Thawi Chini

Figure 58: An example of superimposed motifs, Kolo B1

Whilst it is a fact that if one painting is on top of another it must have been made later, this doesn't mean it was painted much later. It could have been painted only days, perhaps hours after the underlying image. Sometimes superpositioning happens between images of the same group (e.g. **Figure 58, Page 156**). This could reflect a long duration for that group, especially when there are great differences between the relative states of preservation of figures in different layers made using the same colour/method, but it could also reflect an intentional meaningful relationship between the two layers (Lewis-Williams 1981). Judgement based only on overlays, without reference to other factors such as relative states of preservation, might lead to incorrect interpretations about chronology.

Table 9: Showing superposition motifs

2002WS over 2002RS	3006WF/B over 2016B/F	1002RF/L over 3001RF/L
2025WS over 2025RF/L	1009WF/B over 2025RS	2002WS over 2002RS
2025WS over 2025RS	3023WF/B over 2025RS	2005WS over 2008RS
1002WF/B over 2002RS	3012WF/B over 2025RF/L	2005WS over 2008RF/L
2001WS over 2025RS	3013WF/B over 2025RF/L	1002RF/L over 2002RF/L
3014WF/B over 2025RS	2007WS over 2025RS	2002WS over 2024RS
1002YF/B over 2002RS	3010WF/B over 3010RF/L	1002WF/B over 2003RS
3004RF/B over 2002RS	3009WF/B over 3010RF/L	2025WS over 1002RF/L
3009WF/B over 2002RF/L	3023WF/B over 1016RF/B	2002WS over 2001RS
2001WS over 1001RF/L	2011WS over 2008RS	2005RF/B over 2001RS
1009WF/B over 2016B/F	1013WF/B over 2017B/F	3003WF/B over 2017B/F
3021WF/B over 2016B/F	1013WF/B over 2008RF/L	1013WF/B over 2025RS
1013Y/FB over 2025RF/L	3010WF/B over 2025RS	2015WS over 2025RS
2003WS over 2001RS	2002WS over 2025RS	2002WS over 2010RS
2001RS over 2001RF/L	2029WS over 2001RF/L	2002WS over 1002RF/L
2001WS over 1002RF/L	1015WF/B over 2025RS	2001WS over 2025RS
2002WS over 2025RF/L	2002WS over 3001RF/L	2015WF/B over 1002RF/L
3001WS over 1002RF/L	3001R/FB over 2001RS	3007WF/B over 2003RS

Summary of superposition

WS over RS = 14

WS over RF/L = 10

WF/B over RS = 10

YF/B over RS = 1

YF/B over RFL= 1

RF/B over RS= 2

WF/B over RF/L= 7

WFB over BF= 5

RS over RF/L= 1

WF/B over RF/B= 1

RF/L over RF/L= 2

The superposition analysis indicates that the majority of overlays take the form of figures from **'$'** groups (e.g. finger painted white, yellow and black figures) overlaying figures from **'£'** groups (e.g. fineline red motifs). This serves to confirm earlier suggestions about the relatively earlier age of red figures and the relatively later age of white figures. It now becomes clear that yellow and black figures are also later and that there was a general shift from fineline painting to finger painting. A few white colour motifs are found lying over black motifs (**Figure 59**) but black figures are never found overlying white, suggesting that the black figures could be a relatively early component within the later art sequence. There were also many red figures over other red figures (e.g. **Figure 58, Page 156)**. The incidence of red over red is much more common than **Table 9, Page 157** implies. The bulk of overlays where I could not determine which image were over and which was under concerned red figures over other red figures. Unless I was certain of the figure overlay, I did not include it in **Table 9, Page, 157**. There are a few instances of black over red figures.

Figure 59: An example of white motif overlying black images, Lusangi-Pahi

Tradition formulation

Although each of the group has its own particular characteristic and is different from others, they are not completely distinct; some groups share similar methods of depiction, shape, colour and placement in the landscape. This is clearly evident in my connectivity diagram (**Figure 54, Page**

152), an important tool for conceptualising the connections between the groups**.** The diagram suggests that groups F and G are the groups with the greatest number of links to all other groups. Group F is dominated by a set of motifs that are broadly typical of the varied motifs included within the groups labelled **'$'**. Similarly, Group G comprises mainly those motifs that are particular to the **'£'** groups (**Figure 53, Page 144**). The **'$'** groups are composed of a large set of motifs with many different characteristics. The **'£'** groups are as well. The breaking down of the art collective into**'$'** and **'£'** groupings indicates that only two major rock art'traditions'are found in Kondoa.

A 'tradition' therefore, is defined here as a collection of shapes, generally sharing similar methods of depiction, which regularly occur together. Colour and subject matter are not necessarily uniform within a tradition. Sometimes one colour is dominant, but other colours are also used on occasion. Looking at the **'$'** and **'£'** groupings, method seems to be more stable within the traditions than colour. However, there are exceptions. A few shapes are clearly part of one tradition (because they occur together often) even though they are made with different methods to other shapes in the same tradition.

A closer look at the **'$'** and **'£'**groupings shows that, in Kondoa, particular colours and methods tend to go together. By examining **Figure 53, Page 144** you can see that red fineline shapes are always found together and are dominant within the **'$'**groups (**Figure 53**). Since **'$'** motifs are repeatedly overlain by '**£'** motifs, the **'$'** groups are clearly older and I will therefore give the **'$**'groups the working title of'Tradition **1' or 'T1'**. The **'£'** groups are generally finger painted in white, yellow and red. For them I will use the working title '**Tradition 2' or'T2'**.

The appearance of some shapes depicted with a method more typical of T1 in T2 or the appearance of some typical T2 motifs in tradition T1 is recognised and an interest in such overlaps forms an important part of this study. Comparable observations of cultural overlaps have been recorded in archaeological excavations (e.g. Masao 1979; Kessy 2005; Lane 2009). This is an indication of contact, interaction, and cross-influence, social phenomena which can still be observed today among the groups of the district (Chapter 2).

Tradition 1

Tradition 1 is a combination of numerous shapes including wild animals, humans and geometric designs. It is depicted using the red fineline method. Only one white fineline shape (2001WF/L) was recorded and it also forms part of this tradition. Within T1, Group A is distinctive as it is the only part of the tradition in which the use of white colour is extensive, but in other aspects (shapes, location and method of depiction) are the same. Group A is similar to the other groups in the tradition. Overall, for the dominant motifs used in this tradition, red is the primary colour. Some shapes in the tradition, such as 2001WS, 2011WS and 3005RF/B, may be finger painted. The method used for the depiction of these motifs differs greatly from that used for most other shapes within the tradition; this variation may have been something particular to the function/meaning of these particular shapes or it may be a product of interaction.

Many motifs in this tradition occur below white and yellow figures (see superposition motifs analysis above) and some are extremely faint, suggesting great age. Motifs in this tradition are executed with great attention to detail. Human figures are portrayed in complex postures and are often elongated or bending forwards (**Figure 70, Page 181**). The human head shapes are very variable (**Figure 60 a, c, Page 161**). Some figures are depicted wearing skirts **(Figure 60a)**. Human facial details such as eyes, noses and mouths were never drawn. Some figures carry or hold material culture items such as bows and sticks. These characteristic features make them unique and different to the human figures in tradition 2.

Other motifs common in this tradition are wild animals and birds. Giraffes are most frequently drawn, followed by eland, elephant, and then other antelope (and see Leakey 1983: 118). The animal and bird figures are infilled using various techniques: blank (i.e. outline only), horizontal and vertical lines, dots, grids or solid colour (see also Masao 1979; Leakey 1983; Anati 1986). All lines were made by the fineline method. The different techniques used for filling both human and animal figures led to this tradition being broken into many styles by some early researchers (e.g. Leakey 1936; Leakey 1983). However, my study of repeated associations suggests that these differences are in fact the product of variation within one tradition. The variations are evenly spread through space and, judging from relative states of preservation, also through time. They may be a product of different functions, individual tastes, gender and so on, but they are all

the work of one artistic tradition. Snakes (**Figure 42b, Page 133**) and geometric designs (**Figure 47, Page 138**) were also drawn but are rare. The figures in this tradition are broadly naturalistic and are scattered across the whole of the district. I term this tradition the **Naturalistic tradition** (**Figure 60 & 61**).

a: Thawi Chini

b. Thawi Juu

c: Thawi Chini

Figure 60: Examples of Naturalistic tradition human figures

a: Thawi Juu

b: Thawi Chini

c: Mlimani-Pahi

Figure 61: Examples of Naturalistic tradition wild animal figures

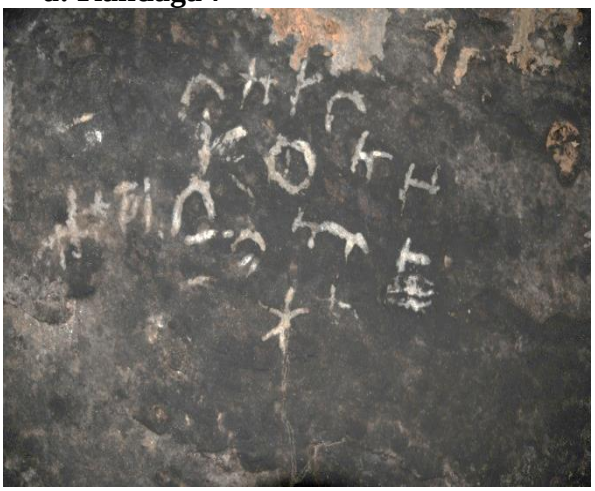
Tradition 2

The Tradition 2 consists of various white humans, geometrics, and domestic animals. The human figure shapes are characterised by round or headless forms, stretched arms, big stomachs and toes (**Figures 17, 34, 35, 36, 37 & 45)**. The human figures in this tradition are all highly stylised with strikingly splayed arms and legs, usually projecting outwards at right angles from the body. Some have bizarre long attachments leading upwards from their heads (head-dresses?). Wild animals are always executed with solid fill **(Figure 18 & 20**). A wide range of geometric designs are present, including circles, rectangles, ladders, iron objects, dots, stars, and lines (**Figure 22, 48 & 62)**

The principle method used for the depiction of motifs within this tradition is white finger painting; other colours such as yellow and red are also used, but rarely. The majority of the sites in this tradition are concentrated in one locality, Pahi (**Figure 55 & 56**). The dominance of the use of white pigment leads me to term this the **White painting tradition** (see also Masao 1979; Anati 1986; Smith 1995). In other regions, traditions with similar shapes are often considered as farmer or Bantu language-speaker tradition (Smith 1997; 2006, 2010; Namono 2010).

a: Kandaga 7

b: Thawi Chini



c: Lusangi-Pahi

d: Markaz-Pahi

e: Markaz-Pahi

f: Kiteo

g: Lusangi-Pahi

Figure 62: Examples of White painting tradition motifs

Additional figures falling outside of Traditions 1 & 2 (Traditional 3)

There remains a small set of images that falls outside of any of my groups and outside of the two major traditions I have defined above. These were omitted from my statistical analysis because they are too few in number and occur at too few sites in my study area to constitute an adequate sample for statistical purposes. These are images 2015, 2016, 2017, 3003, 3006 and 3021. These images were all found in two rock shelters and, uniquely, were mostly painted in black by finger (2015, 2016, 2017), but a few were also painted in white (3003, 3006, 3021, see **Figure 44, Page 134** for details). Both sites with these images were at Pahi. The only possible equivalent to this tradition found outside of Pahi was shape 3049 recorded at Kandaga village, about 6 kilometres

from Pahi sites (**Figure 25, Page 121**). Typical images in this tradition are of cattle and geometric designs. All are finger painted. I named this the **Cattle paintings tradition** (**Figures 44, Figure 79, Page 203 & Figure 63**).

Figure 63: Examples of cattle paintings tradition

This tradition was not widespread like the Naturalistic and White traditions. Two (potentially three) sites is not sufficient to define a tradition. I recognised the existence of this tradition in Kondoa because of my knowledge of other similar sites in neighbouring areas. I have seen related sites in other parts of northern Tanzania and, in Kenya, a Cattle tradition has been well documented (e.g. Russell 2013). It is therefore on the basis of my regional knowledge of rock art, and not on the Kondoa data alone, that I propose the existence of a Cattle tradition in Kondoa.

The Naturalistic and White traditions share some, though far from all, characteristics with rock paintings in other parts of Tanzania and beyond. For an analysis of the relationship between the three traditions in Kondoa and the rock art traditions in other parts of Tanzania and Africa see Chapter 6.

Site analysis

The physical characteristics of each site were examined; these included site orientation, elevation, type, shelter size, modern use of the site, and associated archaeological assemblages. The aim was to consider which types of sites were chosen for which traditions. This is another stand of evidence that I can use in my determination of authorship.

Site orientation

Site orientation refes to the compass bearing obtained when looking outwards from the main painted wall of the shelter. These data show that the paintings are located mainly facing-north east and west, though the results also indicate some differences between traditions. The Naturalistic tradition faces mainly W-NW, followed by S-SW, SSE, N-NE; sites in this tradition only rarely display a NW-N and E-SE orientation. By contrast, the white tradition predominantly faces N-NE, then E-SE to SE-S, SW-W and only rarely towards NE-E and NW-N. The two sites with cattle tradition faced NE-E and SW-W, too small a sample to have statistical significance.

Table 10: Site orientation

No. of sites	orientation	Tradition 1	Tradition 2	Tradition 3	%
23	E-SE	5	18	0	11.27%
10	NE-E	0	9	1	4.90%
39	N-NE	14	25	0	19.12%
12	NW-N	7	5	0	5.88%
29	SE-S	16	13	0	14.22%
22	S-SW	16	6	0	10.78%
28	SW-W	10	17	1	13.73%
41	W-NW	41	0	0	20.10%

The overall pattern is that the Naturalistic tradition was oriented more to the West, while the White tradition was oriented more in a northerly or eastly direction. Cattle tradition orientation is uncertain. Some of these directions have cultural importance to particular groups. Wasandawe communities considered the West as the direction of life, and many Wasandawe rituals follow a westerly orientation: for instance, a leba tree is chosen for the birth of twins' ceremony and is the ceremony is always situated on the westerly side of the tree (Ten Raa 1981:188). Audax Mabulla (2005:36) showed that the majority of Geometric tradition art in the Mara region (north western Tanzania) are located in South and East facing shelters. In Kasama, northern Zambia, Smith (1995:150) noted that Red Animal tradition sites face North and northwest, while Red Geometric tradition sites face South East. This range of results suggests that cultural factors have a large impact in determining the choice of orientation for sites. Although geological availability

of shelters will always be a factor, shelters facing in all directions are available in Kondoa. Overall I recorded more shelters (many unpainted) facing in an Easterly direction.

Site elevation

This is the approximate height of each site above mean sea level. I used this measure to differentiate 'upland' (above 1400m) and 'lowland' (below 1400m) sites and as a partial proxy for determining the accessibility of the site.

Table 11: Site elevation

Elevation in metres	Tradition 1	Tradition 2	Tradition 3	No. of sites	%
1100-1200	1	1	0	2	0.98%
1200-1300	5	7	0	12	5.88%
1300-1400	43	65	2	110	53.92%
1400-1500	20	24	0	44	21.57%
1500-1600	9	5	0	14	6.86%
1600-1700	10	2	0	12	5.88%
1700-1800	10	0	0	10	4.90%

The data show that over 70% of sites occur between 1300 to 1500 m. This is also the band where the bulk of the rock shelters are found. In landscape terms there is considerable difference between1300 m and 1500 m, as the former is the height of the plains at the bottom of the escarpment and the latter is the height of the woodlands at the top. 1400 m is therefore the approximate dividing line between 'upland' and 'lowland' (or hills and river/plains) areas in Kondoa. Comparatively, a greater percentage of Naturalistic tradition sites are in upland locations and more White tradition sites are in lowland locations. The bulk of the more faded Naturalistic tradition sites lie above 1400 m and the bulk of the clearer and younger looking sites are below 1400 m. It is therefore possible that the authors of this art shifted away from making their art in higher altitudes through time and slowly moved down the slopes. This could be a product of cultural change and/or interaction.

Dimensions of the shelter

The size of shelter was measured by taking length and breadth of the floor of the shelter. These measurements were taken in metres, and were made using tape measures. The measurements were used to calculate the size of the floor of the shelter. Knowing the size of the shelter was useful for predicting possible functions.

Table 12: Dimension of painted shelters

No. of sites	Area in m^2	Tradition 1	Tradition 2	Tradition 3	%
131	0-20	65	66	0	64.22%
40	20-40	11	28	1	19.61%
10	40-60	6	3	1	4.90%
6	60-80	3	3	0	2.94%
3	80-100	2	1	0	1.47%
2	100-120	2	0	0	0.98%
4	120-140	2	2	0	1.96%
0	140-160	0	0	0	0%
1	160-180	0	1	0	0.49%
2	180-200	1	1	0	0.98%
0	200-220	0	0	0	0%
1	220-240	1	0	0	0.49%
1	240-260	1	0	0	0.49%
0	260-280	0	0	0	0%
1	280-300	1	0	0	0.49%
0	300-320	0	0	0	0%
2	320-340	2	0	0	0.98%

My data shows that both Naturalistic and White traditions occupy a mix of both large and small size shelters in a proportion roughly equal to their availability. The data show slightly more Naturalistic tradition sites in large shelters, but there is no strong preference. The dimensions of the shelter will therefore not be useful for identifying authorship. The varied use of large and small shelters may be indicative that each tradition was used for a variety of functions, some art in each tradition could have served a group function, and other art seems to have been more personal.

Site type

I classified site type by looking at whether the paintings were made in: (a) rock shelters, (b) on boulders, (c) in caves, or (d) along overhangs. Only one site was found on a boulder; 203 sites were found in rock shelters. The scarcity of anything except rock shelter sites rendered it difficult to ascertain whether there were any particular types of images associated with them. Thus, this data set does not provide evidence supporting interpretations for the authorship or function of the traditions.

Modern use of the site

Rock paintings sites have been used by local people and heritage institutions for various activities: this range from habitation, to ritual practices and tourism (Bwasiri 2008). Local people use the rock painting sites primarily for traditional ritual ceremonies, and to a much lesser extent for habitation. Government institutions use the sites for tourism activities. Data show that 3 sites have been used for living heritage practices and all these have art belonging to the Naturalistic rock art tradition (Bwasiri 2008). Five sites connected to the Naturalistic tradition were located within the habitation area of Mnenia village and so could be termed dwelling site. Twenty six sites are used for tourism and one hundred and seventy are currently not in use.

Table 13: Modern use of the sites

No. of sites	Modern use of the sites	Tradition 1	Tradition 2	Tradition 3	%
3	Living heritage	3	0	0	1.47%
5	Habitation	5	0	0	2.45%
26	Tourism	16	8	2	12.75%
170	None	0	0	0	83.33%

To my knowledge, the *Mongomi wa Kolo* site and two others nearby (Kolo BI, B II & BIII) are the only three sites currently used by local people for traditional rituals. The use relates to rain-making and healing (see also Bwasiri 2008, 2011a, b; Antiquities Division 2004a,b; Chalcraft 2004, 2005). My work failed to uncover any robust relationship between the contemporary use

of these sites for ritual practices and the original authorship or function of the paintings. When and why people started to use these shelters for their rituals is not clear.

Associated archaeological materials

Archaeological excavations in rock painting shelters in the region have shown the presence of Middle Stone Age (MSA), Late Stone Age (LSA) and Iron Age (IA) materials (Inskeep 1962; Masao 1979; Kessy 2005; Lane 2009). I did not see surface evidence of MSA materials at any site, but this does not mean that MSA deposits do not exist buried at the sites. I observed a mixture of both LSA and IA materials on the surface at 109 sites. The sites with both LSA and IA materials had a mixture of Naturalistic and White traditions. 36 sites had only LSA materials visible on the surface and these sites had a high concentration of Naturalistic tradition paintings. Only a few of them also had White tradition paintings. 21 sites had only Iron Age materials and these were mostly associated with White tradition paintings. 38 shelters had no visible archaeological assemblages. The occurrence of large numbers of sites with LSA and IA material indicated the shelters were utilised by mixed groups in different times (see also Masao 1979; Kessy 2005).

Table 14: Associated archaeological material

No. of sites	Archaeological materials	Tradition 1	Tradition 2	Tradition 3	%
36	LSA	36	0	0	17.65%
109	LSA+ IA	63	44	0	53.43%
21	IA	6	15	2	10.29%
38	None	0	0	0	18.63%

With strong patterns in my recorded data presented, I now combine all of this evidence to consider the authorship of each tradition.

CHAPTER SIX

Approaching Authorships

Introduction

In Chapter 5 I showed that some rock painting shapes and methods of execution dominate in particular locations and that some are repeatedly accompanied by other shapes. I established that there are three rock painting traditions in Kondoa. The traditions have been exactly defined in terms of their content, placement in the region and their relative dating. Mathematical statistical analysis produced strong patterns of association, demonstrating both continuity and discontinuity of shapes within the traditions. The continuity and discontinuity of the paintings can be a useful tool for examining group movement and interaction on the landscape. The success of any attempt to tie rock art traditions to cultural groups require a good understanding of the cultural history of an area; for Kondoa, we are fortunate in that this understanding is already in place (Chapter 1, 2 & 3). It is only after this kind of work on authorship has been completed that we can move on to the study of the meaning and motivation of the paintings. It is the intention of this study to determine authorship so as to make it possible for future scholars to consider the meanings of the paintings.

The task of this chapter is to interpret the patterns I have identified in Chapter 5 in terms of authorship. To do this I use a multi-stranded approach involving: archaeological evidence, distributional analysis, ethnographic evidence and oral traditions.

Naturalistic tradition

My statistical analysis (Chapter 5) defined the exact nature of the Naturalistic tradition and showed that it covers all of Kondoa District and other neighbouring areas such as Singida, Mara, Arusha and Manyara regions. Within Kondoa District, it is mainly concentrated in the north-west, along the Bubu River. The largest numbers of sites are in Thawi ward and south-west of Kingale ward. There is then a steady scatter of the sites across all other parts of the district, both in upland and lowland areas, wherever suitable rock shelters are found.

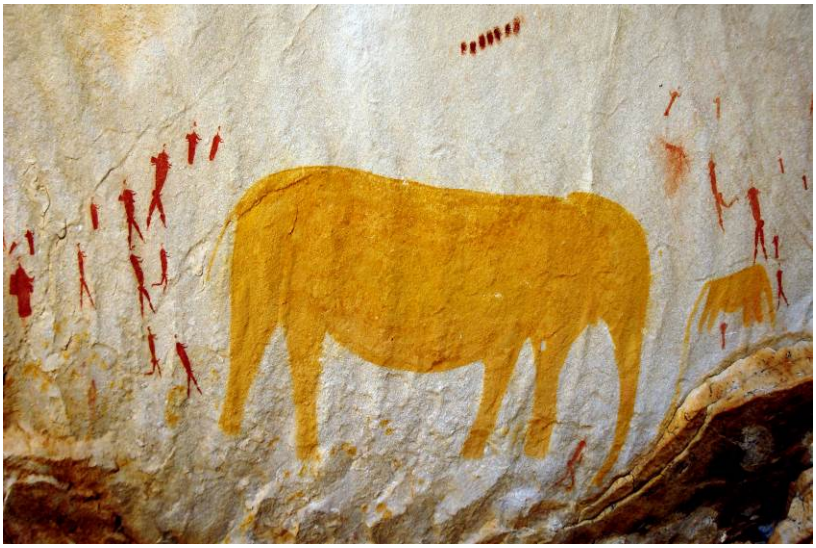
The concentration of Naturalistic tradition sites along the Bubu River could fit with the distribution of number different groups. This area has both water and fertile grazing land throughout the year, making it a potentially useful place for hunter-gatherers, pastoralists or farmers. It is other aspects of the distribution of this tradition that help us to narrow down possible authorship. Its strong presence in upland hill areas is not suggestive of pastoralist or farming groups. The hill sections of Kondoa were only settled by these groups in recent colonial times and some areas (e.g. Kolo hill) were never settled. The strong upland distribution is therefore most suggestive of hunter-gatherers. Other aspects of the distribution support this. The overall spread of the tradition across Kondoa and Singida districts does not fit any archaeologically or ethnographically recorded pastoralist or farmer group. Such a wide distribution fits best with more mobile hunter-gatherer groups.

This distributional evidence is further supported by evidence from the superposition sequences. In places like Pahi and neighbouring villages such as Itundwi, Kinyasi, Masange and Bukulu, superposition (Chapter 5) always showed that the White tradition overlay the Naturalistic paintings. The Naturalistic paintings were also relatively more faded, even though red is a strong and enduring colour. Along with the superposition evidence, the impression given is one of great age for many of the Naturalistic tradition images (Masao 1979; Leakey 1983; Anati 1986). Emmanuel Anati (1986) has gone as far as suggesting a possible age of more than 40,000 years ago for some faded Naturalistic images. This may be an extreme estimate, but it supports the considerable antiquity of the Naturalistic tradition. I therefore concur with Fosbrooke and Masao that at least the earlier phases of this tradition were made during the Late Stone Age and so they must have been made by hunter-gatherers. The dominant subject matter of humans with bows and arrows and wild animals then implies self-depiction.

Currently, many of the wards and villages where the Naturalistic paintings have been recorded are inhabited by pastoral and agricultural groups. Warangi form the largest group while the Cushitic-speakers, the Waasi, dominate only in Thawi and Kolo wards. Given my analysis of the origins of these groups (Chapter 2) neither seems likely authors of the Naturalistic tradition. Comparing the Naturalistic tradition with better known neighbouring hunter-gatherers traditions shows intriguing similarities, but also many differences.

In southern Africa, south of the Zambezi River, the art of the hunter-gatherers dominates. San rock art is widespread in South Africa (Lewis-Williams 1981; Blundell 2004), Zimbabwe (Garlake 1987, 1995; Mguni 2002, 2004), Lesotho (Smits 1971) and Namibia (Lenssen-Erz & Erz 2000). San rock art is fineline but both the human and animal forms used (**Figure 64a, b**) look different to those in the rock paintings of Kondoa District. Only certain postures and actions are similar, as noted by Lewis-Williams (1986).

The overall typology of San rock art shows some overlap with my typology for the Naturalistic paintings of Kondoa but the styles of the two traditions are distinctly different as noted by Smith (1997, 2005 2006, 2010). These two traditions are also separated by at least 1700 kilometres. Whatever similarities Lewis-Williams (1986) have may recognised, these are certainly two different traditions of art with different meanings and authorship.



a: San rock painting from Western Cape, Republic of South Africa (Source:Mguni, S)

b: San rock painting from Matopo, Zimbabwe (Source:Mguni, S)

Figure 64: San rock art from southern Africa

In between the Naturalistic tradition of Kondoa and San rock art lies a corridor of hunter-gatherer tradition rock art made by BaTwa or Pygmy groups (Clark 1959; Smith 1997, 2005, 2006). This is characterised by geometric designs and has been termed the 'schematic' art zone (Clark 1959). This is fundamentally different to the Naturalistic tradition of Kondoa. It has almost no shapes in common with those I recorded and it is finger painted. While Smith (1995; 1997:47) recorded a small component of this art as depicting highly stylized humans and animals (less than 10%) (**Figure 65 see Page 175)**, these figures have no similarities with the Naturalistic paintings in Kondoa. And throughout Central Africa, from Zambia northwards, finger painted geometric designs dominate the hunter-gatherer rock art. Audax Mabulla (2005) has shown that this geometric tradition reaches into Tanzania, quite close to Kondoa at Nyabirungu in Musoma rural district. Namono (2010) shows that the tradition extends even further north into Uganda and Kenya (see also Coulson & Campbell 2001).

Figure 65: Stylized humans and animal figures from Kasama, Zambia (Source: Smith, B. W)

Figure 66: Geometric tradition circles from Nyero, Uganda (Source: Namono 2010)

Figure 67: Geometric motifs from Musoma rural district, Tanzania (Source: Mabulla 2005)

The Naturalistic tradition of Kondoa therefore sits 1700 kilometres north of the San rock art zone and exists as an island within a dominantly geometric hunter-gatherer rock art zone. While the authorship of the other zones of hunter-gatherer art has been carefully argued, in Tanzania, the authorship is less than clear as Masao (1979, 2007), Madokoro (1982) and Mabulla (2005) have noted. Those who have assigned authorship (e.g. Ten Raa 1971; Lewis-Williams 1986; Lim 1992; Smith 2005, 2006) have asserted or assumed it rather than demonstrated it.

I argue that from the distributional and relative dating evidence there can be little doubt that the Naturalistic paintings in Central Tanzania are the works of hunter-gatherer groups (Chapter 1 & 2). In north-central Tanzania, including Kondoa, the archaeological, linguistic and genetic evidence (Chapter 1) indicates that at least two groups of hunter-gatherers occupied the area. These then are the most likely authors.

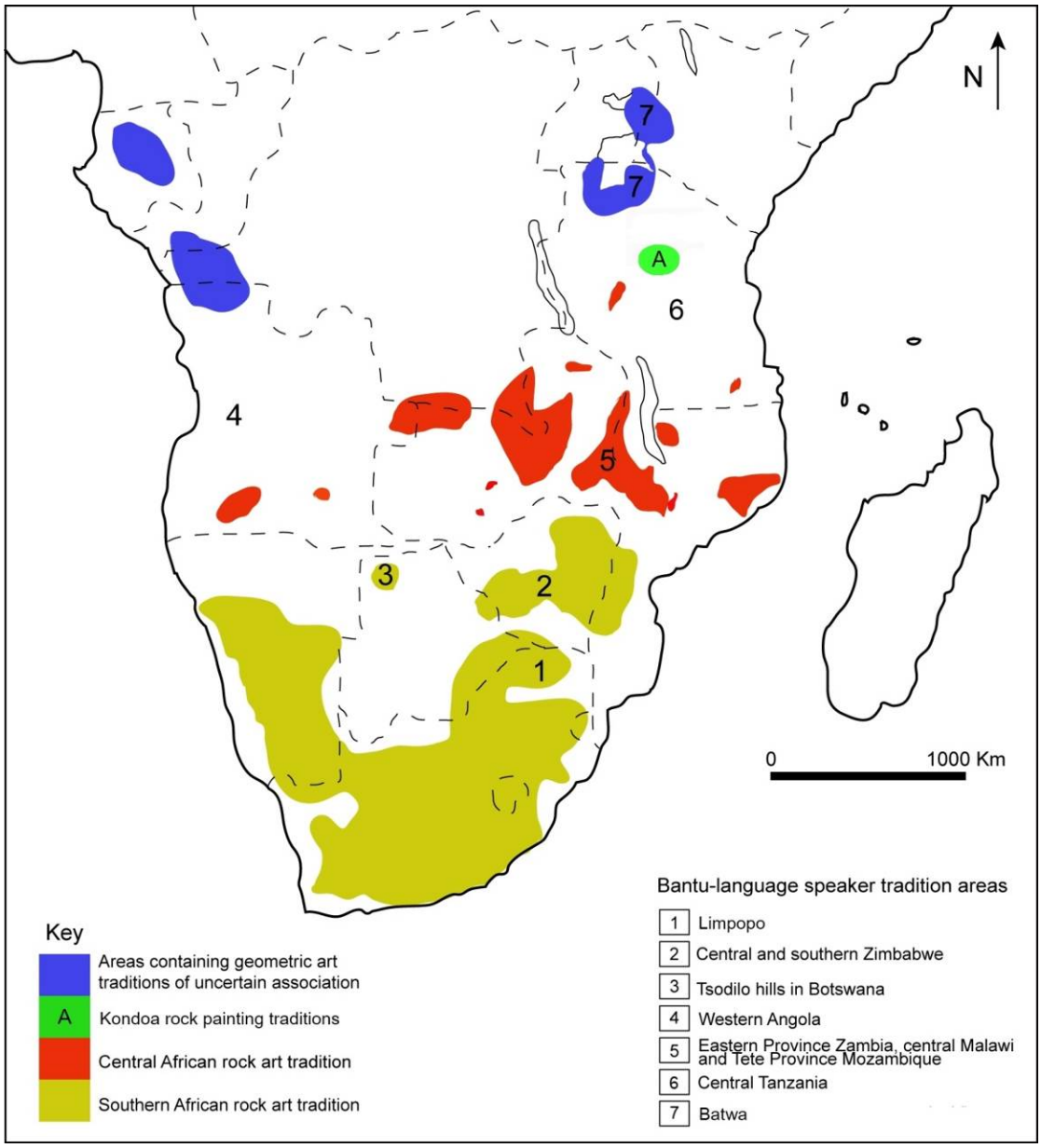


Figure 68: A map showing rock art traditions southern Africa regions (revised version of Smith 1997; figure 18)

Authorship of the Naturalistic paintings

In Chapter 1 & 2, I discussed how two groups of hunter-gatherers, known today as the Hadzabe and Wasandawe, have occupied Kondoa District for many millennia. These two groups live away from where I have documented most of the Naturalistic paintings. The Wasandawe group live in the south-west corner of the area, in which Naturalistic tradition sites have been documented while the Hadzabe live at Mang'ola, near Lake Eyasi, about 150 kilometres north-west.

In 1971, Eric Ten Raa reported having seen a Wasandawe individual making rock paintings. This strongly influenced later researchers, such as Lewis-Williams and Lim, to assume that all of the Naturalistic tradition was made by the Wasandawe. The problem with this is that it is very clear from written reports by Ten Raa that some of the images he saw painted fell into my White tradition paintings, not my Naturalistic tradition paintings. The Wasandawe ascription led these scholars to try to tie aspects of Wasandawe ritual and tradition to the art. I will now assess the plausibility of these explanations as this goes to the heart of whether the ancestors of the Wasandawe were the likely authors of the paintings.

Ten Raa (1971: 43–5) recognised three categories of rock paintings made by the Wasandawe namely: (a) casual, (b) magical and (c) sacrificial rock paintings. Casual rock paintings are a kind made without ritual association. Magical rock paintings were associated with hunting rituals and practices before a hunt. In their hunting rituals the Wasandawe performed rites of inductive magic; this took the form of the hunter making an effigy of the animal he expected to kill. For instance, Ten Raa witnessed a young Wasandawe man drawing a kudu on a mud-plastered house wall. The reason for killing the kudu was associated with getting the meat, skin and horns he needed for a *simbó* ritual (*ibid*: 43). The drawing of animals prior to a kill was done in both Wasandawe house and rock shelter contexts. In 1960 at Swaga Swaga Game Reserve, west of Kondoa District, Ten Raa observed a Wasandawe hunter making a painting in a rock shelter. Ten Raa wrote:

> "----began to draw on the rock a picture of what he described as a giraffe. As painting materials he used red ochre and water. He ground a lump of ochre

> between stones, mixed it with a little water from his gourd and applied it to the rock with a spatula-shaped stick and with his fingertips, adding some spittle in the process. He sharpened the stick with his knife, and then drew an outline of the head and the body, adding the legs and the tail later, but omitting such detail as the manes and the genitals; then he filled up the entire drawing with red ochre so that it become solid red"(1971:44).

This experience made Ten Raa suggests that some of the Naturalistic paintings could be associated with Wasandawe hunting magic.

Sacrificial rock paintings are related to sacrificial sites on clan spirit hills. The sacrifice was performed away from the residence, mostly at the foot of a large boulder or overhanging rock. These places are highly respected and some are governed by traditional law and protected by a traditional custodian. To show the respect to the sacrificial site no tree or grass may be cut, no animal may graze in the area and hunting and farming activities around the site are forbidden. The sacrifices made here are related to rain-making and healing. During the ritual process at the site, the Wasandawe leader splashes the blood and chyme of the sacrificial animal onto the rock surface to honour the spirit ancestors. The sacrifice was concluded by a ritual leader who drew the image of the sacrificial animal onto the wall of the rock shelter. The purpose of drawing the picture was to inform the spirits and other clan members that a sacrifice had occurred (Ten Raa 1971:48–9). This shows that the Wasandawe have inherited the skills and knowledge of making paintings from their ancestors.

Ten Raa linked some sacrificial painting sites, for example Marebu (1971:49) with the specific sacrificial rituals of *simbó*. Marebu has a series of finger-painted human figures, some in solid white and others in red. The shapes described from Marebu are typical of my White tradition, not the Naturalistic tradition. Ten Raa was told by a local informant that these figures were associated with *simbó* and he observed *simbó* dancers running up to the shelter during a ritual performance. Ten Raa described *simbó* as a 'Wasandawe spirit possession cult of fertility'. *Simbó* dancers have the ability to smell out harmful substances which may cause bad health and create other problems such as infertility.

Ten Raa, who worked mostly in Usandawe, recorded a total of sixteen rock art sites. He found evidence at ten of these connecting them to Wasandawe hunting magic and sacrifice rituals while at six others he found no evidence of a connection to Wasandawe people. These other sites could have lost their connection to the Wasandawe or they may belong to other groups. Equally, those sites currently connected to Wasandawe rituals need not have been exclusively used by the Wasandawe. Ten Raa associated all ten of the sites with Wasandawe connections to *simbó* and/or hunting rituals. At end of his paper (1971: 57), he admitted that further research into the rituals of *simbó* was needed in order to understand the relationship between the rock paintings and*simbó*. A similar comment was made by Lim some 20 years later during her work in Usandawe (1992). I therefore followed up this matter with the aim of seeing if common images within the Naturalistic tradition could be tied to specific traits seen or described within *simbó* rituals.

Two of my Wasandawe ethnographic informants from Kwa Mtoro and Gumbu villages in Kondoa, Ms. Mwanaidi and Mr. Sono, commented on the proposed links between rock art and *simbó.* They linked some Naturalistic figures (**Figure 69, Page 181**) with *simbó* performers. An example is the depiction of human figures with their arms raised. Raising a hand up is a posture adopted by dancers when they are asking for assistance from a relative/friend to bring a dancing stick or horns into the dance arena. It also expresses the requirement for a relative to tighten their dancing cloth. Another person noted that the raising of hands can be associated with a dancer asking a relative to bring ceremonial beer. I witnessed a dancer raising his hand to request a relative to tighten his cloth. Perhaps the raising of the hands can serve all of these purposes.

Figure 69: Human figure raising up his hand to touch a horn and dancing stick, Thawi Chini

Similarly, the two figures seen in figures **70 & 71** were described as a *simbó* dancer who bends forward and then collapses, sometimes in a state of trance. It is common to observe people collapsing during the *simbó* dance.

Figure 70: Human figures bending forward, Pahi

Figure 71: Human figure with simbó collapsed, Iyoli

Figure 72, Page 183 was identified by my informants as a *simbó* dancer putting a dancing stick up to his nose. This action helps to direct a dancer towards the place where the sacred *simbó* rocks are buried. The finding of these rocks is fundamental to all *simbó* rituals (see also Ten Raa 1971:49)

Figure 72: An example of a figure with dancing stick, Busi-Pahi

A few of my informants interpreted **Figure 73, Page 184** as an animal hide. Ten Raa (1971: 43) described a Wasandawe man killing kudus in order to obtain their meat and skin. I was told that the figure could be the skin of an animal slaughtered during the *simbó* ceremony.

Figure 73: Animal hide slaughtered during simbó ceremony, Kolo B2

Figure 11a, Page 78 in Chapter 3 has been interpreted in the past as two groups of men fighting for a woman (Leakey 1983; Chami 2006). I was informed that the person in the middle has *simbó* diseases which give him/her energy to jump and run away from home residence. The four people are trying to stop the person from running way. Mr. Sono went further by suggesting that the middle person was wearing a skirt unique to *simbó* dancers. I also witnessed a *simbó* dancer wearing a similar design skirt during a *simbó* dance. Oral tradition indicates that in the past, all *simbó* participants (notably dancers), dressed in this particular type of animal skin.

My informants connected the paintings of wild animals such as giraffe, eland, kudu, and other antelope to the Wasandawe but without any detailed explanations. Ten Raa (1971:43–4) suggested that the painted wild animals have special mythological importance and there is no reason to doubt this, although he does not specify the significance. Masao (2007:77) noted that the giraffe is mentioned in many medicine songs but he didn't specify for which groups. I have seen the depiction of a giraffe on a Wasandawe hut and so I suspect this animal holds importance for them.

A local Wasandawe speaker explained to me that the horns of antelope such as the kudu and eland are essential instruments in *simbó* ritual dance ceremonies. Eland horns are used as rhythm beats for female singers and as dancing sticks for the dancers, while kudu horns can also act as dancing sticks for the dancers. The horns chase away evil and assist *simbó* dancers to travel far in their trance visions, but without losing direction. These horns are regularly depicted in the paintings.

Imogene Lim (1992) linked some rock paintings in Usandawe with the Wasandawe *iyari* traditional ritual celebration for the birth of twins. This ceremony uses painted wooden boards that employ red, white and black symbolism (Lim 1992). The rituals relate to sacred beliefs about the baobab tree and connect it to rain-making. The problem of this work for my study is that it conflates the paintings into a single tradition and interprets them as a seamless whole.

However, I have shown that the red, white and cattle paintings belong to different traditions, each with different distributions and made in different periods (Anati 1986). It is impossible that all three traditions were made by the Wasandawe. Some of Lim's explanations related to paintings belonging to the White tradition. My data do not support the idea that the White tradition evolved from the Naturalistic tradition; therefore if the Naturalistic tradition was made by the Wasandawe, then the White tradition was not. For this study, the conflation of the paintings in Lim's work fundamentally undermines the supposed links to *iyari*. I do not believe therefore that Lim's study is helpful in the ascription of authorship to my three traditions.

Whilst the links to *iyari* may not be convincing, the other links to Wasandawe rituals and beliefs that I have listed above, particularly those linking to *simbó*, are collectively strong enough to justify a linking of at least some of the Naturalistic tradition rock paintingsto the ancestors of the Wasandawe. The ethnographic evidence therefore gives strong additional support to my statistical strands of evidence derived from my distributional and stylistic sequence analysis that pointed to the Wasandawe as the most likely authors.

Mabulla (2007) and Masao (2007) have argued that the ancestors of the Hadzabe also painted some Naturalistic paintings in north-central Tanzania. Ashura Bendera (2011) documented rock paintings in the Hadzabe area that have similar subject matter, colour and methods of depiction

to the Kondoa Naturalistic paintings. Ten Raa (1969a, 1970) described small groups of people who lived among the Wasandawe and whom he considered to have been historically Hadzabe (Chapter 2). Genetic and linguistic evidence (Chapter 1 & 2) has also shown a long relationship between the Hadzabe and Wasandawe groups. Very little is known of the traditional ritual practices of the Hadzabe and it is unclear whether they had a comparable ceremony to *simbó*. In 2003, I worked with the anthropologist Frank Marlowe from Cambridge University and I observed a Hadzabe night dance somewhat similar to *simbó* but I cannot be sure that it was the same, nor if it had any relationship to rock paintings.

Given their relationship to the Wasandawe and their presence in the Kondoa landscape, it is possible that the Hadzabe were also authors of some of the Naturalistic tradition paintings in the past. It remains to be seen whether regional variations within the Naturalistic paintings could reflect social complexities within the former hunter-gatherer peoples, such as differences between the Hadzabe and the Wasandawe. And, there must have been other hunter-gatherer groups no longer discernible. The Hadzabe and Wasandawe cannot have been the only hunter-gatherer groups. There must have been others like them whose names and languages are now lost**.**

Given the great age of at least some of the Naturalistic paintings it is therefore probably better for us simply to ascribe the authorship of the Naturalistic tradition to 'local hunter-gatherers'. Trying to name them as 'Hadzabe' or 'Wasandawe' may mask the true complexity of the original authorship of the paintings. The modern Hadzabe and Wasandawe are remnants of what must have been a complex tapestry of hunter-gatherer groups. We can expect that their ethnographies will explain some, but probably not all of the subjects and symbols depicted in the Naturalistic paintings.

However, as Ten Raa (1981:93) has shown, the Wasandawe have had interaction with Southern Cushitic and Bantu language-speakers for many centuries. This interaction has had profound effects on Wasandawe society, rituals and beliefs. The Wasandawe have adopted some of their rituals, including rain-making, certain marriage customs and the keeping of livestock. Therefore, one needs to be careful when using Wasandawe and Hadzabe ethnographies to interpret the rock art. Not all aspects of these ethnographies will necessarily be pertinent to the era in which the art

was made. Some rituals, such as *iyari*, may have their origins only in more recent interaction contexts with either farmer or pastoralist groups.

White tradition

This tradition is dominant only at the foot of Pahi hill. Other scattered sites were found in similar locations in the villages of Kiteo, Mrijo and Kandaga. This tradition occurs together with Naturalistic tradition paintings in the villages of Pahi, Kinyasi and Itundwi. Common White tradition motifs include geometric designs such as circles (some with internal or external lines), zig-zag line and parallel lines, grids, dots, ladders, rectangles, snake-like meanders, human figures as well as a few zoomorphic motifs. All are executed in white and are finger painted; yellow finger paintings are rare. This tradition is only found in Kondoa, but it shares some characteristics with white paintings recorded in other parts of Tanzania such as at Bahi (Culwick 1931a, b); Mbeya region (Whiteley 1951); Tabora region at Ukimbu (Shorter 1967) and Makolo in Unyamwezi (Collinson 1970).

Comparable traditions exist in Kenya (Kenny 1976) and parts of southern and central Africa (Phillipson 1972; Juwayeyi 1991; Smith 1995, 1997; Namono 2004, Zubieta 2006, 2009). These are recorded in various areas: Limpopo Province, South Africa (Willcox 1984:148; Prins & Hall 1994; Namono 2004), central and southern Zimbabwe (Cooke 1969; Garlake 1987); Tsodilo hills in Botswana (Campbell *et al*. 1980; Campbell *et al*. 1994); Eastern Province, Zambia, Central Malawi and Tete Province, Mozambique (Smith 1997; Zubieta 2006). In southern and central Africa these finger painted white rock art traditions have all been associated with farmer groups and specifically with Bantu language-speakers (Smith 1997).

The particular distribution of the White tradition in Kondoa gives further support to a possible agro-pastoralist authorship as the sites are located in the kinds of flatter and more fertile areas preferred by farmers and pastoralists today. The archaeology of Pahi where these white motifs concentrated has shown pastoralist and Bantu language- speaker settlement extending back some centuries (Kessy 2005).

When examined, the superpositions seen at Pahi showed the repeated placement of White tradition motifs over Naturalistic tradition motifs. Using superposition and the freshness of the colour of the white pigments, most scholars (e.g. Masao 1979; Leakey 1983; Anati 1986) agree that the White paintings are newer than the Naturalistic tradition paintings. Masao (1979) and Anati (1986:54) have suggested that some of the White tradition paintings are more recent than 200 years ago. This date corresponds well with the late farmer settlement of Pahi village (Kessy 2005; Lane 2009). However, we should note that this date is based on observations rather than scientific dating techniques and cannot be taken as a definite date for all White tradition art in Kondoa.

My statistical analysis indicated that White tradition paintings are mostly found in small and medium sized shelters at the base of hills (Chapter 5). The areas where this art is found are today occupied by both the Waburunge and the Warangi. Both groups have been living in these areas for many centuries (Fosbrooke 1958a,b; Östberg 1986). On the other hand, my data showed White tradition paintings are distributed over the majority of the Warangi Bantu language-speaker villages. Within Warangi villages also live a small number of the Waburunge. Only one village (Mrijo) has White tradition and is settled by Waburunge (majority) and Warangi. This may also suggest the possibility that the Warangi are authors of the White tradition.

Examination of White tradition motifs shows strong similarities to other rock art traditions that have been linked to initiation and rain-making rituals conducted by Bantu language-speaker groups (Prins & Hall 1994:93; Smith 1995, 1997; Namono 2004). This does not help to refine knowledge of authorship because, in Kondoa, both rain-making and initiation rituals were practised by both Waburunge and Warangi groups (Fosbrooke 1958a, b; Bwasiri 2008:43). Indeed, some of these ceremonies are conducted jointly by these groups, opening up the possibility of joint or shared authorship.

Östberg (1986) who carried out interviews with the Waburunge and the Warangi showed that the Warangi forced the Waburunge to leave Pahi and move away to the north and west (Chapter 2, for details). The implication of this is that if the paintings are older, then they are more likely to be Waburunge and if they are younger, then they are more likely to be Warangi. Equally, we

know that these groups intermarried and intermixed and so a creolized combination of both is also possible.

Distributional and superpositioning evidence, oral traditions, comparative analysis with neighbouring rock art regions and archaeological research all point to the authors of the White tradition art being either farmers or pastoralists. But, these strands of evidence do not allow for a clear decision between Waburunge or Warangi authorship. I will now introduce the results of my interviews with local people to consider this choice further.

Authorship of the White tradition

The Waburunge and Warangi are talked of as different and distinctive groups, but equally share much in common. For instance, Waburunge and Warangi people told me that the Waburunge were considered to be lazy in their agricultural activities but experts in rain-making rituals. When the land becomes dry, the elders from the Warangi group meet with the Waburunge and ask them to conduct rain-making rituals. One Warangi elder told me that there was a time when a Warangi and Waburunge family had a conflict and this resulted in the Waburunge stopping the rain. Warangi elders then took a sheep and offered it to the Waburunge elders to ask for forgiveness. After the Waburunge elders received the sheep it started raining in less than one week. Since that time, the Warangi have respected the Waburunge and they live together peacefully. The Waburunge still conduct rain-making rituals at Kondoa rock painting sites. For example, the Waasi/Alagwa and Waburunge use *Mongomi wa Kolo* for their rituals (Chalcraft 2004, 2005; Bwasiri 2008).

The Waburunge, however, still paint on hut walls during girls' initiation. Some of these painted wall images have similarities to White tradition motifs. For instance, human shapes observed on a Waburunge hut/house (**Figure 74, Page 190 & Figure 84, Page 221**) resemble in shape the White tradition motifs **(Figure 77a, Page 192)**. The difference is that the figures painted on the hut walls were depicted by black and white dots while in Lusangi, the paintings of human figures were white finger painted. The difference in manner of depiction and colour might be explained by the changed context. Concerning the White tradition shape seen in **Figure 76, Page 191**, I was informed that in Waburunge oral tradition it represents a boys' initiation symbol for hut

construction. During initiation, boys learnt Waburunge culture, including hut construction. The trainer used that sign to explain and describe how to construct houses. Oral traditions from Waburunge managed to link **Figure 76, Page 191** with boys' instruction about hut construction during initiation. The figure looks similar to the huts of both Waburunge and Warangi (**Figure 75, Page 191**). The difference between **Figure 75 & 76** is caused by the change in the way of life after colonialism, when things changed from traditional to modern. This went together with a change in the construction style of huts. What we see today for the construction of huts among the Waburunge is different from the past. A small number of the Waburunge people also mentioned that the rock paintings were made by their ancestors during initiation.

The Warangi have mostly converted to Islam and have therefore abandoned many traditional rituals, including initiation. Some community members still remember how paintings were made during the ceremony. One of my Warangi research team members informed me that some White tradition motifs were made during initiation ceremonies using python droppings. The droppings were also used to smear circumcised girls and boys faces in order to protect them from 'bad' people. The smearing was described through various images related to ritual and python droppings were used as raw material. My informant continued by arguing that during initiation both boys and girls went to the hill to search for and collect the python droppings. This explanation suggests the possibility of Warangi authorship of the White tradition motifs.

Figure 74: Different figures drawn on a Waburunge hut wall during girls' initiation

a: Warangi hut **b: Waburunge hut**

Figure 75: Examples of the Waburunge and Warangi huts

Figure 76: An example of rock art painting that resembles to the Warangi and Waburunge huts

Using a combination of oral traditions, motif choice, study of material objects used in modern rituals and the history of settlement, I conclude that the White tradition in Kondoa is most likely the work of ancestors of both the Warangi and Waburunge. The concentration of the White tradition in their areas is not enough of a factor to justify sole Warangi authorship. Arable land for agriculture influenced the Warangi to settle in similar areas to the Waburunge. This is why, today, there is a concentration of the White tradition in the Warangi villages. The exact time or period when the Warangi and Waburunge came into contact and lived in the same area is not apparent. This makes it difficult to know the age of the White tradition paintings. Based on

Southern Cushitic and Bantu language-speaker settlement in north-central Tanzania including Kondoa (Chapter 1), I suggest a tentative age of the White tradition between 1500 and 200 years or more recently. Paintings from the period from 1500 to 600 years belong to Waburunge and 600 to 200 years belong to Warangi people. Separation of Waburunge or Warangi motifs requires careful anthropological work among the two groups, to examine material culture objects among them and find links with White tradition motifs. This task also will resolve the function and meaning of some rock motif paintings within this tradition.

a: White human motifs, Markazi-Pahi

b: White human and dots motifs, Lusangi-Pahi

c: Sun with rays, Kiteo

d: White Dots, Lusangi

e: Crescent moon,Turiani-Mrijo **f: Circles, Ncholincholi**

g: Red dots, Lusangi-Pahi **h: Red dots, Busi-Pahi**

Figure 77: Examples of geometric figure forming White tradition in Kondoa sites

Cattle tradition

The distribution of Cattle tradition images in Kondoa closely follows that of the White tradition, (see data analysis in Chapter 5). It is recorded at the villages of Pahi and Kandaga. All of the sites are situated at the base of the escarpment, occupying large and small shelters, found together with white IA materials, similar to the White tradition. But, the White tradition is more widespread in the landscape than the Cattle tradition. In the Lake Victoria basin of Kagera region, there are also to be found stick-like cattle figures executed by red finger (Chaplin 1974).

The stick-like cattle style design differs by manner of depiction from the Cattle tradition in Kondoa, suggesting different artists.

The cattle tradition recorded in Kondoa has some similarities with cattle images found at Mount Elgon, along the border between Uganda and Kenya, and with a broader tradition of art found in the Horn of Africa in countries such as Ethiopia, Eritrea and Somalia (Graziosi 1964; Červíček 1971; Červíček & Braukamper 1975; Brandt & Carder 1987:200–3). These similarities are not enough to imply the same artists but rather different groups who practised similar activities such pastoralism and agriculture on a small scale.

I noted earlier that the areas with the Cattle tradition in Kondoa have had a long occupation by both farmer and pastoralist groups (Fosbrooke 1956; Kessy 2005; Lane 2009). The farmer groups practise mixed farming, including agriculture and keeping domesticated animals such as cows, goats and sheep acquired from the early pastoralist groups which inhabited Kondoa (Chapter 1). Superposition analysis in Chapter 5 showed that White tradition images overlay black cattle images which are the key element used to define the Cattle tradition (**Figure 59, Page 158**). The superposition suggests two different authorships with the Cattle tradition being seemingly older than the White tradition. The problem associated with superposition in relation to the White and Cattle tradition is that the farmer and pastoralists groups survived in the area in the same period and shared some activities (agriculture and pastoralism).

Archaeological evidence (e.g. Masao 1979; Kessy 2005) presented in Chapter 1 indicated that remains of domesticated animals were found mixed with Iron Age materials. The archaeological evidence and my rock painting analysis suggest that the farmer and pastoral groups used the shelters in the same period. One group, either farmers or pastoralists, used the shelters for seasonal activities such as rituals and then moved to other locations/areas for socio-economic reasons after which the other group came to occupy the same shelters. Sharing of shelters makes definitive attribution of either farmer or pastoralist authorship more complex.

The small number of sites (rare), their distribution and scattered nature are more indicative of nomadic groups. Socio-economic activities between farmer and pastoralists assist to narrow down the authorship hypothesis. Farmer groups have tended to settle in one area for ages,

cultivating different crops and keeping domesticated animals until the land become unfertile. In contrast, pastoral groups have a tendency of living a nomadic life, following water and green pasture with the aim of feeding their cattle.

Because of their frequent movement, sometimes it is difficult to trace pastoralist evidence archaeologically, especially where this group lives in the same location as farmer groups who also own cattle. Rock art motifs can be helpful for understanding the pastoralist movement and understanding site motif distribution may also assist to resolve the problem. The rarity of cattle sites and their scattered distribution suggest the nomadic life style of pastoralists. It is therefore argued that the Cattle tradition distribution corresponds to pastoralist groups who have lived in Kondoa for centuries.

Kondoa has two groups of pastoralist societies (Chapter 1 & 2); Southern Cushitic and Nilotic. The Southern Cushitic group practise mixed farming and tend to stay in one area for years while Nilotic groups depend on cattle keeping economically and only recently changed to practise small scale farming. Hence, the distribution of Cattle tradition sites seem to suggest that it belongs to Nilotic groups rather than Southern Cushitic.

In the Horn of Africa Brandt & Carder (1987) associated cattle with pastoral groups. Similarly cattle and geometric art images at Kakapeli site were ascribed to pastoral groups (Odak 1989). Pastoralists have made art for various reasons including to prevent illness, misfortune or to show ownership (Barrett 1977; Russell 2013:4–6). My ascription of authorship of the Cattle tradition to pastoralists is not unique and fits well with the findings of other researchers in the Horn of Africa and Kenya. Emmanuel Anati (1986) also linked the black cattle images to pastoralist groups. He went further and specifically connected the paintings to Nilotic groups without any detailed justification. A problem with this is that Anati failed to identify the specific group responsible for the paintings, whether it was the Maasai or the Tatoga (32–55). I turn to examine the socio-economics of the two Nilotic groups that lived in Kondoa for centuries and see how I can use this to explain the authorship of the Cattle tradition.

Traditionally, Tatoga males wore round ivory plugs, while women wore coiled glass rings with leather or small chain tassels attached. Both genders wear glass beads on string around their

necks but only the women stitch the beads in geometric patterns on their clothes. The women also wear leather skin made of strips of hide from impala, goats and sheep. Tatoga girls wear a hide decorated with many white and red beads (Klima 1970). Nowadays both men and women wear cotton cloth with green and black colours. A majority of women decorate themselves by tattooing circular patterns around their eyes.

Historically, the Tatoga are a cattle-herding community, owning large numbers of cattle. They depend on cattle for their survival. They have diversified to agriculture in recent times, cultivating maize, beans, millet and sorghum on a small scale. The Tatoga also made iron objects, used for making spear blades, arrow points and animal brands. Masao (1982), working in north-central Tanzania, saw similarities between Tatoga spears designs and some rock paintings. Without giving any detail, he suggested that some paintings were probably made by members of the Tatoga group.

Some Tatoga clans specialize in rain-making (Klima 1970; Wilson 1952, 1953). They practise polygamous marriages, with wives ranked according to order of marriage. Each wife is given her own cattle to serve her for milk and other product. Cattle are used for paying bride wealth to a girl's parents (Klima 1970:65; Wilson 1952, 1953).

Economically, they depend on cattle as a source of income and it is a most valued animal. Other domesticated animals such as goat, sheep and donkeys are also kept. In addition, a few chickens are also kept as women's property. Every cow has a distinctive brand on its body. Klima argued that the brand was not an indication of family name or owner but rather was used as a traditional way of protecting cattle from diseases (1970). Working among the Tatoga in north central Tanzania, Tomikawa (1972) however conducted Klima and argued that the branding of cattle was an indication of individual or clan ownership.

Cattle products such as meat, fat, blood, horns, hide and cow dung are used for serving different purposes: rituals, food and in various construction activities (Klima 1970:10–13). For example, long horns are used as cups for serving honey beer, while short horns are used for storing tobacco. In Kondoa, some black cattle in the art have long horns, but this does not suggest that they were painted by Tatoga people. Cow dung is used for two purposes: (i) constructing Tatoga

huts and funeral monuments, and (ii) to supplement firewood as a fuel (Klima 170: 10–13). Besides cattle, other domestic animals play a critical role in the daily lives of the Tatoga people. For instance, donkey is special for carrying heavy goods while sheep are the favoured sacrificial animal for certain rituals. Goats are used for meat and milk supply, to supplement cows' milk during the dry season (Klima 1970).

A black ox is the preferred sacrificial animal during a major ritual ceremony and particularly for funerals (Klima: 1970). During ritual ceremonies, men drink honey beer as a sacred drink. High-ranking male elders and some well-known women are given burial respects and a funeral ceremony. The funeral ceremony ends within a year. Ordinary people and children are not buried. They are carried eastward from their hut and placed on a spot to be consumed by hyenas (Klima 1970).

Transition from childhood to adulthood involves circumcision for both genders. Girls are circumcised at the age of about six years. Their ceremony is always simple and without special arrangement. It is carried out at home, without publicity. Things are different for boys as special arrangements are made, including notifying relatives and friends. Honey is brewed and consumed by elders during the ceremony as part of the rituals. The circumcision itself is held at a distance from homes; the young boys build a thorn shelter east of the kraal. During the circumcision period, boys learn how to make and throw spears and sticks and how to construct kraals (hut) while girls learn how to carry out domestic work (Klima 1970:54).

The processes of becoming adult men are completed after the killing of dangerous animals such as lion, elephant, rhino or buffalo. These are animals that the Tatoga people believe to be "enemies of the people" (Klima 1970:55–8). The Tatoga man who kills a lion is congratulated and given the opportunity to visit a chief for a few days. The chief gave him permission to sing and walk around the villages. Relatives, friends and villagers give him cows as a sign of his heroism (Wilson 1953).

In the spirit world, the Tatoga belief system is centred on objects and natural things. They practise divination, rain-making and sorcery. They believe in one creator god, whom they call *Ase*. The god *Ase* helps Tatoga people to communicate with their ancestors and promotes cattle

fertility (Klima 1970:29). The Tatoga also believe that a certain snake's spirit visits their hut. Cobras, puff adders, black and green mambas are among these living spirits (Klima 1970).

Similar to the Tatoga, Maasai men traditionally wore capes made from calf hides while women wore capes of sheep skin. The Maasai decorate their capes with glass beads. From the 1970s, they replaced animal skin with cotton cloth and prefer to wear cloths of red and black colour while blue coloured cloths are rare. There is no explanation why the red colour is preferred by the Maasai people. They also wear sandals made from hide and bead jewellery (Galaty 1982). Maasai, like the Tatoga, do not bury their dead; instead they throw corpses out of their kraals, believing that they poison the soil (Spencer 2004).

Maasai men raid cattle from their neighbours the Bantu language-speaker and Tatoga groups because of the belief that their god *Enkai* created cattle for them. They also keep goat, sheep and donkeys. Maasai wealth is measured in cattle, similar to the Tatoga. Economic and political status is measured on the basis of the number of cows you own (Galaty 1983). Similar to the Tatoga, cattle are a source of components of the Maasai diet such as meat, blood and milk. Women use mud and cattle dung for building their huts. Husband and wives have an equal rights on the decision to slaughter or trade cattle. Animals such as goats, sheep and chicken are traded for food, beads and other necessities. They also keep donkeys and use them for carrying heavy loads and fetching water. The Maasai supplement their diet with grain and other vegetable food stuffs during the dry season when milk is insufficient. Generally Maasai life revolves around cattle (Galaty 1982; Spencer 2004).

While the Maasai believe in a god called *Enkai*, more priority is given to their traditional religious leader who is called *Laibon*. He is descendant of *Enkai* and therefore has religious power. The *Laibon* provides protective medicines and advice for their traditional ceremonies. The *Laibon* is not a political leader but because of religious authority from the god *Enkai*, he/she has the power to declare war (Galaty 1983).

Maasai life is tied to a series of rites of passage, which commence a few months after birth. When a child reaches the age of four months after birth, parents give him or her name. The name celebration goes together with the shaving of the child's head. These two events are done by the

child's mother and neighbouring women (Spencer 2004:42). At the age of between four and five, the Maasai cut out a child's lower incisors with a knife (Ehret 1998; Spencer 2004:42). This is followed by tattooing on the stomach and other small cuts into the skin in different places, including the ears. These three rituals are performed and celebrated by the child's mother and small numbers of neighbouring women. Sheep are the preferred sacrificial animal during these ceremonies (Spencer 2004:58), which are also stages in a child's preparation for the circumcision ritual.

Circumcision is a crucial event for both sexes. Like the Tatoga, the Maasai boys' circumcision is given more attention than girls and clan members, neighbours and friends are invited. Boys' circumcision happens between the ages of 14 and 20. In the circumcision process, a mother shaves her son's hair. In the morning boys go to the stream to take a bath before the actual circumcision. They then return to their hut (Boma) where the circumcision takes place. The circumcision is always held at the cattle entrance of the Boma. The boy who is to be circumcised wears a black skirt, and is smeared with sheep fat and black ash. He also wears a headdress with two long black ostrich feathers (Galaty 1982, 1983). Mothers decorate their sons with white powder around the eye to conceal them from bad people (**Figure 78, Page 200**). The rite is facilitated by slaughtering ox and brewing mead. Participants celebrate by drinking and eating meat (Spencer 2004:59).

(Source.www.lionguardians.wildlifedirect.org/category/maasai-traditions)

Figure 78: A circumcised young Maasai boy

A girl's circumcision rite is held in a Maasai hut and witnessed by only a few women who are very close to the mother of the initiate. The girl's circumcision is aimed at moderating their sexual desires and thus reducing infections (Spencer 2004).

After circumcision, boys become young warriors and prepare to become soldiers of the community. They live for some days in the bush, learning the ways of protecting their people and their cattle. During this time a boy also learns how to contribute to the welfare of his family through raiding for cattle. The young warrior stage takes five to eight years and ends with "*E-unoto"* rites (Galaty 1982).

The *E-unoto* is a ceremony during which the Maasai celebrate the promotion of a junior warrior to senior level. It takes place once, after fifteen years. The warrior who is promoted should have served their community for not less than eight years. It is a big ceremony, involving a month of preparation. The preparations include the building of temporary village huts called "*manyatta"* a distance from home. Hundreds of warriors from three ranks - senior, middle and lower from different Maasai clans participate (Galaty 1982).

The ceremony lasts for four days and each day has its own events and activities. The first day is called the 'day of the red dance' (Galaty 1982). On this day, participants' assemble outside their huts facing east and elders sing through prayer. The whole Moran's body is smeared with a mixture of red ochre and beef fat. They dance by jumping up and down.

The second day of *E-unoto* is called 'the day of the white dance' (Galaty 1982). The Morans travel from their *manyatta* village to the bush to paint their bodies. They use pastes made of white chalk, white ash, charcoal and red ochre for decoration. Moran who had killed a lion, decorate their faces and bodies with hero designs such lion figures. After decoration of their bodies, Morans depict their brand iron on the outcrop symbolizing their presence (Galaty 1982). Many of the warriors who went to the forest wear ostrich headdress and some lion manes; they carry spears and a shield. After completion of the decoration process, they return to the *manyatta*. Kudu horn is used as a music instrument during the dance and girls decorated with red ochre and black ash join the dance (Galaty 1982).

The third day is called 'the day of sacrifice hut' (Galaty 1982). In the morning a sacrificial ox called the "cow of the ring," black in colour and with a white bell, is slaughtered *(*Galaty 1982:109). The slaughtered sacrificial animal's head always points southwards and its tail northwards. These directions mean that they travelled from the north to south. Its right side should face the east and it's left the west, indicating that sunrise and sunset are associated with life and death (Galaty 1982:367). Moran gathered at the slaughtering place to receive their rings from the hide and to wear on their hands. Then *Laibon* perform a ritual for electing Moran leaders. Senior warriors who have served their community for seven or eight years are promoted to the role of junior elder. The fourth and last day is called "*the shaving day"* where youth have their heads shaved by women (Galaty 1982). Then, they start to return to their households.

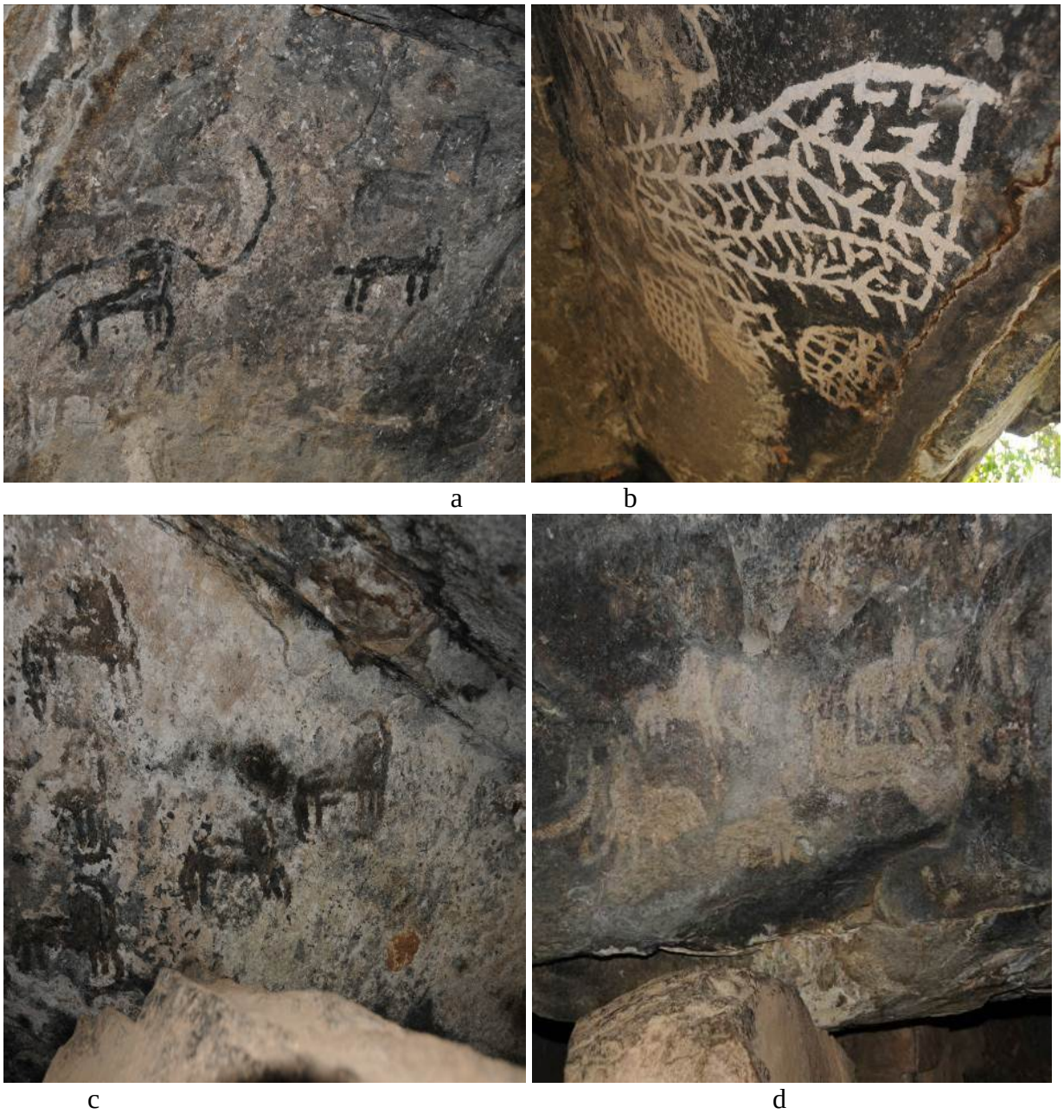
The rite of passage takes places in different places depending on ritual type. For instance, Morans would go to the forest for some days or weeks for feasting. The forest feasting ritual ceremony is known as "*Ol-pul*" (Gramly 1975). The forest trip consists of a number of Morans ranging from five to ten depending on the number of cattle they have. The Morans are accompanied by young boys and unmarried women who assist in the collection of wood for making fires and fetching water (Gramly 1975). During the forest feasting ritual, they would

slaughter a cow and eat meat together with soup mixed with herbs. When they finish eating one cow, they begin feasting on the second one and this goes on until they are all finished, after which they return home. During the feasting, they paint on rock surfaces (Gramly 1975). Forest feasting was also done with the aim of giving Morans encouragement to raid cattle and hunt lion, which are important aspects of the role of Maasai warrior (Spencer 2004:23–4). The feasting ceremony was noted in Samburu people (see Chamberlain 2005, 2006 for detail). The Maasai age-set system with its ritual ceremonies therefore brings unity and solidarity among the Moran aiming to protect Maasai clans and their cattle.

As we see above, the cow is an important animal to both groups. No respected traditional ceremony ritual takes place without the slaughter of a cow. Both Tatoga and Maasai have similarities in some rituals such as disposal of unburied dead bodies and east is considered a direction of death by both groups. The two groups have rites of passage for both girls and boys as signs of the transition to adulthood. It is therefore challenging to ascertain easily who, between the Tatoga and Maasai people, made the Cattle rock painting tradition. Some rituals and their orientation in the Maasai group involve participants painting in rock shelters. But this is not a final justification that the Maasai are the authors of the cattle tradition. It helps, though, to narrow down authorship speculations. Similarly, the Tatoga bury dead bodies eastward and, corresponding to the N-NE direction of one site of the Cattle tradition. This also suggests that perhaps the Tatoga group was responsible for the Cattle tradition. No direct dating is available to associate the paintings and a time of arrival of the Tatoga and Maasai in Kondoa District.

However, archaeological excavations carried out at one of the sites with Cattle tradition paintings has produced dates of 1660 $\pm$100, calibrated to AD 400 on occupation layers (Kessy 2005: 183–6). It cannot be certain that this date links to the time at which the paintings were made, but it is possible. No direct dating work has been attempted in Kondoa, but there is certainly potential for direct dating of this tradition. The work of Bonneau and colleagues in southern Africa has demonstrated the possibility of dating direct black pigments (Bonneau *et al.* 2012). I therefore hold out the hope that we may be able to determine the exact age of the Cattle tradition in the future. In the meantime, we can only say for certain, on the basis of superpositions, that this tradition is older than some of the white paintings and younger than most of the Naturalistic

paintings. This makes it likely to be a few centuries, or possibly a few millennia in age. I will now consider the issue of authorship in more detail.



a b

c d

Figure 79: Examples of the Cattle tradition in association with white images, Lusangi-Pahi

Authorship of Cattle tradition

If I am correct in assigning this tradition to Nilotic-speaking groups then local oral tradition may help to provide a more detailed understanding of the authorship of this art as Nilotic-speaking

Maasai and Tatoga still inhabit the area of the paintings. The emphasis on cattle in the art fits well with both of these groups as cattle are used in most traditional functions and rituals among these them (Gulliver & Gulliver 1953; Gulliver 1955; Schneider 1957; Gramly 1975; Galaty 1982; Chamberlain 2005; Russell 2013).

Evidence in Kenya has shown that the Maasai used to paint in certain rock shelters during their *ol-pul* (Gramly 1975) and *E-unoto* ceremonies related to warriorhood to elderhood (Galaty 1982). Some rituals in the *E-unoto* are oriented east, in a similar direction to the Cattle tradition. The Tatoga ritual of burying the dead and circumcision for boys was oriented east. This refutes Maasai ownership. The *ol-pul* ceremony was always held in a rock shelter. It is not clear why particular rock shelters were selected for *ol-pul* ceremonies. Gramly suggested that it was probably because of the protection from wind, rain, dangerous animals and privacy (1975). During the ceremony, Maasai warriors slaughtered cattle and ate meat for some days. Gramly observed that the roof of the shelter where *ol-pul* ceremonies took place was characterised by cooking soot and rock paintings of figures such as humans, geometric designs and Maasai shields. The most common colours used were white and red.

Similarly, Samburu of the northern Kenya, a Maa-speaking group close related to Maasai. They practise the ritual of meat feasting in rock shelters similar to the Maasai. Natasha Chamberlain (2005) recorded 21 rock shelters and some have painted images. Local people directly connected the painted motifs to Samburu Moran. Common images are human figures in red associated with Moran warrior dancing group, geometric figures that the Samburu linked to women, hand prints, arrow shapes and horizontal red line. Other figures, both human and geometric, were executed in white pigments (Chamberlain 2005, 2006). Thembi Russell (2013:14, see also Chamberlain 2005) thought the white images to be older than the red images. It is therefore clear that meat feasting is a common traditional ceremony amongst pastoralists and these feasts are held for number of different reasons (Gramly 1975; Galaty 1983; Chamberlain 2005; Russel 2013).

From my own field observations I can confirm that shelters with Cattle tradition paintings always have considerable evidence of cooking soot (see also Kessy 2005) similar to that witnessed by Gramly in Kenya. In Pahi Kessy (2005), found that these shelters with ceiling soot were also associated with the remains of domesticated animals, notably cows, suggesting possible ritual

use by pastoralists. My analysis also showed that all shelters with Cattle tradition images also have other figures depicted in white pigments (**Figure 59, Page 158** that look somewhat similar to those described by Gramly (see also Lynch & Donahue 1980:76–8). These images could therefore all be of Maasai authorship. This therefore seems the most likely; the bulk of the evidence seems to favour Maasai authorship.

Oral traditions that I collected in Kondoa from Maasai people (Chapter 7) confirmed some of the findings reported by Gramly in Kenya. I was told that Maasai paint on rocks during *ol-pul* ritual ceremonies. The most detailed description I was given came from Mr. Geoffrey Olemwita, a Maasai warrior who works for the Antiquities Division, at the Laetoli office station. In his explanation he said that he had participated in various *ol-pul* ritual ceremonies while he was young. According to him, during the ceremony they slaughtered cows, ate meat and drank blood. During the day, they drew numerous shapes, including cows, geometric designs and humans onto the rock using white pigments. He was able to mention a few of the sites he had seen in the Serengeti National Park where these rituals were carried out and he was able to describe the rock art images depicted in them. Olemwita added that white colour is favoured, but that other colours such as red and black are also used.

A similar explanation to the one by Olemwita was given by Magreth Kaisoe, a Maasai woman who also works for the Antiquities Division, at the Laetoli office station. She explained to me that Maasai paint on rock during the *ol-pul* ceremony. According to her some *ol-pul* paintings at Laetoli were painted 1800 years ago (pers. Comm. 2013; see also Antiquities file, Laetoli footprint project). In conjunction, black colour is used in a number of Maasai ceremonies. For example it is smeared on the face of young Maasai girls and boys during their circumcision. Based on this ethnographic evidence I therefore argue that the balance of evidence points specifically towards Maasai authorship for the Cattle tradition paintings.

In summary, this chapter suggests the likely authorship of each tradition within the Kondoa rock paintings. The process of ascribing authorship was complex because some traditions have multiple authorships identified from multiple sources of evidence.

Comparative study of Kondoa rock painting motifs with rock art in surrounding areas was useful but not definitive. The Kondoa motifs did not exactly fit with those in other areas. For instance, Cattle tradition motifs found in Kondoa were different from other cattle motifs found in the Horn of Africa and Kenya (Graziosi 1964; Červíček 1971; Červíček & Braukamper 1975; Gramly 1975; Brandt & Carder 1987:200–3). Similarly, the Naturalistic tradition, which I expected to be similar to San rock art in South Africa (Lewis-William 1981, 1986; Leakey for details), also showed great differences with it.

Despite a long history of interaction and the sharing of rituals among the groups that have inhabited Kondoa, some groups have maintained their cultural identity and explained it using rock painting motifs. The Wasandawe people were able to link some paintings to their *simbó* ritual, as did Maasai, Warangi and Waburunge. Oral tradition from these groups supplemented site distributions and ethnography in identifying the authorship of the three rock painting traditions. Hence, rock painting analysis adds new evidence to archaeology, linguistic and genetic findings on understanding Kondoa's past settlement. The rock painting evidence challenge sold assumptions (e.g. Masao 1979; Kessy 2005) that pastoralists groups were not early occupants of theKondoa area.

The identification of overlapping motifs between the Naturalistic and White tradition provides a strong indication of the sharing of rock art subjects/symbols from one group to another. It seems that the makers of the White tradition copied some cultural elements from older hunter-gatherer groups.

Broadly then, authorship of Kondoa rock art is complex. More than one group was responsible for making some of the traditions and there was borrowing and influence between traditions. Hence, in the coming chapter I will introduce a multi-stranded approach for further research into the meaning of the Kondoa rock painting sites.

CHAPTER SEVEN

Approaches towards understanding symbolic meaning of the paintings

Introduction

> "Interpretations of art often fail to recognize the multiplicity of the factors involved in preliterate communication; visual images integrate a complex multi-dimensional cross-referencing mechanism of encoded information. This may include the origin and perpetuation of life, the transmission and maintenance of laws and values, social and political organization, the relief of tension, cultural and territorial markers, economic and spiritual relationships to land, and above all, the maintenance of balance between the forces of nature and human manipulation of these forces" (Masao 1990:189).

Masao has demonstrated how the interpretation of rock art is not straightforward. It involves many factors all needing to be considered. These include examination of the social life of the makers of rock art and how they interacted with the landscape. Considering the socio-political context, the beliefs and the economy can also assist researchers in understanding the meaning, function and motivations of the painters. Conversely, Masao (1990:191) points out that even in contexts like Kondoa where much of the social context of the art can be reconstructed, this does not mean that interpretation is easy. Ideas can change through time and even direct descendent communities in places like southern Africa and Australia often struggle to interpret the meanings of specific paintings. Descendants regularly say things like "this art was made by the spirits". The only way to successfully interpret the art is through considering multiple sources of evidence. I now turn to examine useful approaches for interpreting Tanzanian rock paintings, particularly those in the Kondoa area.

In Chapter 5 and 6 we observed how it was difficult to establish clearly separated painting traditions and how authorship is complex. Each tradition was formed of many groups of paintings depicting different subject matters and using different colours (Chapter 5). Some traditions proved to have multiple authors (e.g. Waburunge and Warangi groups both made the White tradition paintings). Reconstructions of past settlements showed many groups living in

Kondoa, often in the same geographical area and with overlapping and borrowed belief systems and economic activities. These complexities, which have existed in Kondoa for millennia, ensure a similar complexity in understanding the symbolic meanings of the painted images. A multistranded approach that allows for borrowing, change and hybridity is therefore required.

Since the Kondoa rock paintings were discovered in the 1920s (Chapter 2) no ideal approaches have been developed to consider the issues of meaning, motivation and function of the art. Several researchers have used ethnographic approaches to search for meaning (e.g. Ten Raa 1971, 1974; Madokoro 1982; Lewis-Williams 1987; Lim 1992). Three scholars (Ten Raa, Lewis-Williams & Lim) have focused on the Wasandawe belief system in particular in order to try to understand the meaning of the paintings. Lim has gone perhaps the furthest by examining Wasandawe beliefs in their locational context in what she called a 'site oriented approach' to the meaning of the art.

In this approach, Lim considers the nature and location of the site to be primary in the process of searching for the meanings of the art (1992:271). Lim's work was based in a small area, while this thesis considers a far larger number of sites across a much larger area. Like Lim, I accept that context is key, but I argue that context extends far beyond the nature of the site. I am interested in the full multi-period and multi-cultural context in which this art was created. It is only within this greater level of contextual complexity that the art will be better understood. By considering all of the art as a monolithic stylistic whole, or trying to tie 'the art' to some specific unchanging ethnic identity, will never allow us to get to grips with the truly complex nature of the art.

In other regions, such as southern Africa and Australia, a set of approaches has been developed to deal with stylistically complex and changing bodies of rock art images. In southern Africa these approaches include Marxist studies (e.g. Lewis-Williams 1984; Campbell 1986), gendered studies (e.g. Solomon 1992, 1994; Stevenson 2000; Hays-Gilpin 2004), agency studies (e.g. Dowson 1994, 1995) studies of the body and embodiment (e.g. Blundell 2004), social and religious studies (e.g. Lewis-Williams 1981; Thackeray 1983, 1994, 2005; Hollmann 2001, 2002; Mguni 2004), interactionist studies (e.g. Jolly 1986; Prins 2000) and historically situated studies (e.g. Challis 2012). These approaches all have their roots in ethnographic studies. Some

southern African rock art researchers have also, like Lim, used an ethnographic understanding of landscape to understand rock art (e.g. Deacon 1988; Ouzman 1998; Smith & Blundell 2004; Lenssen-Erz 2004). Janette Deacon argued that place (landscape) might have been a primary influence upon San artists (1988:131; see also Lim 1992:168).

In East Africa, Namono (2010) successfully used a contextual ethnographic approach to study the meanings of geometric rock art in Uganda. I expect that a comparable approach will work in Kondoa, but I am not saying that all of the approaches used in southern Africa will be applicable to Kondoa. The relevant approaches are the ones amenable to reading art in complex interaction-rich, multi- and inter-ethnic social landscapes. To show the validity of this I here consider how to apply what I will call a 'situational approach' to the complex art sequence that I have defined for Kondoa.

A Situational approach

A situational approach is based on an understanding of the 'situation', in other words the social and physical environment, which influenced the artists who made sections of the art. A person's view on life and on material culture is inherently situated. It is defined by his/her life knowledge and experience. Our own views are similarly situated. A situational approach therefore seeks, as far as it is possible, to understand the art within the context in which it was created. It works by tacking backwards and forwards between the archaeology, oral histories and ethnographies. Interpretation is always based on a combined understanding of the past and present. This approach has particular value within the complex environment of Kondoa where many groups have settled the land and changed lifestyle through space and time. Understanding the situation of past and present settlements in the landscape is a driving tool and beginning step for arriving at meaning. The more a researcher can become familiar with the situation of the place, through archaeological or oral historical research etc., the more solid is the foundation for building an understanding of the meaning, motivation and function of the art (e.g. Blundell 2004 for San rock art).

Understanding ethnography alone is not enough. In the 1970s rock art research in southern Africa started to move away from statistical analyses, and to use San ethnography (e.g.

Vinnicombe 1976; Lewis-Williams 1981). Vinnicombe and Lewis-Williams's work was demonstrably productive and stimulated rock art research across southern Africa. However, since that time, a growing concern has developed with the manner in which singular subjects, for example the eland, were interpreted in similar ways in all parts of southern Africa and in all time periods (e.g. Lewis-Williams & Dowson 1988). It is now almost universally recognised that, to understand San art more fully, a contextually based ethnographic approach is needed that embraces and explains regional differences and temporal change (Solomon 1992; Blundell 2004; Mguni 2004; Smith & Ouzman 2004; Smith 2010; Challis 2012) .

The example of San rock art is well known and has influenced many rock art researchers worldwide. For instance, In Zambia and Malawi, Smith (1995) used local traditions, archaeological remains and oral histories to tie a complex sequence of rock art traditions to particular times and cultural identities. Research findings by Smith showed that the paintings were produced by both hunter-gatherer and farmer groups and were divided by gender within these groups. Follow-up work by Leslie Zubieta (2009) added new depth to one of the traditions (farmer girls' initiation art) by looking at how the tradition changed through time and using regional ethnographies to explore local variations within the art.

Returning to the Kondoa area, the situational approach needs to consider location, social setting, economy, belief system, gender roles, decision-making and political structures in the group, how the groups interacted on the landscape, cross influences, change and hybridity. All these will assist in any study of the meanings of the art. The nature of this kind of research is therefore time consuming and will require a range of different types of research to be conducted before conclusions can be reached.

To test the value of a situational approach, I conducted a trial version: as detailed an analysis as was possible within the confines of a three year project. This involved the collection of both quantitative and qualitative information. The quantitative information was based on extensive site and art observation and has been presented in pie charts and tables in Chapter 5. The qualitative information provides the means of interpreting the quantitative data. The numbers and figures derived during my fieldwork record strong patterns in the material culture, but they do not equal explanations. For instance, in Chapter 5 the numbers and figures show that the White

tradition dominates in Pahi village without explaining 'why' this dominance exists. My situational approach aims go further and to explain why White paintings dominate in the Pahi area.

As well as trends in overall location, such as the fact that the White tradition dominates in Pahi, the situational approach can be used to examine the reasons behind the precise position of art sites. Scholars such as Ten Raa (1981) and Lim (1992) have shown that particular site positions can relate to particular ritual activities among different groups. My data presented in Chapter 5 showed that the Naturalistic tradition is most commonly oriented more in a westerly direction. Equally, my data showed that high land was commonly chosen for Naturalistic rock art sites depicting wild animals and various Naturalistic human figures while lower-lying flat land was typically chosen for the White and Cattle painting traditions. A few Naturalistic paintings appeared also in the flat area with White and Cattle paintings around Pahi. These patterns allow us to consider different types of paintings linked to different group activities such as hunting, gathering, pastoralism and farming and how these fit within the social history of the area.

The archaeological work of Inskeep (1962), Masao (1979), Kessy (2005) and Lane (2009) has explored the nature of hunter-gatherer communities in Kondoa before the arrival of pastoralism and farming. From ethnographic work on their descendants (e.g. publications of Ten Raa) we have some glimpses into the types of rituals and beliefs held by these communities. Older forms of modern rituals have been recognised in some of the red Naturalistic rock paintings (Ten Raa 1971), demonstrating a connection between the archaeologically known hunter-gatherers and certain Wasandawe-speaking communities.

The presence of White painting tradition motifs on top of these Naturalistic paintings, particularly in the middle and at the foot of the hills, indicates, as I have argued in Chapter 5, the coming of new groups. My analysis showed that colour, subject matter and method all changed together. The White art tradition did not therefore evolve from the red Naturalistic tradition, but represents a different, introduced tradition. Some particularly interesting images are made in White fineline and these may be examples of interaction and hybridization between hunter-gatherers and incoming pastoralist and agricultural groups. The mixture of materials between

LSA group and pastoralists and farmers is well demonstrated in archaeological excavations in the Kondoa area (Inskeep 1962; Masao 1979; Kessy 2005; Lane 2009).

As groups continued to migrate into Central Tanzania the rock art image categories continued to change and these changes assist us in identifying the origins of these incoming groups. An example of this is the cattle with long, curved, and short horns with black pigments analysed in Chapter 5. The images differ greatly in colour and subject matter from the Naturalistic and White images. Analysis of the distribution of the cattle shows that they are scattered at the foot of the Pahi and Kandaga hills. This restricted distribution is most fitting of a pastoralist group. Archaeological findings by Masao (1979) and Kessy (2005) have shown the remains of domesticated animals mixed within Iron Age deposits. The two scholars have associated these remains with farmer groups.

My analysis of the Cattle tradition suggests another group, a pastoralist group (see also Anati 1986 his work Kondoa rock paintings). Ten Raa (1969a, b, c) has explored the ethno-history of the interaction of hunter-gatherers groups with pastoralist groups. He has described how this interaction had profound impacts on Wasandawe-speaking groups, causing them to change their traditional way of life by acquiring cattle and starting some basic cereal crop production. The cattle images may reflect a part of this interaction, perhaps providing evidence of the ritual interaction between Wasandawe-speakers and the pastoralist groups who occupied the flat areas below the escarpment in Kondoa. Further archaeological excavations in the cattle images sites will be necessary to explore this possibility.

Overall, this study has shown how rock art attests to a landscape inhabited by numerous groups of hunter-gatherers, pastoralists and farmers. The art reflects these separated identities at one level, but also the change and influence that occurred between these groups. Whilst some sections of the art were made in different periods, other sections were made by different groups interacting in the landscape at the same time. The taking on form of the brush method in sections of the White and Cattle tradition shows interaction with former hunter-gatherer groups. But, this sharing of certain traits does not appear to have meant a complete loss of identity. My rock art analysis showed that separated cultural identities and art styles were maintained even in the face

of extensive interaction. Art may therefore have been used as a means of marking and maintaining ethnic differences between language groups.

I now turn to show how a situational approach can be useful for interpreting these patterns based on knowledge of local archaeology, ethnography and oral histories. In Kondoa, unlike in most other regions, a few local people still hold some knowledge of the past production of the rock paintings. For instance, local people interviewed during this study, were able to explain and relate certain paintings to the *simbó* curing dance. Mr. Salimu Sono is a Sandawe-speaker from Gumbo village. He is a traditional leader in the Usandawe area. He described *simbó*[1] as a mental disease that a person inherits from their ancestors. The disease starts with a person feeling head pains, losing appetite and memory. When the relatives observe these signs they need to find a traditional healer who will give advice on medication. The *simbó* process of curing begins soon after confirmation from the traditional healer that *simbó* curing is required.

It commences by collecting sorghum, millet and honey from relatives, friends and neighbours. These are used for brewing a traditional beer for use in a healing dance. Domesticated animals such as cows, goats, sheep and hens are also used. These are slaughtered on the ancestors' graves and some is consumed by participants at the graves while the rest is eaten at the house afterwards. The number of animals killed is determined by the size of the healing ceremony. Mr. Sono informed me that, in the past, only wild animals were used in the ceremonies. He mentioned eland, kudu and other antelope as favourite animals. The horns of these animals have traditional value. They carry ancestral ritual meaning to the *simbó* dancer and to the sick person. They are also held by *simbó* participants during the ritual dance. In recent years, since the government has banned the hunting of wild animals, the horns of domesticated animals have been used in their place. After the necessary animals and horns have been collected the relatives' then meet with the *simbó* leader to make further arrangements.

The *simbó* leader and relatives agree upon the day of the ceremony. One month before the date of the ceremony the women start to meet in the evenings to grind the millet and sorghum needed

[1]David Lewis-Williams has associated *simbó* with a lion cult, even arguing that the term *simbó* comes from the Swahili word "*simba*" meaning lion. This was criticized by Mr. Sono and other *simbó* participants denied the link between *simbó* and a lion.

for making the traditional beer. During the month-long run up to the ceremony, the relatives and neighbours also gather at the *simbó* victim's place every morning and evening for the beating of horns and to dance. The rhythm beat of the horns assists the sick person in recovering by reducing pain. *Simbó* rhythm beats are also said to give people unusual powers. I was informed that a prisoner used *simbó* rhythm to jump out of the Kondoa town jail and fly to a *simbó* healing ceremony at Usandawe.

The traditional beer for the ceremony takes three days to prepare (**Figure 80, Page 215)**. One day before the beginning of the ceremony, relatives and neighbours assemble at the house where the ritual will be taking place for final preparation. Participants eat and drink as a way of welcoming the ceremony. In the evening the sick person and their relatives, neighbours and friends go to the ancestral graveyard. The *simbó* participants and the sick person spend one night in their ancestors' graveyard. They sing and dance for the whole night. In the graveyard they slaughter a black cow/goat and eat meat and drink. The sick person takes a small stone from the graveyard and puts it into a pot containing local beer. Afterwards, the stone is removed, cleaned and put into the slaughtered animal's horn. At the end of the ceremony, the stone, together with the animal horn, are kept by the person being cured. When he/she misplaces the stone, he/she can become sick again.

In the morning after the visit to the graveyard, participants return home to continue with the curing process. The sick person enters into his/her house while the other participants keep dancing outside the house. Only selected elderly people from the clan and the *simbó* leader enter the house to conduct rituals with the sick person. The sick person is decorated with black soot and white ash covering his/her whole body. Outside the house, near the entrance door, a fire is lit. After being cured, the sick person comes out of the house and jumps over the fire and joins other participants for dancing.

a

b c

Figure 80: Preparation of simbó healing traditional beer

The participants include women who sing and clap their hands in a line. The songs are violent in sound and are not easily understood by ordinary people who are not part of the Wasandawe group. Men dance together with the cured person, touching him with wild animal horns and dancing sticks**.** The dancing involves running, with sweat streaming down their bodies and foam appears in their mouths. They dance and jump until they collapse. They collapse, one by one at

different times. The dance takes between 1 and 2 hours before all participants collapse. Relatives assist those participants who fall down by providing first aid, for example by taking them to the shade and giving them local beer and meat (see also Van de Kimmenade 1936). Both women and men dancers say that they have a spirit in their bodies that gives them the ability to know things from a distance. The dancers also can attack and chase away evil or bad things during the dance.

Figure 81: Simbó dancer with horns and dancing stick (Source: Smith, B.W)

Mr. Sono described how the *simbó* dancers put the dancing stick/horn into their nose (**Figure 72, Page, 183**). This lets them know the direction where the *simbó* healing dance is taking place. Lewis-Williams (1986) described the posture of putting the stick/horns in the nose as sign of nasal bleeding. According to Mr. Sono it is unusual for a *simbó* dancer to bleed from the nose; it only happens when he/she meets bad people. He was able to recognize a figure from Mary Leakey book '*Africa's Vanishing Art. The rock paintings of Tanzania*' (1983: 64) and interpret it as the stick/horn used by *simbó* dancers.

In the past, *simbó* was performed by Wasandawe men only, however, today women also perform *simbó***.** Oral traditions collected from *simbó* leaders indicate that interaction with Bantu language-speakers and the introduction of Christianity and Islam among Wasandawe

communities has impacted on *simbó* and brought about changes. There are things that happened in the past during the ceremonies that don't happen now**.** Mwanaidi Juma, 68 years old, from Kwamtoro explained that due to the interaction and marriage between Wasandawe and Bantu language-speakers, many aspects of the *simbó* rituals are now also practised by Bantu language-speakers who live around Wasandawe area. She gave the Wanyanturu as an example; they use a *simbó*-like ritual for healing.

Today *simbó* is danced even during political campaigns. Anyone is allowed to attend these ceremonies. A few more traditional restrictions still apply: for example attendees cannot wear anything red in colour, and women who are more than three months into their pregnancy as well as women with perfume are not allowed to attend. If you have had sex one day before the ceremony you are also not allowed to attend. Taking photos is not allowed. All these things are forbidden because they affect the ritual performance.

The avoidance of red as a colour is particularly interesting as the majority of the Naturalistic paintings, which Mr. Sono and others connect to *simbó*, were made using red pigments. Perhaps this means that the paintings were made outside of the context of actual ceremonies and simply reflected memories of a ceremony. If this was the case, then why were the paintings made? This implies that the paintings did not form part of a ceremony and were not made to influence the outcome of a ceremony. Another possibility is that the restriction on red within *simbó* is a product of changes in colour symbolism that have come about after interaction between the Wasandawe and incoming pastoralist and farmer groups.

Today for example, it is black domesticated cows, goats, sheep and hens that are sacrificed within *simbó.* But, the former wild animals that were hunted for *simbó* such as kudu, giraffe and eland were not black. The need for a black animal is comparatively recent; this use of black symbolism was certainly introduced during interaction. What we see today in *simbó* is therefore different from how things were at the time that the paintings were made. Almost certainly the symbolism attached to red was different when the paintings were made. No oral traditions from Wasandawe-speakers in Kondoa will reflect exactly the procedures and restrictions used in *simbó* ritual ceremonies a thousand years ago, but snippets of the past survive and these can still be linked to the art.

Maasai-speaking elders were also able to relate some of their rituals, especially *ol-pul,* to the production of the rock paintings. Mr. Lemameyo Lemuya, 69 years, and Mr. Lesebele Mgagamu, 93 years, from Rofati village, South of Kondoa both described *ol-pul* as a traditional ceremony where Maasai Morans spends several weeks or month away from home feasting on meat. The ceremony takes place in a shelter or forest close to a water source at the foot of a hill. In the ceremony, Morans are assisted by Layonis (**Figure 78, Page 200**) who are young circumcised Maasai who are trainee Moran/warriors (see also Gramly 1975:109). Each Moran provides a cow to facilitate the ceremony. The cow is slaughtered and its meat is boiled with herbs, roots and honey. These mixtures produce a strong soup for the Moran who believe that it cleans their body and increases power.

The *ol-pul* ceremony offers communal prayers of and remembrance to the ancestors. *Ol-pul* was also a stage in preparing Morans to raid cattle (Ole Saitoti & Beckwith 1980; Ole Saibull & Carr 1981). I was informed that the participants in the ceremony sing, dance and used to paint figures of shields and cows onto rock surfaces in rock shelters. I was also told that *Ol-pul* was conducted at the foot of a hill or forest. This fits well with the distribution of the cattle images and it would explain the choice of subject matter.

My analysis showed that paintings associated with this rock art tradition are very few in the Kondoa area. This suggests that Kondoa was not a core traditional area for the *Ol-pul* ceremony, a fact that confirms Maasai historical traditions that were related to me in interviews. The *Ol-pul* ceremony involves two age groups: the Moran and Layonis. Specifically who is responsible for the making of the rock art is not yet known. The answer will be achieved by examining various procedure and tools used in the ceremony through a situational approach.

Amongst the Waburunge there are also traditions relating to rock paintings that are tied to initiation. Oral traditions indicate that, in the past, circumcision took place away from the village. Nowadays, circumcision takes place not far from the village, under a big tree. In the past, circumcised young boys spent six months to one year away from home, learning and practising their culture. Currently, the time for training is reduced to one month only. This is to meet the competing requirements of participants who also attend local schools. The circumcision now

takes place during school break, in June and December of each year. The initiates are taught and practise hunting, rain-making, honey collecting, cattle-keeping and house-building. These activities are demonstrated by selected elders.

On the last day of the circumcision period, the parents prepare a traditional ceremony before their departure home. It was a public ceremony in which both women and men attended. Activities, such as hut-construction that are practised during the circumcision ceremony were recognised by my informants as being represented in the White tradition art. This means that some of the rock art images were probably executed to teach young Waburunge boys the secret knowledge and symbolism involved in constructing a hut/house. It is not clear how many such circumcision ceremony activities are represented in the rock art. Further study and a detailed analysis of older Waburunge circumcision practices will be needed to take this further.

Figure 82: Waburunge circumcised boys rest in their hut during circumcision at Goima Village

Waburunge girls undergo initiation when they reach the age of 16 to 20 years. The initiation is aimed at preparing them for adulthood and marriage. Girls also learn about Waburunge culture. During the initiation period they spend a month in their parents' house. They are not allowed to go outside the house. Inside the house their mothers and other Waburunge female elders teach them how to behave as adult women. They are also taught about social and sexual education, including the marriage process. Their guardians also teach them how to decorate the house. Lessons are demonstrated through drawing figures on the house wall. Then participants practise

what they have been taught by their guardians. They paint different figures such as animals, snakes, humans and various geometric shapes (**Figure 74, Page 190 & Figure 84, Page 221**). They paint using white, black and red colours. The guardians and other women evaluate the drawings of the initiates. A successful painting shows the judge that the trainee is ready to become an adult woman.

The drawing of white geometric designs, wild and domestic animals and snakes, similar to those drawn in the Waburunge female initiation has been recorded in the shape typology used in this study. These images were recorded on rock surfaces situated at the base of hills. The majority of such paintings were concentrated in one area: Pahi. The distance from one shelter to another with this type of art is very close. Perhaps each shelter represents the result of a single ceremony and the cluster of sites shows that ceremonies have been conducted in this area for centuries. Rock art is no longer made today.

There has been a change of circumcision ceremonies to deal with modern government demands, such as the move to more secret indoor contexts in response to the banning of these initiation practices by President Julius Kambarage Nyerere. That the modern ceremonies no longer use rock shelters and show a range of practices that are creolised in nature, imitated the paintings in showing aspects of both continuity and change. These have always been vibrant changing societies. Both the rock art and the ethno-history show this repeatedly. The Waburunge have adapted their ceremonies to meet modern needs and contexts, just as the rock artists did many centuries ago.

Figure 83: Right are Waburunge women and left are Waburunge girls who described initiation process

Figure 84: Decoration of the Waburunge girls during initiation

Even from this brief anecdotal discussion it is clear that each of the major painting traditions that I have identified can be linked to certain oral traditions among the Wasandawe, Maasai and Waburunge groups relating to ritual ceremonies such as healing and rites of passage.

In Chapters 3 and 5 I identified many stylistic groupings of rock paintings within three broader art traditions. For example, within the Naturalistic painting tradition there are many sub-styles each with variations in manner of depiction and subject matter (Chapter 5). The authorship of the overall tradition is clear; it belongs to hunter-gatherer communities ancestral to modern-day groups such as the Wasandawe and Hadzabe click speakers. The reason for the variations within this tradition is not clear. It could be a product of different hunter-gatherer groups, different functions, different age or genders. These hunter-gatherer groups were not monolithic; there was considerable difference within them. The Wasandawe, for example, have been divided into two main groups, each with subgroups (Chapter 2).

Some of these ethnic subdivisions may explain the variations within the Naturalistic painting tradition, but further work will be required to demonstrate this. But, even once this is done, knowing the group/s will not be enough to produce interpretations. Also crucial is the different ritual activity/s related to the production of the paintings. Most if not all Wasandawe-speakers had versions of *simbó* but perhaps there were other unknown hunter-gatherer rituals that led to the production of the paintings but which have been forgotten by modern Wasandawe.

On the other hand, as I have emphasised, the Wasandawe have interacted with pastoral and farmers in this area for millennia. Some rituals we see today could be products of this interaction. I have argued that the ritual *iyari* is one example; Lim (1992) has connected some paintings with the *iyari* ritual. If she is correct then these must be more recent paintings and they therefore reflect a change in the art tradition over time that follows changes in ritual over time that have been produced by interaction. All these complexities need to be included and investigated through a situational approach before we can reach the meanings of the hunter-gatherer paintings.

The same is true for the White traditions that were made by the ancestors of the modern-day Waburunge and Warangi. We have seen how the Waburunge boys and girls initiation rituals can be tied to some aspects of the White painting tradition. Some Warangi traditions also suggest that Warangi may have made paintings during their initiation ceremonies. The relationship between these two groups is an ancient one. For centuries they have lived together and shared various rituals such initiation and rainmaking (Fosbrooke 1958a, b; Bwasiri 2008). Perhaps some of these shared rituals were connected to the production of White tradition paintings in Kondoa area. Different styles and subjects within the White traditions may therefore link to different and changing ritual functions. The interpretation of this diversity will only be achieved by employing a situational analysis that is rooted in this complexity.

I have therefore characterised the complexity in the rock art of Kondoa and begun to walk the path of explaining this complexity using a multi-stranded approach that is rooted in the context in which each painting was made. I have proposed an approach that embraces change, interaction and hybridity. I admit that we still have a long way to go before a truly situational approach can be successfully implemented, but I have set out the conditions and steps needed to achieve this. I have taken the approach as far as is possible within a three year project. It is true that I have thrown up as many questions as answers. But, further research along the lines that I have proposed will allow us to find answers from any of these questions. By following the path set out by this project a more complex and realistic understanding of the rock art of Kondoa may be developed than has been achieved for the rock arts of other parts of Africa.

CHAPTER EIGHT

Conclusion

The aim of this thesis was to resolve the matter of the authorship of the rock art of Kondoa and to provide the means to integrate the finding of rock art research with local excavational archaeology. I submit this has broadly been achieved. Through using a multistranded approach I have demonstrated the existence of three traditions (Naturalistic, White and Cattle) of rock art in Kondoa. These traditions were not derived from field impressions, but from a formal analytical approach that is both transparent and repeatable. The oldest was made by local hunter-gatherer groups likely to be ancestral to the Hadzabe and Wasandawe; the second was made by the Waburunge (or their ancestor) and then continued by the Warangi; the third was likely made by Maasai. Approximate ages can be placed on each tradition based on our knowledge of the occupation of this area by these groups, but I have identified great potential for direct dating of a number of specific paintings and this will be the subject of a follow-up study.

With a complex authorship determined it is now possible, and I have begun this here, to integrate excavational findings and rock art studies in this area. The rock art confirms some archaeological interpretations, but challenges others. For example, the rock art does not support extensive continuity from the Late Stone Age to the Iron Age. Instead it suggests the arrival of new symbolic systems and new ritual contexts for rock art production. I was able to identify aspects of interaction and borrowing, but the broader picture is of incoming groups culturally superseding the older inhabitants. More can be done with my data concerning interaction and borrowing than space has allowed here. For example my data allows scrutiny of exactly which symbols were shared, in which areas, and by whom. This will allow future studies to progress towards finely nuanced local contextual interpretations of Kondoa rock art, thereby bringing a finer resolution to social archaeological interpretation than has proven possible in this area from excavations alone.

Future Directions

The Kondoa rock art area is not entirely surveyed, nor recorded. During this survey, a large number of unknown rock art sites were located and recorded for the first time. But, at least half of the district remains unsurveyed. Extensive further survey and recording is still required. Notable areas for further research include the western part of the district along the Bubu River, the Usandawe area, the Swaga Swaga Game Reserve area and the south-eastern part of the district along the Great North road. Further rock art research is also needed in other areas beyond Kondoa District, where traditions and authorship are not yet established (see Chapter 3 for details). I have provided the basis here for useful comparison of findings from new areas and, if a similar method was used, equally useful results can be expected.

Future research in Kondoa should not be confined only to rock paintings research, but should also include archaeological and anthropological research. I recommend archaeological excavations to be conducted in painted rock shelters, whilst paying great attention to the rock paintings so as to avoid damaging the art through dust and touching. These excavations can usefully build upon some of the conclusions in this thesis. For example, in Kondoa, no archaeological research has reported evidence of the archaeology of pastoral groups. A lack of a focus on this specific problem is the likely cause of this. Certainly, pastoralist groups have inhabited this area for many centuries and it impossible that direct evidence of this does not survive archaeologically.

In Chapter 7, I have explored elements of how the rituals of specific groups may provide insights into the production of some sections of the Kondoa rock paintings. With the broad authorship of the art attained, the next step is to conduct anthropological research to find out which other elements within local ethnographies can be used to provide insights into the meaning and motivation behind the paintings. This work can now be more clearly focused because I have provided broad indications of where it will prove most productive. Overall, it will be a multidisciplinary approach involving rock art studies, archaeology and anthropology, that will prove most productive in moving towards at Situational understanding of the Kondoa rock paintings.

Since colonial times research on Tanzanian cultural heritage has been conducted by scholars employed at universities and private institutions, mostly originating from outside of Tanzania. With a few notable exceptions (e.g. the work at Olduvai) researchers have tended to focus their efforts around the major tourist destinations, in those areas where it is most comfortable to work. This has caused some parts of the country, particularly northern and coastal Tanzania, to be given priority while others, including Kondoa, have been under-researched. To minimize the problem, the Government of Tanzania through Antiquities Division should allocate funds and encourage local scholars to investigate those marginalised areas particularly central and southern highland of Tanzania.

During the site survey part of this research, the research team observed serious deterioration of the Kondoa rock paintings. Both human and natural factors were mentioned by local people as causal factor. Local people use areas with rock paintings for grazing, farming and cutting trees for charcoal; which is their primary source of fuel. These activities (e.g. grazing) deteriorate paintings through the rubbing of animals, the kicking up of dust and rock flaking from fire. Natural factors such as water washing, salts and rock flaking are also active decay factors. In 1929, Nash noted that the paintings of Kondoa were in a bad state of preservation. Some paintings had already been affected by graffiti at that time (Nash 1929). The same problem was also reported by Leakey in the 1950s (1983). Masao (1979) noted the same thing in the 1970s. After nearly a century of concern about the art, little has actually been done to protect it.

In the 1970s Amini Mturi constructed protective cages at nearly 20 shelters but all of these were vandalised and the wire and poles stolen. The establishment of an Antiquities office in the area at the same time, provided a management presence, but the size of the painted area has proven too great to allow effective site-level management. In practice, the office has acted more as a tourist information centre.

Further research is needed to address the current conservation problems. We need to understand the decay processes on a site by site level and develop detailed conservation plans to mitigate the problems at every site. The few site conservation plans that exist (Loubser 2001) have yet to be implemented. A new level of management seriousness is required that sees direct action on the

ground and that involves building long-term partnerships with specialised rock art management and conservation professionals whilst local capacity is developed.

Broad level community conservation and management awareness programs are also needed. This will broaden the range of stakeholders involved in the protection of the art and ensure the survival of the Kondoa rock painting for future generation. Involving the local community in the direct management of the rock art is one of the best ways of minimizing future deterioration caused by human activities. Education programmes servicing schools around Kondoa can help to minimize graffiti and to improve behaviour in and around rock art sites in the long-term.

The existence of this thesis should not be used to suggest that rock art research in Kondoa is ‘complete’. Quite the contrary, this a step on the path towards a real understanding of the functions and motivations behind the Kondoa rock painting, but important steps still remain. This study should be judged, not only on its success in identifying art traditions, authorship and approaches to interpretations, but also on the extent to which it provides a useful ground work for a broad range of further research.

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Appendix 1

Kondoa rock paintings project recording form

Name of recorder _____Date _____

Site Name	
Mary Leakey Name	
Fosbrooke Name	
Village	

District _____ Region _____Country _____

Site Location: GPS readings (WGS 84) _____

Site Aspect: N NE E SE S SW W NW

General Compass Bearing (0° – 360°) _____

Dimension of the site (Meters): Length _____ Width/Depth _____ Height _____

Site elevation _____

Site **type: Shelter Boulder**

Modern Site Vegetation: Wooded Bush Thorny Thicket Others _____

Modern use of site: Habitation Living Heritage Tourism

_____

_____

Associated Archaeological Material: Acheulian MSA LSA Pastoral Neolithic Iron Age

Site previous recording: Yes Maybe No

Photographs: Photo/Slide No_____

Description of the site/how to get there

Appendix 2
Total number of combined shapes

Shape	Amount		Percentage of shapes in terms of total number of the group	percentage in terms of total
1001RS	10	1409	0.71%	0.31%
1001RF/L	2		0.14%	0.06%
1002RS	100		7.10%	3.15%
1002RF/L	168		11.92%	5.29%
1002WF/L	58		4.12%	1.83%
1003RS	42		2.98%	1.32%
1003RD	5		0.35%	0.16%
1003RF/L	58		4.12%	1.83%
1003WF/L	2		0.14%	0.06%
1004RS	3		0.21%	0.09%
1004WF/L	2		0.14%	0.06%
1005RF/L	12		0.85%	0.38%
1005WF/L	2		0.14%	0.06%
1006RS	2		0.14%	0.06%
1006RF/L	6		0.43%	0.19%
1007RF/L	5		0.35%	0.16%
1008RS	3		0.21%	0.09%
1009WS	2		0.14%	0.06%
1009WF/L	82		5.82%	2.58%
1009YF/L	16		1.14%	0.50%
1010RF/L	3		0.21%	0.09%
1010WF/L	13		0.92%	0.41%
1010YF/L	17		1.21%	0.54%
1011WF/L	3		0.21%	0.09%
1013RF/L	18		1.28%	0.57%
1013WF/L	286		20.30%	9.01%
1013YF/L	9		0.64%	0.28%
1014WF/L	3		0.21%	0.09%
1015RF/L	3		0.21%	0.09%
1016RF/L	19		1.35%	0.60%
1016WF/L	19		1.35%	0.60%
1016YF/L	17		1.21%	0.54%
1017WF/L	58		4.12%	1.83%
1018RF/L	15		1.06%	0.47%

1018WS	3		0.21%	0.09%
1018WF/L	108		7.67%	3.40%
1019WF/L	64		4.54%	2.02%
1020WL	3		0.21%	0.09%
1020WF/L	54		3.83%	1.70%
1020YF/L	9		0.64%	0.28%
1021WF/L	13		0.92%	0.41%
1022WL	2		0.14%	0.06%
1022WF/L	26		1.85%	0.82%
1024WF/L	64		4.54%	2.02%
2001RS	33	647	5.10%	1.04%
2001RD	7		1.08%	0.22%
2001RL	4		0.62%	0.13%
2001RF/L	14		2.16%	0.44%
2001WS	28		4.33%	0.88%
2001WF/L	3		0.46%	0.09%
2001BS	3		0.46%	0.09%
2002RS	7		1.08%	0.22%
2002RF/L	12		1.85%	0.38%
2002WS	16		2.47%	0.50%
2002YS	2		0.31%	0.06%
2003RS	8		1.24%	0.25%
2003RF/L	13		2.01%	0.41%
2004RS	21		3.25%	0.66%
2004RF/L	18		2.78%	0.57%
2005RS	5		0.77%	0.16%
2006RS	7		1.08%	0.22%
2006RF/L	4		0.62%	0.13%
2006WS	2		0.31%	0.06%
2007RS	15		2.32%	0.47%
2007RD	2		0.31%	0.06%
2007WS	8		1.24%	0.25%
2008RS	20		3.09%	0.63%
2008RD	7		1.08%	0.22%
2008RL	3		0.46%	0.09%
2008RF/L	18		2.78%	0.57%
2008WS	3		0.46%	0.09%
2009RS	5		0.77%	0.16%
2009RL	2		0.31%	0.06%
2009RF/L	3		0.46%	0.09%
2009WS	2		0.31%	0.06%
2010RS	28		4.33%	0.88%

2010RL	2		0.31%	0.06%
2010RF/L	16		2.47%	0.50%
2010WS	3		0.46%	0.09%
2010BS	4		0.62%	0.13%
2011RF/L	4		0.62%	0.13%
2012RS	2		0.31%	0.06%
2012WS	3		0.46%	0.09%
2013RF/L	3		0.46%	0.09%
2013WS	2		0.31%	0.06%
2013WF/L	3		0.46%	0.09%
2014RS	2		0.31%	0.06%
2014RD	2		0.31%	0.06%
2015WS	11		1.70%	0.35%
2015BF/L	19		2.94%	0.60%
2016WS	25		3.86%	0.79%
2016BF/L	12		1.85%	0.38%
2017WS	31		4.79%	0.98%
2017BF/L	11		1.70%	0.35%
2018RS	4		0.62%	0.13%
2018WS	4		0.62%	0.13%
2019RS	6		0.93%	0.19%
2019WS	2		0.31%	0.06%
2020RS	2		0.31%	0.06%
2020WS	2		0.31%	0.06%
2020YS	2		0.31%	0.06%
2021RL	2		0.31%	0.06%
2021WL	3		0.46%	0.09%
2022RS	2		0.31%	0.06%
2022RF/L	2		0.31%	0.06%
2022WF/L	7		1.08%	0.22%
2023RS	6		0.93%	0.19%
2023RF/L	5		0.77%	0.16%
2023WS	3		0.46%	0.09%
2024RS	10		1.55%	0.31%
2025RS	32		4.95%	1.01%
2025RL	2		0.31%	0.06%
2025RF/L	16		2.47%	0.50%
2025WS	30		4.64%	0.94%
2025WL	7		1.08%	0.22%
2025WF/L	6		0.93%	0.19%
2027RF/L	2		0.31%	0.06%
2027WF/L	2		0.31%	0.06%

2029RF/L	2		0.31%	0.06%
2029WS	8		1.24%	0.25%
3001YL	2	1119	0.18%	0.06%
3002WF/L	5		0.45%	0.16%
3003WL	3		0.27%	0.09%
3003WF/L	3		0.27%	0.09%
3006WF/L	5		0.45%	0.16%
3008RF/L	17		1.52%	0.54%
3009WF/L	2		0.18%	0.06%
3010RD	36		3.22%	1.13%
3010RF/L	62		5.54%	1.95%
3010WF/L	604		53.98%	19.02%
3010YF/L	185		16.53%	5.83%
3011WL	1		0.09%	0.03%
3011WF/L	11		0.98%	0.35%
3012WF/L	4		0.36%	0.13%
3013WF/L	7		0.63%	0.22%
3014WF/L	5		0.45%	0.16%
3015RF/L	5		0.45%	0.16%
3015WF/L	24		2.14%	0.76%
3016WF/L	7		0.63%	0.22%
3018RF/L	3		0.27%	0.09%
3020WF/L	2		0.18%	0.06%
3021WL	6		0.54%	0.19%
3021WF/L	2		0.18%	0.06%
3022WF/L	3		0.27%	0.09%
3023WF/L	64		5.72%	2.02%
3025WF/L	3		0.27%	0.09%
3026WF/L	2		0.18%	0.06%
3027RF/L	2		0.18%	0.06%
3028RF/L	13		1.16%	0.41%
3029RF/L	6		0.54%	0.19%
3029WL	2		0.18%	0.06%
3029WF/L	3		0.27%	0.09%
3030WF/L	3		0.27%	0.09%
3032RF/L	2		0.18%	0.06%
3032WL	2		0.18%	0.06%
3032WF/L	2		0.18%	0.06%
3041RF/L	2		0.18%	0.06%
3043RF/L	3		0.27%	0.09%
3044WF/L	2		0.18%	0.06%
3045WF/L	2		0.18%	0.06%

3052RF/L	2		0.18%	0.06%
	3175			
		1409	44.38%	
		647	20.38%	
		1119	35.24%	

Appendix 3
Name of sites recorded in the study areas

No	Site name	Village	District	Present Colour	GPS		Site Aspect	Site Elevation in metre
					E	S		
1	Anglican 1	Pahi	Kondoa	R & Y	3554'40.0	4 43 29.2	NW-N	1356
2	Anglican 2	Pahi	Kondoa	R	35 5441.2	4 43 30.0	S-SW	1319
3	Anglican 3	Pahi	Kondoa	R	35 5442.7	4 43 29.3	W-NW	1359
4	Anglican 4	Pahi	Kondoa	R	35 5444.0	4 43 36.2	W-NW	1369
5	Anglican 5	Pahi	Kondoa	R	35 5442.7	4 43 35.4	SW-W	1358
6	Boma 1	Kingale	Kondoa	W &R	35 4845.2	5 02 44.7	S-SW	1551
7	Busi2	Pahi	Kondoa	W & R	35 5433.7	4 43 43.2	SE-S	1386
8	Busi 3	Pahi	Kondoa	W & R	35 5433.5	4 43 43.1	NE-E	1390
9	Busi 4	Pahi	Kondoa	R	35 5433.8	4 43 52.9	S-SW	1386
10	Busi 5	Pahi	Kondoa	R	35 5431.5	4 43 48.6	E-SE	1428
11	Busi 6	Pahi	Kondoa	R	35 5430.9	4 43 49.0	S-SW	1419
12	Busi 7	Pahi	Kondoa	R	35 5430.5	4 43 48.0	S-SW	1439
13	Busi 8	Pahi	Kondoa	W & Y	35 5424.3	4 43 53.7	NW-N	1454
14	Busi 9	Pahi	Kondoa	R	35 5500.3	4 43 52.1	E-SE	1463
15	Busi 10	Pahi	Kondoa	R	35 5528.0	4 45 03.2	SE-S	1714
16	Busi 11	Pahi	Kondoa	R	35 5520.4	4 44 57.8	N-NE	1701
17	Busi 12	Pahi	Kondoa	W	35 5420.5	4 43 52.1	S-SW	1471
18	Busi 13	Pahi	Kondoa	W	35 5420.0	4 43 51.3	E-SE	1482
19	Busi 14	Pahi	Kondoa	W	35 5420.1	4 43 51.0	N-NE	1465

No	Site name	Village	District	Present Colour	GPS		Site Aspect	Site Elevation in metre
					E	S		
20	Chakamba 1	Iyoli	Kondoa	R	35 4656.1	5 00 19.3	E-SE	1408
21	Chakamba 2	Iyoli	Kondoa	W & R	35 4701.0	5 00 12.9	W-NW	1389
22	Chakamba 3	Iyoli	Kondoa	R	35 4657.6	5 00 21.2	SW-W	1406
23	Chakamba 4	Iyoli	Kondoa	R	35 4630.1	5 00 33.5	SW-W	1417
24	Changombe 1	Mrijo	Kondoa	W	36 2416.5	5 16 11.4	N-NE	1310
25	Changombe 2	Mrijo	Kondoa	W	36 2441.2	5 16 22.0	N-NE	1331
26	Changombe 3	Kingale	Kondoa	R	35 4839.5	5 02 42.1	NW-N	1325
27	Cheke 1	Itundwi	Kondoa	W	35 5014.4	4 38 45.4	SE-S	1305
28	Cheke 2	Itundwi	Kondoa	W & R	35 4950.6	4 38 43.4	SW-W	1311
29	Cheke 3	Itundwi	Kondoa	W & R	35 496.3	4 38 37.5	SE-S	1272
30	Cheke 4	Itundwi	Kondoa	W	35 4940.4	4 38 28.5	N-NE	1298
31	Chungai 1	Mnenia	Kondoa	R	35 5140.2	4 40 49.8	N-NE	1264
32	Chungai 2	Mnenia	Kondoa	R	35 5203.6	4 42 32.7	N-NE	1377
33	Disa 1	Kisese	Kondoa	W	35 4229.3	4 43 31.1	N-NE	1343
34	Disa 2	Kisese	Kondoa	R	35 4938.8	4 28 33.6	N-NE	1351
35	Disa 3	Kisese	Kondoa	R	35 4924.3	4 28 55.8	N-NE	1367
36	Fenga 1	Bukulu	Kondoa	R	35 4509.5	4 38 04.6	N-NE	1407
37	Fenga 2	Bukulu	Kondoa	R	35 4444.5	4 37 48.8	W-NW	1407
38	Fenga 3	Bukulu	Kondoa	R	35 4445.9	4 37 58.1	W-NW	1408
39	Fenga 4	Bukulu	Kondoa	W & R	35 4415.0	4 36 59.3	W-NW	1407
40	Kijiweni 1	Kandaga	Kondoa	W	35 4658.2	4 34 02.3	E-SE	1300
41	Kijiweni 2	Kandaga	Kondoa	W	35 4655.7	4 34 02.7	E-SE	1294
42	Kijiweni 3	Kandaga	Kondoa	W	35 4702.2	4 34 28.4	N-NE	1255
43	Kijiweni 4	Kandaga	Kondoa	W	35 4702.1	4 34 31.5	N-NE	1270
44	Kijiweni 5	Kandaga	Kondoa	W	35 4700.7	4 34 42.9	E-SE	1268
45	Kijiweni 6	Kandaga	Kondoa	W & B	35 4702.9	4 34 46.1	E-SE	1272
46	Kisengo 1	Kingale	Kondoa	R	35 4753.6	5 03 02.8	N-NE	1431
47	Kisengo 2	Kingale	Kondoa	R	35 4746.1	5 03 21.2	W-NW	1410
48	Kwadangi 1	Thawi juu	Kondoa	R	35 4603.7	4 41 44.7	SE-S	1706
49	Kwadangi 2	Thawi juu	Kondoa	R	35 4544.0	4 41 29.5	SW-W	1710
50	Kwadima 1	Kingale	Kondoa	R	35 4829.7	5 02 21.2	S-SW	1569
51	Kwadima 2	Kingale	Kondoa	R	35 4732.4	5 02 13.6	E-SE	1602
52	Kwadima 3	Kingale	Kondoa	R	35 4651.9	5 00 34.0	SW-W	1619
53	Kwadondo	Itololo	Kondoa	R	35 4714.0	4 31 09.6	N-NE	1371
54	Kwakidali 1	Thawi juu	Kondoa	R	35 4448.3	4 42 05.6	NW-N	1603
55	Kwakidali 2	Thawi juu	Kondoa	R	35 4455.4	4 42 19.3	NW-N	1624
56	Kwamtea	Itololo	Kondoa	W	35 4738.5	4 30 40.8	N-NE	1358
57	Kwasalari 1	Thawi juu	Kondoa	R	35 4620.4	4 41 59.9	W-NW	1733
58	Kwasalari 2	Thawi juu	Kondoa	R	35 4526.2	4 42 40.2	W-NW	1681

No	Site name	Village	District	Present Colour	GPS		Site Aspect	Site Elevation in metre
					E	S		
59	Kwasalari 3	Thawi juu	Kondoa	R	35 4526.5	4 42 37.3	W-NW	1703
60	Kwasalari 4	Thawi juu	Kondoa	R	35 4526.3	4 42 38.6	W-NW	1708
61	Lusangi 1	Pahi	Kondoa	W	35 5318.1	4 43 04.8	N-NE	1238
62	Lusangi 2	Pahi	Kondoa	W	35 5337.2	4 43 09.6	N-NE	1337
63	Lusangi 3	Pahi	Kondoa	W	35 5339.1	4 43 11.3	N-NE	1312
64	Lusangi 4	Pahi	Kondoa	W & R	35 5339.5	4 43 12.2	E-SE	1312
65	Lusangi 5	Pahi	Kondoa	W	35 5337.5	4 43 17.6	NE-E	1376
66	Lusangi 6	Pahi	Kondoa	W	35 5337.5	4 43 19.6	E-SE	1332
67	Lusangi 7	Pahi	Kondoa	R	35 5329.4	4 43 17.2	NE-E	1312
68	Lusangi 8	Pahi	Kondoa	R	35 5358.0	4 43 28.9	SE-S	1399
69	Lusangi 9	Pahi	Kondoa	W & B	35 5358.3	4 43 28.3	SE-S	1343
70	Lusangi 10	Pahi	Kondoa	R & Y	35 5423.1	4 43 22.9	SE-S	1364
71	Lusangi 11	Pahi	Kondoa	W	35 5318.7	4 43 06.5	W-NW	1313
72	Lusangi 12	Pahi	Kondoa	W & R	35 5319.6	4 43 08.1	W-NW	1229
73	Lusangi 13	Pahi	Kondoa	W	35 53 1.7	4 43 10.6	E-SE	1374
74	Lusangi 14	Pahi	Kondoa	R & Y	35 5322.5	4 43 04.3	SE-S	1395
75	Lusangi 15	Pahi	Kondoa	W	35 5323.2	4 43 05.2	W-NW	1415
76	Lusangi 16	Pahi	Kondoa	W	35 5327.6	4 43 08.3	NE-E	1324
77	Lusangi 17	Pahi	Kondoa	W	35 5335.8	4 43 09.5	W-NW	1333
78	Lusangi 18	Pahi	Kondoa	W	35 5337.0	4 43 10.7	N-NE	1352
79	Lusangi 19	Pahi	Kondoa	W & R	35 53 27.7	4 43 08.5	W-NW	1349
80	Lusangi 20	Pahi	Kondoa	W	35 53 36.6	4 43 10.5	SE-S	1332
81	Lusangi 21	Pahi	Kondoa	W & R	35 53 25.2	4 43 07.2	SE-S	1349
82	Machinjoni 1	Itololo	Kondoa	W & R	35 48 44.2	4 29 32.0	N-NE	1367
83	Machinjoni 2	Itololo	Kondoa	W	35 48 27.1	4 29 52.0	N-NE	1388
84	Madumbi	Kingale	Kondoa	R	35 47 44.8	5 03 31.5	W-NW	1275
85	Magmas	Mrijo	Kondoa	W	36 23 38.1	5 16 31.7	W-NW	1521
86	Majilili 1	Kolo	Kondoa	R	35 52 44.2	4 45 04.0	NW-N	1710
87	Majilili 2	Kolo	Kondoa	R	35 52 42.8	4 44 56.3	NW-N	1683
88	Malumai	Kingale	Kondoa	W & R	35 48 14.2	5 02 22.5	S-SW	1407
89	Markasi 1	Pahi	Kondoa	R & Y	35 54 21.1	4 43 28.8	NE-E	1371
90	Markasi 2	Pahi	Kondoa	W	35 54 22.5	4 43 30.2	N-NE	1350
91	Markasi 3	Pahi	Kondoa	W	35 54 22.1	4 43 30.3	S-SW	1340
92	Markasi 4	Pahi	Kondoa	W	35 54 22.9	4 43 30.7	W-NW	1342
93	Markasi 5	Pahi	Kondoa	W	35 54 22.8	4 43 30.8	N-NE	1350
94	Markasi 6	Pahi	Kondoa	W	35 54 22.9	4 43 30.6	SW-W	1347
95	Markasi 7	Pahi	Kondoa	W	35 54 22.7	4 43 30.0	SE-S	1359
96	Markasi 8	Pahi	Kondoa	W	35 54 22.5	4 43 29.3	SW-W	1392
97	Markasi 9	Pahi	Kondoa	W	35 54 24.3	4 43 30.4	SW-W	1342

No	Site name	Village	District	Present Colour	GPS		Site Aspect	Site Elevation in metre
					E	S		
98	Markasi 10	Pahi	Kondoa	W	35 54 23.0	4 43 32.2	W-NW	1346
99	Markasi 11	Pahi	Kondoa	W	35 54 23.4	4 43 31.8	W-NW	1351
100	Markasi 12	Pahi	Kondoa	W	35 54 24.1	4 43 32.9	W-NW	1352
101	Markasi 13	Pahi	Kondoa	W	35 54 22.3	4 43 32.0	S-SW	1387
102	Markasi 14	Pahi	Kondoa	W	35 54 24.9	4 43 31.4	N-NE	1373
103	Markasi 15	Pahi	Kondoa	W	35 54 25.1	4 43 32.4	E-SE	1354
104	Markasi 16	Pahi	Kondoa	W	35 54 24.3	4 43 32.7	SW-W	1376
105	Markasi 17	Pahi	Kondoa	W	35 54 24.0	4 43 34.1	SE-S	1380
106	Markasi 18	Pahi	Kondoa	W & R	35 54 27.9	4 43 34.4	SE-S	1379
107	Markasi 19	Pahi	Kondoa	W	35 54 30.1	4 43 35.2	W-NW	1373
108	Markasi 20	Pahi	Kondoa	W	35 54 31.0	4 43 35.1	NE-E	1394
109	Markasi 21	Pahi	Kondoa	W	35 54 31.6	4 43 34.2	SE-S	1389
110	Markasi 22	Pahi	Kondoa	W	35 54 31.7	4 43 34.6	S-SW	1389
111	Markasi 23	Pahi	Kondoa	W	35 54 31.5	4 43 33.9	NE-E	1389
112	Markasi 24	Pahi	Kondoa	W	35 54 31.5	4 43 35.3	SE-S	1388
113	Markasi 25	Pahi	Kondoa	W	35 54 32.0	4 43 35.0	SE-S	1401
114	Markasi 26	Pahi	Kondoa	W	35 54 32.3	4 43 35.4	SW-W	1407
115	Markasi 27	Pahi	Kondoa	W	35 54 33.6	4 43 34.2	N-NE	1426
116	Markasi 28	Pahi	Kondoa	W	35 54 32.3	4 43 31.3	SW-W	1442
117	Markasi 29	Pahi	Kondoa	R	35 54 34.2	4 43 31.9	N-NE	1388
118	Markasi 30	Pahi	Kondoa	W,R &Y	35 54 34.1	4 43 31.8	E-SE	1386
119	Markasi 31	Pahi	Kondoa	R	35 54 33.7	4 43 34.4	SW-W	1388
120	Markasi 32	Pahi	Kondoa	R	35 53 58.1	4 43 27.1	S-SW	1341
121	Markasi 33	Pahi	Kondoa	W	53 54 47.4	4 43 56.7	N-NE	1365
122	Markasi 34	Pahi	Kondoa	W	35 54 31.9	4 43 34.5	SE-S	1390
123	Masange 1	Masange	Kondoa	R	35 48 08.0	4 36 26.2	E-SE	1310
124	Masange 2	Masange	Kondoa	W	35 47 59.5	4 36 26.7	SE-S	1331
125	Masange 3	Masange	Kondoa	W & R	35 47 45.7	4 35 48.9	SE-S	1326
126	Masange 4	Masange	Kondoa	W & R	35 48 09.4	4 36 28.2	W-NW	1306
127	Mashariki 1	Pahi	Kondoa	W	35 5519.1	4 44 46.3	NE-E	1494
128	Mashariki 2	Pahi	Kondoa	W	35 55 48.9	4 43 55.8	NW-N	1740
129	Mashariki 3	Pahi	Kondoa	R	35 55 20.5	4 43 24.7	SW-W	1454
130	Mashariki 4	Pahi	Kondoa	W	35 56 04.6	4 43 30.0	SW-W	1352
131	Mashariki 5	Pahi	Kondoa	R	35 55 34.7	4 43 54.9	SW-W	1488
132	Mashariki 6	Pahi	Kondoa	R	35 55 22.7	4 43 48.5	NW-N	1442
133	Matibwi 1	Kiteo	Kondoa	W	35 57 15.2	4 43 59.9	SW-W	1417
134	Matibwi 2	Kiteo	Kondoa	W	35 57 37.1	4 43 51.4	SW-W	1386
135	Matibwi 3	Kiteo	Kondoa	W	35 57 12.5	4 44 04.3	S-SW	1322
136	Matibwi 4	Kiteo	Kondoa	R	35 56 40.9	4 44 09.0	S-SW	1339

No	Site name	Village	District	Present Colour	GPS		Site Aspect	Site Elevation in metre
					E	S		
137	Matibwi 5	Kiteo	Kondoa	W	35 56 35.8	4 43 55.9	SW-W	1345
138	Matibwi 6	Kiteo	Kondoa	R	35 56 33.9	4 43 57.5	SW-W	1365
139	Mirambo	Goima	Kondoa	R	36 24 57.9	5 16 26.3	SW-W	1522
140	Mission 1	Kinyasi	Kondoa	R	36 00 45.4	4 44 05.7	W-NW	1390
141	Mission 2	Kinyasi	Kondoa	R	36 00 58.2	4 44 15.9	N-NE	1406
142	Mission 3	Kinyasi	Kondoa	R	36 00 52.9	4 44 07.1	E-SE	1347
143	Mission 4	Kinyasi	Kondoa	R	36 00 53.4	4 44 10.3	N-NE	1354
144	Mission 5	Kinyasi	Kondoa	R	36 00 55.1	4 44 12.0	N-NE	1341
145	Mlanga 1	Kinyasi	Kondoa	W & R	36 00 49.3	4 44 31.7	W-NW	1349
146	Mlanga 2	Kinyasi	Kondoa	R	36 00 46.0	4 44 21.4	N-NE	1354
147	Mlanga 3	Kinyasi	Kondoa	R	36 00 42.2	4 44 21.6	W-NW	1375
148	Mlanga 4	Kinyasi	Kondoa	W	36 00 41.0	4 44 21.4	NW-N	1395
149	Mlanga 5	Kinyasi	Kondoa	R	36 01 00.1	4 44 18.2	SE-S	1330
150	Mlanga 6	Kinyasi	Kondoa	R	36 01 00.0	4 44 18.9	E-SE	1327
151	Mlanga 7	Kinyasi	Kondoa	R	36 01 00.0	4 44 16.7	N-NE	1327
152	Mlanga 8	Kinyasi	Kondoa	R	36 00 59.8	4 44 16.1	SE-S	1327
153	Mlanga 9	Kinyasi	Kondoa	R	36 00 59.2	4 44 12.2	E-SE	1349
154	Mlimani 1	Pahi	Kondoa	W & R	35 54 42.4	4 43 35.7	SE-S	1358
155	Mlimani 2	Pahi	Kondoa	R	35 54 47.2	4 43 36.9	SE-S	1359
156	Mlimani 3	Pahi	Kondoa	R	35 54 48.4	4 43 35.3	N-NE	1358
157	Mlimani 4	Pahi	Kondoa	W & R	35 54 49.6	4 43 34.6	N-NE	1368
158	Mlimani 5	Pahi	Kondoa	R	35 54 49.2	4 43 34.4	N-NE	1368
159	Mlimani 6	Pahi	Kondoa	W & R	35 54 50.0	4 43 29.5	S-SW	1386
160	Mongomi	Kolo	Kondoa	R	35 52 48.9	4 45 05.0	NW-N	1734
161	Msokio 1	Thawi chini	Kondoa	R	35 43 21.5	4 42 21.9	SW-W	1521
162	Msokio2	Thawi chini	Kondoa	R	35 43 59.0	4 41 11.3	NW-N	1511
163	Msokio 3	Thawi chini	Kondoa	R	35 44 04.3	4 41 06.7	W-NW	1518
164	Msokio 4	Thawi chini	Kondoa	W & R	35 44 06.0	4 41 08.8	S-SW	1519
165	Msokio 5	Thawi chini	Kondoa	R	35 44 07.1	4 41 08.0	SW-W	1541
166	Msokio 6	Thawi chini	Kondoa	R	35 44 07.9	4 41 07.9	W-NW	1591
167	Msokio 7	Thawi chini	Kondoa	R	35 43 25.1	4 42 23.6	W-NW	1368
168	Msokio 8	Thawi chini	Kondoa	R	35 43 24.5	4 42 23.6	W-NW	1371
169	Msokio 9	Thawi chini	Kondoa	R	35 43 24.6	4 42 24.7	S-SW	1393
170	Msokio 10	Thawi chini	Kondoa	R	35 43 23.7	4 42 24.3	S-SW	1393
171	Msokio 11	Thawi chini	Kondoa	R	35 43 28.7	4 42 23.9	SW-W	1392
172	Msokio 12	Thawi chini	Kondoa	R	35 43 29.7	4 42 21.2	SW-W	1407
173	Msokio 13	Thawi chini	Kondoa	R	35 43 31.9	4 42 21.3	SW-W	1427
174	Msokio 14	Thawi chini	Kondoa	R	35 43 50.6	4 42 02.8	SW-W	1505
175	Msui 1	Kingale	Kondoa	R	35 48 53.1	5 02 23.8	W-NW	1304

No	Site name	Village	District	Present Colour	GPS		Site Aspect	Site Elevation in metre
					E	S		
176	Msui 2	Kingale	Kondoa	R	35 47 53.6	5 00 28.3	W-NW	1396
177	Ncholincholi 1	Mnenia	Kondoa	R	35 51 05.7	4 40 42.5	W-NW	1716
178	Ncholincholi 2	Pahi	Kondoa	R	35 52 59.1	4 42 11.1	N-NE	1027
179	Ncholincholi 3	Pahi	Kondoa	W	35 52 46.2	4 42 16.3	N-NE	1033
180	Ncholincholi 4	Pahi	Kondoa	W	35 53 07.9	4 42 55.5	W-NW	1642
181	Ncholincholi 5	Pahi	Kondoa	W	35 53 07.4	4 42 51.9	SW-W	1444
182	Ncholincholi 6	Pahi	Kondoa	W	35 53 10.3	4 42 55.6	S-SW	1440
183	Ncholincholi 7	Pahi	Kondoa	W	35 53 10.5	4 42 55.7	WN-W	1324
184	Ncholincholi 8	Pahi	Kondoa	W	35 53 10.6	4 42 57.6	E-SE	1354
185	Sangasani 1	Thawi chini	Kondoa	R	35 45 00.0	4 43 40.2	SE-S	1481
186	Sangasani 2	Thawi chini	Kondoa	R	35 45 01.5	4 44 01.4	E-SE	1481
187	Sangasani 3	Thawi chini	Kondoa	R	35 45 00.4	4 44 02.7	SE-S	1500
188	Sangasani 4	Thawi chini	Kondoa	R	35 45 00.9	4 44 05.2	NE-E	1465
189	Sangasani 5	Thawi chini	Kondoa	R	35 44 59.8	4 44 00.3	SE-S	1473
190	Sangasani 6	Thawi chini	Kondoa	R	35 44 58.7	4 43 58.3	E-SE	1473
191	Shuleni	Kandaga	Kondoa	W	35 46 23.2	4 32 50.9	E-SE	1293
192	Soya 1	Thawi juu	Kondoa	R	35 44 58.8	4 42 28.5	W-NW	1646
193	Soya 2	Thawi juu	Kondoa	R	35 44 59.6	4 42 29.4	W-NW	1650
194	Soya 3	Thawi juu	Kondoa	R	35 45 00.3	4 42 33.4	W-WN	1643
195	Soya 4	Thawi juu	Kondoa	R	35 45 07.0	4 42 36.1	W-NW	1642
196	Tehani 1	Alagwa	Kondoa	W & R	35 45 50.2	4 38 21.1	W-NW	1438
197	Tehani 2	Alagwa	Kondoa	W	35 45 37.4	4 38 26.6	N-NE	1521
198	Turian 1	Mrijo	Kondoa	R	36 24 56.0	5 16 47.2	SE-S	1444
199	Turian 2	Mrijo	Kondoa	W	36 23 29.7	5 16 09.5	SE-S	1460
200	Uti-Msia 1	Mnenia	Kondoa	R	35 52 29.8	4 40 24.1	S-SW	1318
201	Uti-Msia 2	Mnenia	Kondoa	R	35 52 56.3	4 40 31.2	NE-E	1338
202	Uti-Msia 3	Mnenia	Kondoa	R	35 52 57.8	4 40 30.0	E-SE	1338
203	Uti-Msia 4	Mnenia	Kondoa	R	35 52 53.3	4 40 31.3	S-SW	1338
204	Uti-Msia 5	Mnenia	Kondoa	R	35 52 53.6	4 40 30.5	S-SW	1358

Appendix 4

8 CD with 3175 rock paintings motifs corrected in the study areas