



THE LATER STONE AGE IS NOT SAN PREHISTORY

Justin Pargeter

The Later Stone Age (LSA) is still commonly thought of as a period analogous to the pre-history of San groups in southern Africa (Deacon & Deacon 1999). Analogies are a fundamental component of archaeological research and theory. For example, try explaining how a 300 000-year-old blade was made or used without the aid of an analogy. Analogies help us to understand the rich behavioural component of the archaeological record and they help us to decide which variables are important for documenting changes in human material culture. However, the concepts archaeologists use to describe the broader structure of the archaeological record, such as 'Stone Ages' and 'Industries', are not analogous to any known cultural institutions. V Gordon Childe noted this half a century ago when he remarked that 'boundaries of the several fields of culture do not necessarily coincide' (1951:58).

In this article I argue, as many have before me (e.g. Humphreys 2005), that the LSA is an analytical tool to help organise archaeological data, but that it does not easily equate with any living cultural or linguistic grouping. The LSA has many broad and sometimes disparate meanings and contains a different kind of diversity than that seen in ethnographic hunting and gathering societies. I illustrate some of the key differences between populations living during the earliest parts of the LSA and those San hunter-gatherer groups to which they are most often compared, the Ju/'hoansi of the north-western Kalahari (Figs 1 & 2). I conclude that hunting and gathering takes many different forms in southern Africa and around the world of which the desert-dwelling Ju/'hoansi represent only one variant. In closing, I argue that despite the immense importance of ethnographic analogies in



Fig. 1: Image of Kgao, a Ju/'hoan man from north-western Botswana (Photo Nicole Apelian)

archaeology, the over-emphasis on the LSA as a representation of San prehistory reduces LSA studies and continues to jeopardise the place of these modern communities in contemporary southern Africa.

Defining and identifying LSA assemblages

The founders of South African archaeology, John Goodwin and Clarence van Riet Lowe, coined the term Later Stone Age in 1929. To them, the LSA described the last few thousand years of Stone Age

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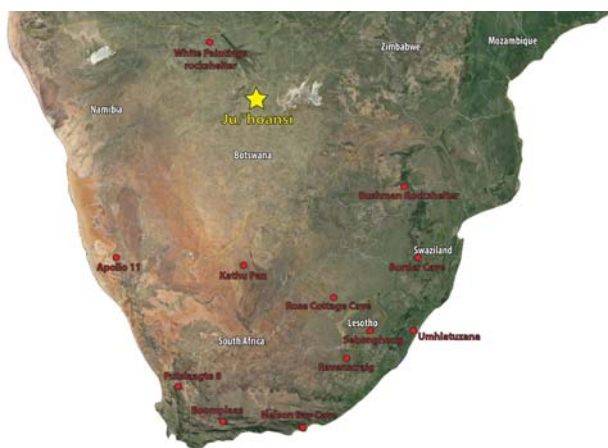


Fig. 2: Map of Later Stone Age sites (red dots) compared with the location of the Ju/'hoansi in north-western Botswana

prehistory specifically in southern Africa and marked the arrival of immigrant populations from further north. Emergent from this was the idea that the LSA could be used as convenient shorthand for the archaeology of ethno-historic (San) hunting and gathering populations. This claim of cultural continuity between the LSA and recent San foraging societies remains a central component of thinking about the LSA (e.g. d'Errico et al. 2012). Yet, the LSA as it is currently understood encompasses a very broad swathe of time, capturing roughly the last 40 000 years of southern African prehistory. The earliest LSA assemblages have traditionally been identified by the predominance and persistence of small stone tool production (Figs 3 & 4).

Table 1 lists seven other traits commonly used to identify LSA assemblages that are compared against the archaeological record of the last 65 000 years in southern Africa. The data used in this table are from three prominent southern African rock shelters: Sibudu Cave, Seihonghong and Border Cave. These data show that no single time slice contains all seven LSA traits, and that the frequency and configuration of these traits fluctuates through time. In fact, the most common aspect of all these periods is what they do

not contain: prepared core technologies, which is a Middle Stone Age (MSA) trait. The two periods that come closest to being most like the archetypal LSA occur between 65 000 and 59 000 years ago, a period conventionally assigned to the MSA, and after 12 000 years ago. The LSA is therefore internally heterogeneous, consisting of traits that have a long, complex and variable prehistory in southern Africa.

Comparing the LSA prior to 12 000 years ago with the Ju/'hoansi ethnographic record

Because LSA-like traits occur more commonly after 12 000 years ago, many archaeologists consider the LSA to be a post-Pleistocene (> 10 000 years ago) phenomenon. After 12 000-years-ago, traces of behaviour similar to those documented ethnographically amongst southern African San hunter-gatherer groups (e.g. exchange, seasonal mobility and symbolic objects) appear more often in the archaeological record. Prior to this, the LSA is patterned in ways that suggest significant differences with these ethnographic populations. The environmental context in which LSA populations lived prior to 12 000 years ago provides a partial explanation for these differences. This was one of the coldest and, in places, driest periods of the last 500 000 years.

Table 2 presents comparative data on five aspects of Ju/'hoansi society and the LSA prior to 12 000 years ago to illustrate a few of these differences. From these data, it is clear that the two case studies differ from one another in a number of instances. Ju/'hoansi groups consume much less meat than is imagined for LSA groups inhabiting cold climates with reduced amounts of edible plant biomass. Even in LSA archaeological contexts that are more than 12 000 years old where organic matter is well-preserved, edible plant remains are rare. LSA populations inhabited a wider variety of environmental contexts, including coastlines, grasslands, highlands and semi-desert regions, and they chose habitation sites based on the availability of water and topographic variability. In contrast, the Ju/'hoansi inhabit semi-desert and desert regions that are topographically homogenous.

Table 1: Seven common traits used to identify LSA assemblages compared to the archaeological record for the last 66 000 years in southern Africa. Data are from Sibudu Cave, Seihonghong and Border Cave

Trait	Time period					
	66–58 ka	58–45 ka	40–18 ka	18–12 ka	12–8 ka	8–4 ka
Unretouched bladelets	✓	✗	☒	✓	☒	□
Absence of prepared cores	✓	☒	☒	✓	✓	✓
Abundance of bipolar cores	✓	✓	✗	✗	☒	☒
Backed pieces	✓	✗	✗	☒	✗	✓
Dominance of scrapers	✗	✗	✗	✗	✗	✓
Bone ornaments/points	✓	✗	✓	☒	✓	✓
Ostrich eggshell ornaments	✗	✗	✓	✓	✓	✓
LSA 'Score'/7	5	1.5	3	4	4	6.5

☒ □ = A weak or possible occurrence and half a point (Mitchell 1988; Wadley 1993, 2005)

LSA subsistence prior to 12 000 years ago was unpredictable and concentrated in patches of dense biomass containing large mammals and aquatic resources. In contrast, the Ju/'hoansi resource structure is more predictable but sparse, and found in smaller packages, such as gathered plants like mon-gongo nuts, with occasional meat packages being brought into their diet. This difference is critical because the structure of food resources can affect many other aspects of forager life, such as sharing practices, degrees of mobility and group sizes. Yet, despite these differences both the LSA prior to 12 000 years ago and the Ju/'hoansi examples show evidence for the production of technology that is relatively quick to make, and is portable and maintainable. This is a product of the comparatively high levels of residential mobility in both examples, a situation in which light and maintainable gear would be a technological requirement. What is clear from this brief exercise is that the desert-dwelling San groups ate different foods, lived in different areas and practised different social arrangements to most LSA populations before 12 000 years ago.

How representative are the Ju/'hoansi of hunter-gatherer variability?

The LSA is thought of as the period in which an ethnographically recognisable hunting and gathering way of life developed in southern Africa. Yet, for us to truly appreciate the obvious variability within the LSA, and the broad range of ethnographic contexts from which we can draw analogies to understand this variability, we need to understand variation in the way hunter-gatherers behave. Rather than being a single economic way of life, the term 'hunter-gatherer' represents an incredibly wide-range of behaviours (Kelly 2013). Fig. 5 illustrates five behavioural traits and their range of variation in worldwide hunting and gathering populations. Indicated in this figure are the Ju/'hoansi groups and how they relate to this worldwide range of hunter-gatherer variability. These data illustrate that the Ju/'hoansi consume less meat, more plant matter and far fewer aquatic resources than global averages for hunting and gathering populations. The Ju/'hoansi are also somewhat more mobile and live at lower population densities than many other hunter-gatherer groups.

This simple comparison shows two things, first, that there is no such thing as a 'typical' hunter-gatherer and, second, that the Ju/'hoansi represent only a set



Fig. 3: Later Stone Age small cores for the production of microliths from the c. 24 000-year-old layers at Sehonghong, Lesotho



Fig. 4: Later Stone Age bladelets from the c. 24 000-year-old layers at Sehonghong, Lesotho

of values on a complex and multivariate spectrum of behavioural variability. Analogies do not require a direct historical link between the cases being compared, but must show that a relational link exists between groups that inhabit similar environments, practise similar subsistence activities, etc. Being explicit about what similarities exist between cases in a comparative analysis allows for testable hypotheses about why behaviour varies and the choices humans make in variable environments. Following on from this, archaeologists are not limited only to southern African ethnographic examples when interpreting LSA hunter-gatherer behavioural variability.

Table 2: Comparison of subsistence, environment, site selection and technology between ethnographically documented Ju/'hoansi groups and the LSA archaeological record prior to 12 000 years ago

Trait	Ju/'hoansi	LSA > 12 ka
Subsistence	Gathering 67%, hunting 33% of diet	Hunting a larger component of diet
Climatic conditions	Semi-desert	Grasslands, highlands, coastal environments, semi-deserts, Mediterranean climates
Site selection	Water (wells)	Topographic diversity; water (rainfall)
Resource structure	Predictable, but sparse with small, dispersed food packages	Unpredictable, but dense (patchy); large mammals, aquatic resources

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ARCHAEOLOGY IN SOUTH AFRICA

Termites of the Gods

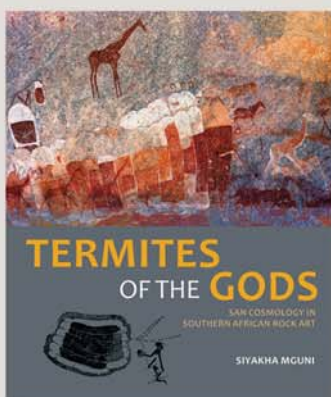
San Cosmology in Southern African Rock Art

Siyakha Mguni

ISBN: 978 1 86814 776 2

In *Termites of the Gods*, Siyakha Mguni narrates his personal journey, over many years, to discover the

significance of a hitherto enigmatic theme in San rock paintings known as 'formlings'. Formlings are a painting category found across the southern African region, including South Africa, Namibia and Zimbabwe, with its densest concentration in the Matopo Hills, Zimbabwe. Drawing on San ethnography published over the past 150 years, Mguni argues that formlings are, in fact, representations of flying termites and their underground nests, and are associated with botanical subjects and a range of larger animals considered by the San to have great power and spiritual significance.



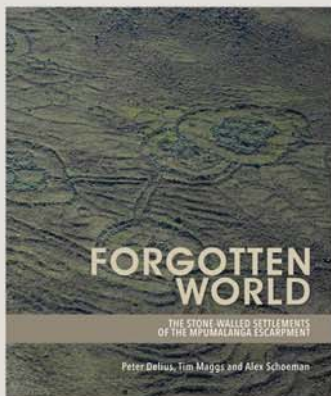
Forgotten World
The Stone Walled Settlements of the Mpumalanga Escarpment

Peter Delius, Tim Maggs and Alex Schoeman

ISBN: 978 1 86814 774 8

Endless stone circles, set in bewildering mazes and linked

by long stone passages, cover the landscape stretching from Ohrigstad to Carolina, connecting over 10 000 square kilometres of the escarpment into a complex web of stone-walled homesteads, terraced fields and linking roads. *Forgotten World* tells the story of Bokoni through rigorous historical and archaeological research, and lavishly illustrates it with stunning photographic images.



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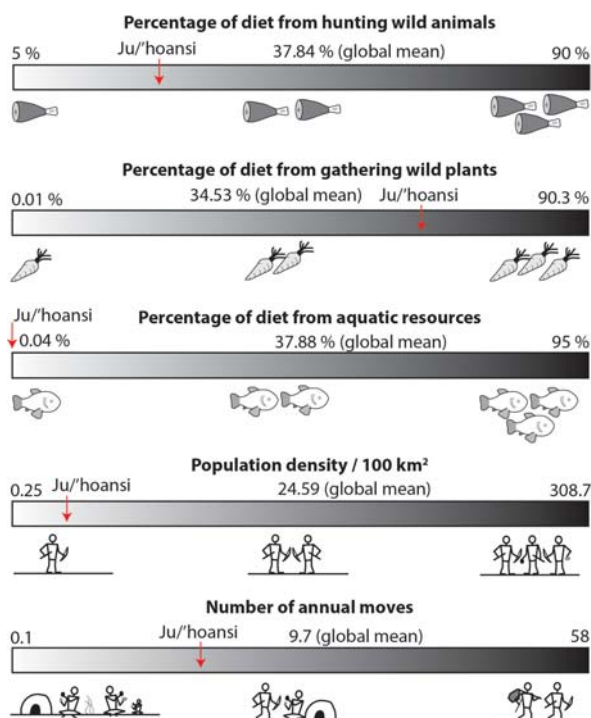


Fig. 5: Comparison subsistence, mobility and population density data from global hunting and gathering populations and the Ju/'hoansi. Data from Binford (2001) (Illustrations courtesy of John Shea)

Some conclusions

The LSA is internally inconsistent and highly variable, and it shares many elements with periods in southern African prehistory not currently labelled 'LSA'. The majority of the LSA prior to 12 000 years ago occurs in a context of variability not seen amongst ethnographically known Ju/'hoansi communities. Hunter-gatherers encompass a wide spectrum of behaviours of which the Ju/'hoansi represent a unique set of values. To understand the rich and diverse archaeological record in southern Africa we need to embrace the rest of this spectrum. The strength of archaeological research is in dealing with long-term cultural diversity. The ethnographic record of living hunter-gatherer groups represents but a fraction of this diversity.

Here we might reasonably ask how likely it is that the small sample of hunter-gatherer groups documented in the time sliver of modern ethnography happens to constitute a behavioural microcosm of all the variation that occurred over the last 40 000 years? It is widely acknowledged that even the groups in our tiny ethnographic sample are themselves the result of rich and complex social, economic and political pathways that cannot be neatly imposed on the broad concepts archaeologists use to describe the material culture record they study.

There is thus a two-way problem: the past contains a diversity that cannot have been entirely encapsulated in the historical present, and the present contains complexity of detail that cannot easily be fitted to the

Continued on page 23

eCRAG: EASTERN CEDERBERG ROCK ART GROUP



We all know that archaeologists like old things. But when the husband of one of the younger members of eCRAG saw a photo taken at a planning meeting a couple of years ago, and told her she looked like a matron with inmates from an old-age home, he should have looked closer. The age range of the 40 volunteers, who are all members of the Western Cape Branch of the South African Archaeological Society (ArchSoc), is in fact from 15 to 85, and only two live in retirement villages. Like Cleopatra, age does not wither us, nor custom stale our infinite variety. The only injuries so far have been damaged ankles, and both belonged to under-40s. What brings us together over about eight weekends and a couple of parties a year is not our age, but a deep love and appreciation of the Cederberg landscape, and the rock paintings and archaeological sites that were left there thousands of years ago.

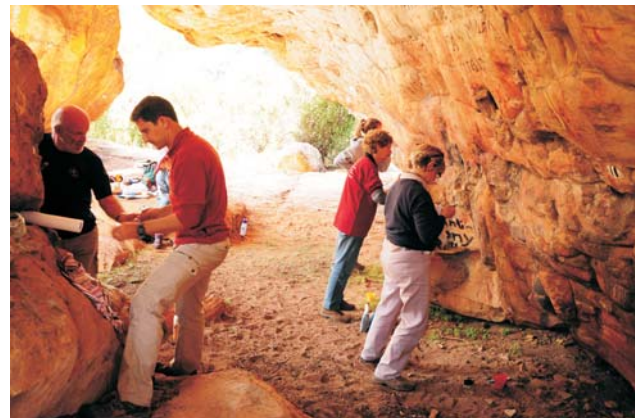
The creation of eCRAG had several sources of inspiration. One was the voluntary work by 'Ginger' Townley Johnson, Hym Rabinowitz, Percy Sieff, and Jalmar and Ione Rudner who between the 1950s and the early 1980s documented about 500 rock art sites in the Cederberg. Another was the eagerness for information about the archaeology and rock art of the Cederberg shown by property owners who have been trying to restore the environment to what it might have been like before farming was introduced in the 18th century. A third was the realisation that the membership of the ArchSoc was an untapped resource and could be put to good use with a little training. In fact, a project like this might even attract new members to the society.



Members of eCRAG at a planning meeting in 2012, or matron and inmates at an old-age home? (Photo: J Deacon)

The first seeds were planted by ArchSoc member Simon Liell-Cock who met Johan van der Westhuizen in about 2006. Johan's property Bakkrans is on the eastern margin of the Cederberg where the mountains meet the western extension of the Tanqua Karoo and the Koue Bokkeveld to the south. After learning about Johan's plans to create the Red

Cederberg Conservancy around Bakkrans, Simon arranged a meeting with Janette Deacon. Together with Stephen Townley Bassett, the nephew of 'Ginger' Townley Johnson, she had undertaken a survey of the Cederberg wilderness in 1991 and 1992, and had developed a management plan for the area. Janette and Simon recognised an opportunity to record the rock art at Bakkrans using skills and materials developed by her for a series of rock art training courses for the Southern African Rock Art Project (SARAP) with funding from the Getty Conservation Institute in Los Angeles. To avoid the tedium of keeping accounts, it was agreed to offer our services at no charge to property owners in exchange for free accommodation. Members pay their own transport costs and bring their own food for weekends that typically last from Friday to Sunday afternoons.



eCRAG members recording and removing graffiti at a site on the Pakhuis Pass near Clanwilliam. (Photo: J Deacon)

Once Johan had agreed to offer accommodation during the survey, a two-day training course in basic rock art recording was arranged with the help of Dr Simon Hall at UCT. Yvonne Viljoen, chairman of the Western Cape Branch of ArchSoc, identified some likely candidates and about 25 people turned up for the course in July 2007. Seven years later, after many vigorous debates and discussions, we have a logo, a T-shirt, an enthusiastic membership that has increased by 30 per cent and a well-stocked first-aid kit. With the active assistance of all our members, and especially Rika du Plessis, CapeNature manager of the Matjiesrivier Nature Reserve that adjoins the Red Cederberg, we have recorded 869 sites on 27 properties. Of these sites, 648 have rock art, 137 are archaeological artefact sites without rock art, and 74 are ruins of structures such as kraals and dwellings. Thanks to the vital participation of Nicholas Wiltshire, all the information, including photographs, has been included in the SAHRIS database at the South African

Heritage Resources Agency (SAHRA). One of our goals is to log 1 000 sites before we are ten years old.

Descendants of the people who made the paintings, like Arrie Beukes, the manager of Bakkrans, and Heinrich Titus, manager at Voëlvlei, have accompanied us on surveys. At annual meetings of the Cederberg Conservancy, we spoke to hundreds of local inhabitants and CapeNature employees who gathered for a day of information-sharing and lunch. Several CapeNature field rangers attended Rock Art Tourist Guiding courses at the Living Landscape in Clanwilliam and joined us on field trips as well.

So far, eCRAG has produced management plans for rock art sites on six properties (six more are in preparation), and members have removed graffiti under supervision from eight rock shelters with paintings and one without paintings. Photographs and information on the rock art in what is now known as the Red Cederberg Karoo Park can be seen on the website www.redcederberg.co.za. Go to 'Bakkrans', click on 'Read more' and then on 'Bakkrans Rock Art'.

The sites recorded illustrate the experiences of San hunter-gatherers over at least the past 5 000 years or more and the presence of Khoekhoe herders within

animals) than in the Drakensberg (1 per cent). Human figures, often painted in groups of 10 to 30 dancing people with evidence for trance experience, are much more common than animals. Although the gender of the majority of human figures is not clearly indicated, men predominate when the distinction is made. Handprints are common and there are many tantalising patterns of lines and dots that are difficult to interpret.

Our efforts have not gone unnoticed. In 2011 the Western Cape Department of Cultural Affairs and Sport awarded a trophy to Yvonne Viljoen and Simon Liell-Cock on behalf of the Western Cape Branch of ArchSoc for its Contribution Towards the Promotion of Archaeology (including Rock Art) in the Western Cape. In 2013/14, eCRAG and Janette Deacon received an award from the same department for the Rock Art Management Project of the Year. Cape Nature acknowledged the dedication of Rika du Plessis in encouraging assistance from voluntary organisations like eCRAG for the development of natural and cultural resources in the Matjiesrivier Nature Reserve with an award in 2013.

Janette Deacon and eCRAG members



eCRAG members measuring a rock shelter at Die Mond and recording its paintings in 2008 (Photo: J Deacon)

the last 2 000 years and of early European colonists in the last 300 years. Apart from providing an insight into the history of the people who have lived there, the images embody sophisticated beliefs about the power of the spirit world and the work of specialists who could access that power for rainmaking, healing and controlling game animals.

As in other regions in South Africa, the eland is the most commonly painted animal because of its significance in the San belief system, but elephants are more numerous here (10 per cent of identifiable

ARCHAEOLOGY IN AFRICA

Little Foot dated to three million years

For more than a decade, anthropologists have debated the age of the *Australopithecus* fossil called Little Foot discovered in Sterkfontein Cave. Now researchers say they have conclusively shown that the specimen is about three million years old, making it the oldest nearly complete *Australopithecus* skeleton ever found. Soon after the initial find, a magnetic study suggested the bones were 3,3 million years old. However, a 2006 study published in *Science* started an anthropological controversy when it maintained that based on the age of calcium-rich rocks surrounding the fossils, Little Foot was 1,1 million years younger. Two other later studies dated the skeleton to 2,35 and 2,58 million years ago.

Recently, Little Foot's discoverer, Wits anthropologist Ronald Clarke and colleagues weighed in. They suggested in a *Journal of Human Evolution* paper that geology may have confounded the estimates of the skeleton's age. They presented evidence that a partial collapse of the fossil-bearing stones into a lower cavity of the cave led to a confusing geological juxtaposition. After the collapse, a calcium carbonate rock, known as flowstone, formed in the spaces around the fossils. This led to the mix-up millions of years later when scientists dated the younger rock and believed it had formed at nearly the same time as the fossils. The complete skeleton was removed after nearly 15 years of work.

Discovery News, 14/03/2014

BECOMING MODERN

Thoughts on symbols and consciousness

David Lewis-Williams

Today many researchers are interested in the development of what is called 'modern human behaviour'. We know that our *Australopithecine* ancestors did not think and behave as we do, certainly not in every way. So we ask: what are the distinguishing characteristics of our own human behaviour? Then we can ask: when did those characteristics start to appear in the archaeological record? An even more difficult question is: what sorts of traces would those behaviours leave – if any?

In this article I briefly consider two components of modern human behaviour: symbolism and consciousness. 'Symbolic thought' is nowadays said to be a defining component of modern human behaviour. We used to speak about 'Man the Tool-maker', tool-making being taken as a mark of intelligence. Nowadays it is *Homo symbolicus*, a species closely associated with the use of symbols and the archetypal symbolic system, language. But 'symbolism' implies a framing mental capacity; we may call it 'modern human consciousness'. Evolving intelligence is obviously important, but it is not the same thing as consciousness.

Symbolism

In the archaeological literature the concept that the word 'symbol' denotes is sometimes fuzzy. Philosophers, semioticians and anthropologists have, however, expended a great deal of energy trying to sort out what are difficult definitional issues (e.g. Sperber 1975; Turner 1967; Innis 1985). So I begin by examining the definition of 'symbol' that archaeologists generally use. Then I ask a question that is key to archaeological work on this topic but one that is little discussed: out of what 'seeds' could what we understand as symbols have evolved? The capacity to use symbols could not have appeared suddenly, like Aphrodite from the sea, fully formed in all her beauty. There must have been some precursors that, over time, developed into what we now call symbolic behaviour. Could archaeologists mistake these embryonic precursors for symbols? If we pursue these lines of thought, we shall rather unsettle our identification of symbolism in the archaeological record.

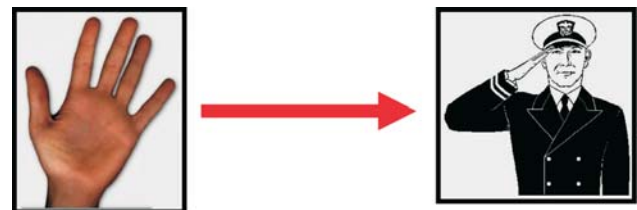
A symbol is usually said to be something that stands for something else. But that is not all. The relationship between the 'object' and the symbol must be arbitrary and socially constructed. By 'arbitrary' we mean that

there is no *necessary* link between the two elements. The word 'apple', for instance, bears no resemblance to the fruit. It is a 'pure' symbol.



Indeed, in another language, we could say '*pomme*' and that word/symbol would stand for the same fruit. Switching to another language shows that the symbol is not only arbitrary: it is also socially constructed. It is not inherited by all human beings. A group of people living together for a long period came to agree that their particular word, for them, symbolised the fruit.

We can now consider two possible precursors of symbols. Synecdoche is one of them: a part of something can stand for the whole. A well-known example is the nautical phrase: 'All hands on deck!' Here the hand (a part) stands for the whole (a sailor).



A more modern example is the use of 'wheels' to mean a car.

Metonymy, on the other hand, is the use of an associated thing to stand for the thing itself. Here we may speak of 'The Crown v. Joe Blogs'. In that British legal phrase, 'Crown' stands for the state.



An intriguing aspect of both synecdoche and metonymy is that we find examples of them in the behaviour of creatures that are not human. For example, some animals urinate to mark their territory. Can we say that the urine 'symbolises' the territory? Probably not. The urine is not entirely arbitrary and its use as an indicator is not socially constructed; it is

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inherited. Nevertheless, a part of the animal stands for the whole animal: so we have an instance of synecdoche. And the implied presence of the whole animal in turn implies its territory. It seems likely that this sort of thing (not necessarily urination) existed among pre-human hominids. Could their capacity for synecdoche have been a seed that eventually evolved into arbitrary, socially constructed symbolism? Could something like this in the pre-human archaeological record be mistaken for the presence of symbolism?

Metonymy also occurs in nature. For instance, bears scratch trees as part of their behaviour. It could be said that certain kinds of scratches on trees are indicative of the normal daily behaviour of bears: where you find bears, you find scratches. However, some species of bears use scratch marks (along with odour) to mark their territory. The marks are not part of a bear, as in synecdoche. Rather, they are metonymically associated with bears. Here again we have something in nature that approaches symbolism. Could something like it, encountered archaeologically, be mistaken for symbolism?

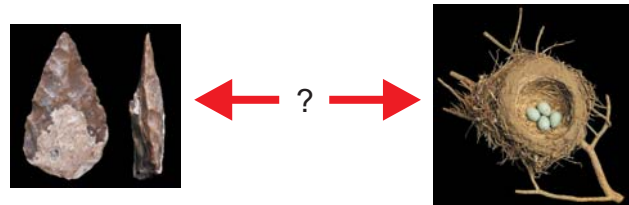
In the French Upper Palaeolithic Rouffignac cave there is tantalising evidence for a possible relationship between cave bears (a now-extinct species) and human beings. The bears, which hibernated deep in the caves, left scratch marks on the walls (see photo below). Next to those marks, human beings used two and three fingers to make comparable but longer marks in the soft 'mud' (*mondmich*) that coats parts of the walls. As part of the same panel, they also made images of woolly mammoths, another extinct species. There are two facing one another in the photo. Were the human beings responding to the bears' scratch marks with comparable marks of their own? Were they making some statement about occupancy of the caves and the underworld? Possibly.

We can now move to a much earlier time than the



A panel from the French Rouffignac cave. The two woolly mammoths have large curving tusks and high-domed heads. There are bear scratch marks in the lower left of the panel and long, human-made lines over the mammoths. Flint nodules protrude from the soft surface.

Upper Palaeolithic. If a member of the species *Homo erectus* (± 1 million BP) placed a hand axe at a certain spot to mark it as a territory, could he or she be said to be indulging in symbolic behaviour? I suggest not. Hand axes, so similar in shape whether found in Europe, Asia or Africa, seem to be the result of an inherited, neurologically wired form of behaviour. They are comparable to the shapes of birds' nests that are peculiar to given species. The repeated shapes of the nests are not socially agreed upon: they are inherited.



Yet some hand axes are so large and finely made that they seem to have served something other than purely practical purposes. This is an unsolved archaeological conundrum.

It is sometimes said that what appear to be symbols in the archaeological record point to the storage of information outside of the human body and are therefore an indication of modern human behaviour. This is questionable. The information has to be already in the mind of the human being who looks at the 'mark'. Without that foreknowledge, the 'mark' remains unintelligible. The word 'apple' is meaningless to someone who has no knowledge of apples. The supposed symbol is merely a mnemonic.

In sum, neither synecdoche nor metonymy can be said to be purely symbolic. Nevertheless, it seems that, given appropriate gene mutations, the mental capacity of early hominids to use synecdoche and metonymy could have been the seed that evolved into symbolic behaviour. Researchers should consider whether something found in the archaeological record is the result of synecdoche or metonymy rather than fully symbolic thought and behaviour.

Consciousness

By identifying seeds, we begin to understand how symbolic thought may have developed. But there is more to it. Symbolic thought is part of the second matter that I consider: consciousness. Symbolic thought entails being able to hold in one's mind 'pictures' of one's self as well as a future and a past time. The 1972 Nobel Prize winning immunologist Gerald Edelman (1994) has turned his attention to this difficult issue. He distinguishes between primary consciousness, as found to varying degrees in animals, and higher-order consciousness, as found in human beings only.

Very briefly, Edelman defines primary consciousness as having mental images in the present. This type of consciousness is not accompanied by any sense of a

person with a past and a future. Primary consciousness is, as Edelman aptly puts it, a 'remembered present': 'An animal with primary consciousness sees the room the way a beam of light illuminates it.' An animal with primary consciousness can, however, have long-term memory (a dog remembers its name for years), but it cannot plan a future (a dog does not consider what it will do tomorrow). This, I suggest, is, *in various degrees*, the kind of consciousness that early hominids possessed (Lewis-Williams 2002).

On the other hand, higher-order consciousness (found only in *Homo sapiens*) allows a subject to think of his or her own existence, to recall a past and, on the basis of that recollection, picture and plan a future. At once, language (with past, present and future tenses), notions of ancestors and far-flung kinship relations become possible. Indeed, fully modern language with its range of tenses is a *sine qua non* of higher order consciousness, perhaps a result of it.

It is only in this state of consciousness that *Homo sapiens* can build a notion of another realm. Dogs may dream, but, as far as we can understand, they do not act as if their dreams were messages from a Great Dog in the sky. Their limited primary consciousness prevents that. Higher order consciousness, which would make such a belief possible, comes out of a complex form of neural activity that creates aberrations: dreams, visions, hallucinations, voices in the brain. These aberrations were not specifically 'selected for'; rather, they are accidental spin-offs from the evolution of the neural structures and functioning that gives us higher order consciousness. This 'advanced' sort of consciousness also, and fortunately, makes it possible for us to distinguish between false perceptions (dreams etc.) and reality, though human beings often seem reluctant to make that distinction.

When did our minds become fully modern? Researchers now believe that the evolution of fully modern people was not neat and linear. Rather, it was patchy and occurred during the interbreeding of various species and subspecies. This evolutionary mosaic developed, it is now generally agreed, in Africa (McBrearty & Brooks 2000). Early hominid forms emigrated from Africa; then, millennia later, fully modern humans followed. As a result there came a time when the early form known as the Neanderthals, who were living in western Europe, found that they had *Homo sapiens* neighbours, a strange situation that lasted for some thousands of years.

The archaeological evidence from this period allows us to study the two kinds of consciousness (Lewis-Williams 2002). There is much debate today about just how human the Neanderthals were. There is, for instance, disagreement over whether they buried their dead, as did Upper Palaeolithic humans. Certainly, they did not place elaborate 'offerings' with their interred dead. Probably they could not envisage an

'after-life' in which those offerings would be useful.

On the other hand, it seems that they were intelligent enough to borrow types of stone tools and the technological sequences employed in making them. They probably used these tools for the same purposes (cutting, scraping, etc.) as *Homo sapiens* did. A few personal ornaments, probably obtained from their fully human neighbours, have also been found in Neanderthal deposits, but it is doubtful if they signified exactly the same thing (probably categories of social status) as they did for the humans. Most importantly, despite some dubious claims for scratch marks and some hand prints, Neanderthals did not make art – carvings or images on cave walls. Their form of primary consciousness did not permit the mental ability to make art and understand imagery.

Their problem was not merely a lack of intelligence. Rather, it seems that Neanderthals had a form of primary consciousness, perhaps even one that was fairly advanced, while their fully human neighbours had a higher order consciousness that enabled them to conceive of a future and a past, to hold images of those realms in their minds and to construct complex kinship systems, religion and art. The more advanced neighbours could think symbolically and were fully human.

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ARCHAEOLOGY IN BRIEF

Grain stores found at Çatalhöyük. A cache of perfectly preserved Neolithic grain, the largest such find in the Middle East, has been discovered in residential buildings constructed around 8 200 years ago at Çatalhöyük in Central Turkey. Çatalhöyük is one of the centres of urbanisation of the earliest farming communities and one of the most famous archaeological sites in the world. The multi-row grains were found in four containers formed from packed clay in a 7 m² room. In the two grain hoppers excavated were almost 5 kg of grain. The find dates to a period when this settlement was in decline and inhabited by a single household. Çatalhöyük was inhabited between 7200 and 6000 BC. In its heyday the densely built-up area covered several acres and had a population of up to 6 000 inhabitants.

Past Horizons, 14/01/2014

Stonehenge secrets revealed by underground map

Archaeologists have unveiled the most detailed map ever produced of the earth beneath Stonehenge and its surrounds by combining six different techniques to scan the area with unprecedented resolution to a depth of 3 m. Early results suggest that the iconic monument did not stand alone, but was accompanied by 17 neighbouring shrines. Among the surprises yielded by the research are traces of up to 60 huge stones or pillars that formed part of the 1.5 km wide 'super henge' previously identified at nearby Durrington Walls. Prof Vincent Gaffney of the University of Birmingham, the project's lead researcher, said one key question always remained: 'Was it really an excluded place where only special people would come?' The team's three-dimensional map, which covers an area of 12 km², shows that this was not the case. Under one of the numerous mounds they identified a 33 m long timber building about 6 000 years old, probably used for ritual burials and related practices, possibly including excarnation (stripping flesh from bones).

Another 17 mounds revealed previously unseen ritual monuments about the same age as Stonehenge itself. A number of other nearby sites were associated with the henge, such as a longbarrow. An inspection of the Cursus and the Durrington Walls also revealed new insights. The work unveiled two additional pits inside the prehistoric Cursus, an enormous, elongated circular trench. The Cursus is aligned in the east-west direction and the pits were found one in each end, pointing to Dusk and Dawn. This particular alignment is closely related to the position and orientation of Stonehenge, which was built as known by us some 300 to 500 years later. The large separation in time indicates that both monuments were not conceived or planned as a whole.

10/09/2014

Oldest cave art in Indonesia?

Paintings of miniature buffalos, warty pigs and human hands that cover the walls and ceilings of Indonesia's Sulawesi caves could be among the oldest examples of cave art in the world as some of the paintings may be more than 40 000 years old. 'It was previously thought that Western Europe was the centerpiece of a "symbolic explosion" in early human artistic activity, such as cave painting and other forms of image making around 40 000 years ago,' said study leader Maxime Aubert, an archaeologist and geochemist at Australia's Griffith University. 'However, our findings show that cave art was made at opposite ends of the Pleistocene Eurasian world at about the same time, suggesting these practices have deeper origins, perhaps in Africa before our species left this continent.'

Archaeologists have known about the Sulawesi cave art for decades and have also found shellfish, animal bones, pigment-stained stone tools and even ochre 'crayons' inside the caverns, but the paintings were assumed to be prehistoric, if relatively young. Archaeologist Adam Brumm of the University of Wollongong first noticed small cauliflower-like knobs on some of the hand stencils while doing research in Sulawesi in 2011. These crusty bumps are actually calcite deposits known as coralloid speleothems or, more informally, ". They contain tiny amounts of radioactive uranium that decays to thorium over time. By measuring the ratio of uranium to thorium in the cave popcorn layers, the minimum age of underlying artwork can be determined. Aubert and his colleagues determined the age of 14 paintings inside seven caves and found the artworks to range from 17 400 years to 39 900 years old. But since this type of dating only provides a minimum age, the paintings could be much older.

The revelation that art was being made on opposite sides of the world during the Ice Age suggests that symbolic painting could have originated independently, or perhaps that art-making originated much earlier in Africa before humans departed from there. Prof. Benjamin Smith, a rock-art expert at the University of Western Australia, said it was 'highly important but not surprising that we have finally found evidence that settlers in Southeast Asia had rock art as part of their cultural package some 40 000 years ago.' Archaeologists already had some clues that this 'cultural package' predated the cave art in Europe. Ochre had been found on human remains in burials in Israel dating back to 100 000 years ago, Smith said, and humans left decorated ostrich eggshell in caves in South Africa as early as 100 000 years ago. 'What is clear is that those who continue to try to place Europe at the centre of the human story hold an untenable position,' Smith commented. He thinks scientists studying the and symbolic thought should shift their attention to Africa, Asia and Oceania.

Nature/Live Science, 08/10/2014

Human remains in mausoleum of First Emperor

Archaeologists believe that excavation of small burial pits inside the mausoleum of Qin Shi Huang, China's First Emperor (259–210 BC), have proven historical records that say imperial concubines were immolated and buried in sacrificial burial pits. Ten of the 99 burial pits have been excavated. China's First Emperor is famous for the army of terracotta warriors that stand guard over his tomb. According to the historical records, his mausoleum, which took 37 years to construct, required 720 000 workers. Many labourers died of hardship during its construction and all the workmen were entombed with the emperor in order to silence them.

Ancient Origins, 25/01/2014

UNDERSTANDING HUNTER-GATHERER ROCK ART IN SOUTHERN AFRICA

David Pearce

Critical assessment of arguments by peers is crucial to academic research through all branches of the sciences. This is, essentially, the mechanism by which knowledge production is refereed. Critical assessments, however, need to be made from informed perspectives. In his recent critique of the understanding of southern African hunter-gatherer rock art, Victor Biggs (2014) raises serious methodological issues and alleges gross empirical errors on the part of researchers. In this brief article I respond to some of his complaints. Because of space constraints I do not discuss the well-known paintings of soldiers or the apparent painting of the 'Victorian lady'.

The first methodological point Biggs raises is that of using ethnographies from Bushman groups living under different climatic conditions and not directly descended from the painters of hunter-gatherer rock art: '[researchers] try to interpret rock art through a so-called ethnography of people who never had any tradition of rock art and who, living in a drier climate than the painters, developed different beliefs' (Biggs 2014:1). The matter of climate is easily dismissed: there is nothing to suggest that climate determines belief systems. Indeed, environmentally determinist arguments have long been discredited across the social sciences. As an example, one could note that Christianity, a religion that developed in arid conditions in the Middle East, thrived for many years in the damp conditions of England.

What then of the differences in time and space between the 19th and 20th century ethnographic information we have and the archaeological rock art we are trying to understand? What is important is the closeness of the 'fit' between the ethnographic and archaeological cases. As a start, it should be noted that there are multiple, empirically demonstrable similarities in belief and ritual between northern and southern Bushman groups. Numerous anthropologists and archaeologists have commented on these parallels. These similarities have been established not in vague general terms, but through point-by-point comparisons. Even though other aspects of the societies may differ (e.g. aggregation and dispersal patterns), the beliefs are fundamentally similar. As the anthropologist Alan Barnard (2007:96) has clearly noted: '[R]eligion is far more uniform throughout Bushman and even Khoisan southern Africa than are material aspects of culture and society'.

Next we need to consider the 'fit' between the ethnographies and the rock art. As has been demonstrated in numerous publications, the combined ethnographic record 'fits' southern African hunter-gatherer rock art in great detail. There are clear parallels between, on the one hand, ethnographically recorded rituals (particularly the trance or healing dance), accoutrements, physical reactions to altered states, descriptions of transformations and so forth, and, on the other, features of the meticulously detailed rock art images. To deny these similarities is delusionary. Whilst there may have been some differences in details of belief between the people from whom ethnographies were recorded and the makers of the art, the overall cosmology and pattern of ritual are demonstrably similar. The Bushman ethnographies *are*, it should be noted, the product of indigenous knowledge and, as such, can help us to understand the southern African hunter-gatherer rock art. Seen in this light, Biggs's (2014:1) likening of rock art research to using Hindu belief to understand Christianity can be seen for what it is: a misleading diversion. What researchers do is more like using Anglican ethnography to understand Catholic stained glass windows.

Indeed, the analogical arguments in which Bushman ethnographies are used are significantly more subtle than Biggs's (2014:1) 'match up' considers. This type of argument is well established; indeed, a great deal has been written about it from the point of view of both the method of analogy arguments and the application of the method to hunter-gatherer rock art. The matter has been thoroughly investigated.

Much of Biggs's unhappiness with rock art interpretation seems to relate to /Xam Bushman beliefs about rain animals. /Xam Bushman descriptions of rain animals, whilst varied, are not infinite. Such variation is to be expected amongst non-literate people with a non-dogmatic religion. Not all 'monsters' fit into this emic category, nor has anyone argued that they do. Other types of 'non-real' creatures are described in the ethnographies. Similarly, a variety of 'non-real' animals are found in the paintings that do not conform to ethnographic descriptions of rain animals. To suggest that 'all Bushman lives are considered to revolve around making rain for Black farmers' (Biggs 2014:2) is nonsensical. Certainly, there is historical evidence that Bushmen made rain for neighbouring farmers in particular times and places. No one, however, has suggested that this was the central pivot of Bushman life or that all rock art had to do with rain control.

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Biggs (2014:2) states further that 'Black South Africans have been totally ignored and alienated by our rock art researchers'. Contrary to his major assertion, numerous researchers *have* seriously considered Nguni beliefs for at least the past three decades. Which elements of Bushman belief and ritual have been widely incorporated into southern Nguni beliefs has been discussed in detail by David Hammond-Tooke, while Frans Prins has described particular instances where Nguni ritual specialists interact with hunter-gatherer rock art. Similarly, Pieter Jolly has proposed which elements of southern Nguni religion may have been incorporated into hunter-gatherer belief and found their way into rock paintings. Moreover, several researchers have considered in detail testimony from descendants of Bushmen now living as part of Nguni communities and, indeed, the wider issue of Bushman interactions with southern Nguni and BaSotho. In recent research, Sam Challis has drawn not only on Nguni sources in understanding the rock art in a particular area, but also BaSotho and Khoe sources. It seems that Biggs has missed all this work.

Whilst it has long been accepted that there was interaction between hunter-gatherers and Nguni groups in the past, and that some of this interaction was in ritual, it does not follow that everything that contemporary Nguni people claim is a true representation of the past. Social and political situations in the present leave much scope for re-interpreting and re-inventing the past.

Another point to consider when evaluating the utility of Nguni beliefs to interpreting hunter-gatherer paintings is the age of the art. Whilst the art is notoriously difficult to date directly, more than a decade ago Aaron Mazel and Alan Watchman reported relative dates that suggest Drakensberg paintings have ages in the order of thousands rather than hundreds of years. Work that I and colleagues are currently undertaking to date paintings directly demonstrates this to be the case. Even though some rock paintings are clearly very recent, current evidence shows that many paintings probably predate contact with the Nguni.

Biggs's (2014:2) second major area of concern seems to be with the accounts the Bushman Qing gave to Joseph Orpen (1874). He suggests that the exchange lacked indigenous knowledge. Given that this is the only recorded instance of a Bushman with knowledge of rock art explaining it, it is inconceivable that there could be a 'lack of indigenous knowledge' (Biggs 2014:2). One is tempted to ask how more indigenous one could get. The Orpen article has recently been republished (McGranaghan et al. 2013) and is available from the journal website (www.sahumanities.org/). Biggs refers specifically to Qing's comments on the Melikane and Sehonghong paintings in Lesotho. I will consider each in turn.

Biggs (2014:2) quotes Qing (Orpen 1874:2) as saying

of the therianthropes in Melikane that 'these (sic) were men who had died and now lived in rivers'. Based on this he suggests that the paintings should be understood in terms of Nguni beliefs in 'water divinities'. Contrary to Biggs, this and Qing's other statements on the paintings have been discussed intensely for at least the past three and a half decades. No piece of southern African ethnography can have been less ignored. Also, one *must* go further than the words that Biggs chose to quote:

They were men who had died and now lived in rivers, and were *spoilt at the same time as the elands* and by the dances of which you have seen paintings (Orpen 1874:2, original emphasis).

'[L]ived in rivers' must be seen in conjunction with the rest of the sentence: the men had participated in trance dances. Also, contrary to Biggs, Bantu-speaker beliefs about water creatures *have* been considered by researchers, although they have proved of little value in understanding details of the art. The similarities in belief between Bushmen and Bantu-speakers is, however, interesting in that it may have formed a node of articulation where the two belief systems could have come together in some common understanding.

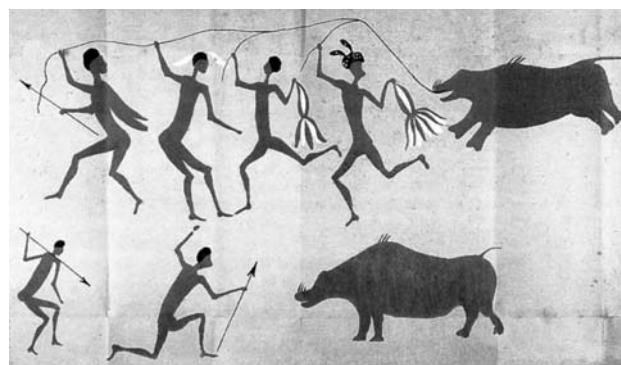


Fig. 1: Stow's copy of the quadrupeds at the main Sehonghong site

When we consider Qing's comments on the Sehonghong paintings we need to keep in mind that the comments were translated into English via Sephuthi (Orpen 1874:3). It is therefore not unreasonable to assume that whatever Qing said about Bushman beliefs on rain animals was translated as *mamlambo*, or possibly *noha ea metsi*, the Sesotho equivalent. Biggs here misses an important point: the comments were not given whilst looking at the paintings in the shelter, but some time later '[w]hen happy and at ease smoking over camp fires' (Orpen 1874:2). The point at issue is Qing's apparent description of a quadruped in the Sehonghong shelter as a snake:

That *animal* which the men are catching is a *snake* (!) They are holding out charms to it, and catching it with a long reim—(see picture). They are all under water, and those strokes are things



Fig. 2: Drawing of the snake at the second Sehonghong site

growing under water. They are people spoilt by the—dance, because their noses bleed (Orpen 1874:10; parentheses in original).

Research has shown the presence of a second painted site a short distance upstream from the main Sehonghong site. It *does* contain a painted snake as well as men with antelope-eared caps, human figures holding out bags to the snake, human figures holding a line attached to the snake's nose, many strokes and figures bleeding from the nose. It matches Qing's description perfectly. The most parsimonious explanation is that Qing and Orpen were thinking of different sites 'at Sehonghong', the village (Figs 1, 2).

Biggs asks why creatures met in the spirit world of altered states of consciousness were modelled on real-world animals. A neuropsychological answer is that whilst imagery in altered states is generated by the brain, it still has to be 'understood' in terms of referents from the individual's experience. In the case of southern Africa's hunter-gatherer art, however, the point is empirical: the 'non-real' depictions we find painted in many rock shelters are modelled on real-world animals. It has been argued that hunter-gatherer communities tend to model their symbols on real-world things, an idea that has been explored in southern African rock art studies by Jeremy Hollmann and others.

I doubt that any serious researchers would contest that painted rock shelters were powerful places in the social, political and especially religious worlds of the people who made them, and quite possibly to subsequent people too. To suggest, on the other hand that they emit 'real but invisible energy' (Biggs 2014:2) is highly questionable.

In opening his critique, Biggs asks where ordinary South Africans can learn about rock art. I close these comments with some suggestions. Information on rock art is readily available. Over the years a number of popular books on southern African rock art have been published. Of those currently readily available (including from the Archaeological Society), readers may consider *San Spirituality: Roots, Expressions and Social Consequences* (Lewis-Williams & Pearce 2004) and *Deciphering Ancient Minds: The Mystery of*

San Bushman Rock Art (Lewis-Williams & Challis 2011). Many popular articles appear regularly. *The Digging Stick* itself publishes numerous articles on rock art.

Public lectures are frequently presented; during 2013, staff in the Rock Art Research Institute (RARI) alone presented 16 public lectures. Colleagues in other institutions no doubt presented others. Most provincial and national museums have rock art displays.

With the specific concern of making rock art research easily available, RARI developed the Origins Centre at the University of the Witwatersrand (www.origins.org.za/). It has extensive permanent exhibitions, frequent temporary exhibitions and a lively series of public lectures. Beyond large urban centres, RARI has distributed literally thousands of rock art information packs to landowners all over the country (these are available, on request, from the Institute). Shorter leaflets in seven official South African languages have also been extensively distributed in rural areas. There have been many other public initiatives over the years. Information on rock art is freely available.

Note

Given the format of *The Digging Stick* it has not been possible to include the extensive references needed to dispel the false assertions made by Biggs (2014). This published version, therefore, contains only a few essential references. A fully referenced version, including an additional 70 references, will be made available on the RARI website (www.wits.ac.za/rockart/).

Acknowledgements

I thank colleagues who commented on drafts of this article.

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NOTICES

NOTICE OF ARCHSOC ANNUAL GENERAL MEETING

Notice is hereby given in terms of section 8(a)(i) and (ii) of the Constitution that the Annual General Meeting of the South African Archaeological Society will be hosted by the Trans-Vaal Branch on Thursday 21 May 2015 at 19:30 at the auditorium, Roedean School, 35 Princess of Wales Terrace, Parktown, Johannesburg. The speaker and topic for the lecture that will follow will be announced later.

Members should submit items for the agenda in writing to the Secretary, PO Box 15700, Vlaeberg, 8018, or archsoc@iziko.org.za, before 21 March 2015. Proposals must state in specific terms the resolution to be put to the meeting and the reasons therefore.

Janette Deacon

Honorary Secretary

20 December 2014

ZAPARD STARTS NEW JOURNAL

The Zimbabwe Association of Professional Archaeologists and Related Disciplines (ZAPARD) has decided to create a new journal to publish academic research to be called the *Southern African Journal of Archaeology*. The journal will be peer reviewed, multi-

disciplinary and have a regional focus. Articles may focus on research findings, debates, field and technical reports and book reviews. The first issue will be edited by Munyaradzi Manyanga in collaboration with an editorial board. The aim is to have the first issue ready in time for the ASAPA conference in Harare in July 2015. The editor can be contacted at manyanga@gmail.com.

ARCHAEOLOGY IN BRIEF

Early stone tool making more sophisticated.

Researchers at the University of Liverpool have found that long and slender stone tools were made by human ancestors at least a million years ago – nearly twice as long ago as generally thought. Prof. John Gowlett found a number of hand axe tools that are very long and narrow at Kilombe in Kenya. He said: 'Psychologists have shown that moderately elongate forms are often favoured, especially those in the ratio 0.61. But there also seems to be a special attraction to far longer and more slender forms. Some of the stone tools from Kilombe and other early sites are almost 2,5 times as long as broad and there is no way this can occur by accident. They must have been carefully crafted. Usually such slender shapes are found far later in the *Homo sapiens* fine-blade tools. The hand-axes were made by the earlier *Homo erectus*.

Philosophical Transactions of the Royal Society B, 28/10/2013

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'Periwinkle on rock'

Oil by Gerbrand van Heerden – 70 x 100 cm

Douw Gerbrand van Heerden was born in Krugersdorp in 1985. He began his career as a fine artist by receiving training from his father, Douw van Heerden, and studied observational painting with Francois Roux. Douw has two lines of work in which his technique differs: the direct observational Alla-Prima technique and the traditional studio painting technique. Both techniques rely on accurate observation and the careful rendering of tone and form, as well as the relationship between colour and light.

The Cape Gallery deals in fine art work by SA artists and stocks a selection of paintings depicting South African rock art.

KHOEKHOE ORIGINS: THE EAST AFRICAN CONNECTION

Andrew B Smith

Two recent articles in *The Digging Stick* (Morris 2014; Lombard 2014) describe interesting scenarios on Khoekhoe origins and antecedents. As someone directly involved in Khoekhoe prehistory for the last 35 years, perhaps I can add to the picture they both portray.

Lombard is convinced that their study of genetic relationships between East and southern Africa is evidenced by the lactose persistence marker gene (-14010G>C) found among East African pastoralists, particularly Ethiopian Afro-Asiatic speakers of Afar, Amhara and Tigray. It is unfortunate that Lombard did not engage with the reference in Morris' paper (Henn et al. 2008), which suggests a Y-chromosome contact between East and southern Africa from the Nilotic pastoralist Datog.

What is important is that all of these studies show that pastoralist contact between East and southern Africa probably predates Bantu-speaking expansion into southern Africa by several centuries, if we use the Matola and Silver Leaves facies as the earliest Kwale Iron Age of 2nd to 3rd centuries AD (Huffman 2007: 123).

The earliest dates for sheep in southern Africa from northern Namibia are 2400 to 2200 BP at Leopard Cave (Pleurdeau 2013). Sheep would seem to have moved rapidly down the Atlantic coast to Spoegrivier Cave by 2100 BP (Webley 2001) and on to the Cape by 2000 BP (Henshilwood 1996).

Linguistic work by Güldemann (2008) suggests that the early herders in southern Africa spoke a Khoe-Kwadi language that was possibly related to Sandawe in East Africa. The Khoekhoe language, however, has substrates within it that indicate first contact with Ju-speakers (northern Kalahari) and later contact with Tuu-speakers from around the Orange/Gariep River. This tells us of herders moving south and interacting with local hunters en route. That this was probably the case is indicated also by Lombard's paper, but further strengthened by our recent paper (Morris et al. 2014) where we have sequenced the ancient mtDNA of a coastal forager predating the arrival of herding at the Cape. This individual showed a haplotype that no longer exists at the Cape (LOd2c1c) and whose closest modern relatives are Ju-speaking hunters of Namibia. By way of contrast, LOd2c1a and LOd2c1b are currently found among Khoe-speakers.

What were the antecedents of the Khoekhoen? Unlike Sadr (2003), I am unhappy with the idea of local

hunters having access to small stock and becoming pastoralists. I have grave doubts about hunters simply taking on responsibility for herds and learning animal husbandry without long periods of apprenticeship with herders (see Smith 2014 for detailed argument), especially if there was no shortage of wild game and there were abundant marine resources.

What may have been the East African connection? The archaeology of contact is weak, but two possible groups may offer some clues. The first is the pastoral Elmenteitan from Ngamuriak in southern Kenya, described in some detail by Robertshaw (1990). These people made ceramics that included spouted wares, a pottery type that is the earliest at Kasteelberg (Smith 2006). Pottery may be the cultural indicator as there is no good evidence for ceramics existing in southern Africa prior to the advent of herding. Elmenteitan may well have been a precursor of the Nilotic groups in East Africa, such as the Datog, which Henn et al. (2008) see as connected further south.

The second possibility is Kansyore, described in detail by Dale & Ashley (2010) and Prendergast (2010). These ceramic-using hunter-fishers, who were in contact with East African pastoralists for at least 500 years before any sheep showed up in the northern Kalahari, could well have been the precursors of the Khoe-speaking 'black' (non-Bantu) hunters of the Botletle and Nata Rivers (Cashdan 1986). These hunter-fishers dominated the northern Kalahari river systems at the expense of other hunters away from the river. Occupation of these river systems could well have been an important fall-back resource once the Kalahari started to dry up before 2000 BP (Shaw et al. 2003), while increasingly difficult conditions for herders forced them to move south, i.e. to the Orange/Gariep river system.

There is no question that at the time of the first Early Iron Age in East Africa (Urewe), some 2 500 years ago, the social complexity of the area increased, possibly putting pressure both on the land and its resources. We can postulate the first movement of pastoral people out of East Africa as a 'bow-wave' (Alexander 1984) that preceded the movement, or was stimulated by the movement of Iron Age agro-pastoralists into the region.

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THE SA ARCHAEOLOGICAL SOCIETY

APPLICATIONS FOR 2015 RESEARCH GRANTS FROM THE KENT BEQUEST

The late Dr Leslie Kent, a long-time member of the SA Archaeological Society in Johannesburg, left a generous bequest to the Society in 1992. The terms of this bequest are that the proceeds must be invested and the income, which will amount to about R9 000 per year at current interest rates, will be distributed from time to time at the discretion of the Society for –

- financing of field work or expeditions to undertake

research according to guidelines laid down by the Society;

- grants to individuals or groups of individuals engaged upon research, the subject of such research to be approved by the Society;
- publishing or supporting the publication of the results of research whether or not the research has been financed by the Kent Bequest; and
- awarding prizes for meritorious work in archaeology, especially by young researchers.

The Society has appointed a Kent Bequest Committee and **invites applications for awards in all categories before 15 May 2015**. The members of the Committee are Dr J Deacon (Secretary), Mr Reinoud Boers, Professor T N Huffman, Dr T Maggs, Professor I Pikirayi and Mrs L Wynne. Please read the following guidelines and instructions carefully before completing the application form.

Guidelines

1. The work must be conducted in South Africa.
2. The subject matter may include archaeological work of any kind that enhances our knowledge of the lifestyle of humankind in southern Africa, such as excavation, rock art recording, site recording, artefact or faunal analysis, identification of plant or animal remains, dating, surveys, physical anthropology, analysis of archaeological collections in museums, experimental archaeology, archival or bibliographic work.
3. Proposals may also include publications for public education and community awareness projects that popularise archaeology.
4. The Kent Bequest will contribute fieldwork or printing expenses only, not costs involved in analysing results or writing or editing reports or publications.
5. Applications for publication must be accompanied by two quotations from printers.
6. Preference will be given to researchers domiciled in southern Africa and researchers who are starting a career in archaeology.
7. Successful applicants will be required to donate one copy of reports or publications to the Society's library, one copy to the *South African Archaeological Bulletin* for review, and, in the case of publications, one copy to each of the Society's five regional branches.

Application forms are available from the Secretary, SA Archaeological Society, PO Box 15700, Vlaeberg, 8018; tel. (021) 712 3629; e-mail archsoc@iziko.org.za. All applications will be refereed by specialists. The applications and referees' reports will be evaluated by members of the Kent Bequest Committee. **Successful applicant/s will be notified by 30 June 2015.**

RATELGAT, THE GRIQUA AND THE 'KNEG' ANDREW ABRAHAM STOCKENSTROM LE FLEUR

Janette Deacon

In the August 2014 issue of The Digging Stick 31(2):20–23, Dr Janette Deacon discussed a rock engraving site found on the Griqua National Conference Trust farm of Ratelgat north of Vanrhynsdorp on the West Coast. Her notes on the interesting history of the Griqua, in particular the role of AAS le Fleur, prepared as part of that article, were unable to be printed with it and are published here for general information on the role played by the Griqua in South African history.

Late 17th century records by early European travellers on the west coast of South Africa describe the presence of the Grigriqua (also spelled Guriqua), an indigenous group of Khoekhoe herders who had been living in the region for well over a thousand years. Although the exact boundaries of their territory were never recorded, it is likely that they moved seasonally within the area approximately between present-day Piketberg northwards to about Vanrhynsdorp (including possibly Ratelgat, the Griqua National Conference Trust farm) where they were neighbours of the Namaqua. As European colonists took over their land, the Grigriqua are reported in colonial records as having moved away from Dutch, and later British, government control to avoid paying taxes. By the late 18th century many were settled in the Northern Cape, together with former slaves and so-called 'Bastaards'. They lived along the Orange River and in Griqualand West in the vicinity of Griquatown and Campbell where some of their descendants still live today. Here, and in the Free State, Griqua communities were established at Christian mission stations in the 19th century.

A group under the leadership of Adam ('Dam') Kok, were farming prosperously at Phillipolis in the Free State in the mid-19th century. After the Free State became a Boer Republic in the 1850s, members of this branch of the Griquas were persuaded by the British colonial government to relocate to Griqualand East in the Eastern Cape where it borders on Kwa-Zulu-Natal. In the 1860s, after an epic and arduous journey over the Drakensberg, during which several people and most of the group's livestock perished,



Griqua National Conference information centre at the entrance to Ratelgat along the N7, north of Vanrhynsdorp. The buildings, in the style of corbelled houses, are not yet completed. (Photo: J Deacon)

they established a town at Kokstad.

It was amongst this hardy group of pioneers in Griqualand East that the *Kneg* (prophet or reformer), Andrew Abraham Stockenstrom le Fleur (1867–1941), was born. Later referred to as AAS le Fleur I, he was the second son of Abraham le Fleur who served as guide and bodyguard to Sir Andries Stockenstrom, Lieutenant-General of the Eastern Province of the Cape Colony. According to Griqua legend, Abraham one day saved Stockenstrom's life when they were attacked by the Xhosa. Stockenstrom thereafter turned to Abraham and said: 'You are a brave man. One day, when you have a son, you must name him after me. Take this five pound note; it must be used to christen the boy. If he turns out to be a coward, you must beat him to death, because a brave man like you does not deserve a coward for a son.'

AAS le Fleur was a partner in Le Fleur Brothers wagon-makers and blacksmiths at Matatiele until early 1894. His life had changed when he received his calling from God on 9 May 1889. His father had by that time moved to Matatiele and was the private secretary to Lady Kok, wife of Adam Kok III, who ruled over the Griquas in Kokstad after the death of her husband. While looking for his father's donkeys for three days in succession and not finding them, he heard a voice calling from a rock:

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Plaque commemorating the declaration by Heritage Western Cape in 2012 of the sacred Ratelgat memorial as a Provincial Heritage Site, acknowledging the historical perseverance of the Griqua people (Photo: J Deacon)

'Andrew, Andrew, Andrew ... I am the Lord God speaking to you. Go and gather the dead bones of Adam Kok and call them as one nation so that they can be my people and I their God. Behold the two asses you are looking for are just on the other side of this hill. Go and tell your father what I command you to do, and tell him that Lady Kok will die at eight o'clock tomorrow morning. These two signs will open the minds of you and your father, so that you will know that it is the Lord who has spoken to you and that the word of Ezekiel be fulfilled.'

Andrew found the asses and a healthy Lady Kok died at eight o'clock sharp the next morning. In 1896 Andrew married Rachel Susanna Kok, the youngest

daughter of Adam (Muis) Kok and Lady Kok, and the Griquas chose Le Fleur as their leader. He assumed the title of Paramount Chief and another prophecy was fulfilled. He then devoted his energies to addressing Griqua grievances and uniting the scattered communities.

He began 'collecting the dead bones of Adam Kok' and travelled the length and breadth of the country, many hundreds of kilometres on foot, reorganising the Griqua into a new nation, forming treaties with the Xhosa and Sotho, and trying to convert other Khoekhoe people to the Griqua cause. His charisma and the many meetings he held soon led to the authorities branding him as an agitator. Already in 1895 he had sought membership of the Griqua Independent Church (GIC) and campaigned for Griqualand East to come under direct British (rather than Cape) rule. He was taken to court in Kokstad and charged with 'attempting to wage war', to which he pleaded guilty under justification. Sentenced to 14 years hard labour, he was sent to prison in Cape Town on 5 May 1898, only two years after his wedding.

That night, three angels appeared to him in his cell and said: 'We are the three angels who appeared to Father Abraham when he was about to offer his son on Moria. Fear not, for we are sent by God to lead the way'. He prophesied that he would walk through the prison doors as a free man on Friday 3 April 1903 at exactly 3 o'clock, nine years before his sentence was to expire. This prophecy was fulfilled to the minute when he was released from the Breakwater prison in 1903.

In 1918 he organised another Griqua trek, from Kokstad to Touws River with 200 Griqua families who travelled by train from Maclear, but the project failed. As the 'moving spirit of the Griqua Independent Church' he returned to Kokstad and sold tickets for land he alleged he had acquired as the rightful successor to Kok. He was arrested and convicted of entering the Transkei territories without a pass. After his release he lived in Cape Town and in 1920 he

began editing the *Griqua and Coloured Peoples' Opinion*. He also established the Griqua Conference that was renamed the Griqua National Conference (GNC) in 1925. In 1927 he led another group of Griqua families, this time from Kokstad to a new settlement at Kranshoek near Plettenberg Bay.

During the 1930s Le Fleur moved between Griqua communities living on settlement schemes located north of Vredendal on the West Coast, and around Knysna and Plettenberg Bay in the southern Cape, consolidating his followers within GNC-GIC structures and his ethno-'racial' religious universe, encouraging them to keep



Griqua National Conference memorial to the prophet, AAS Le Fleur, and the grave of his grandson on Ratelgat. This portion of the land was declared a Provincial Heritage Site by Heritage Western Cape in 2012. (Photo: J Deacon)

in line with the path that God was held to have set for them. Whilst in the southern Cape, Le Fleur often lived in his clay house on the farm Jakkalskraal, or in a small Kranshoek cottage.

Ratelgat

In the 1930s Le Fleur also visited Namaqualand in an attempt to include the Nama people in the Griqua National Conference. Once, when walking north from Klawer, it was very hot and he could find no water. He prayed to God who told him to follow the spoor of the ratel (honey badger). When he did so, this led him to a pool of water and this is where the name Ratelgat derives from. The Kneg regarded his frequent visits to Ratelgat (previously known as Luiperdskop) as an integral part of his calling. During his stays there he would often isolate himself to communicate with God and write letters to the authorities. He also received many of his visions at Ratelgat. In addition he initiated many self-help projects at Ratelgat and Vredendal. His last visit to Ratelgat was in 1941, just before his death.



Some of the *matjeshuise* at Ratelgat that have been used for tourist accommodation. They are made of branches covered with reed mats. (Photo: J Deacon)

The prophecies he made at Ratelgat included:

- The building of the Sishen-Saldanha railway line and the route it would take
- Construction of a new railway station in Cape Town
- The population of Kokstad by African people
- Jakkalskraal would become the granary of the Griqua people
- The Griquas would go to Geneva
- His son, Andrew, would become the Griqua leader
- Drought, political unrest and famine in southern Africa
- The British royal house would flee to South Africa and stay at the Beacon Island Hotel

- Ratelgat would become a Garden of Eden

These 'prophecies' are part of the rich oral legacy of the Griqua people. However, some Griqua dissociate themselves from the publication of these prophecies because they believe it exacerbates tensions and because not all the prophecies can be supported by documentary evidence.

Ratelgat was returned to the Griqua in 1998 as a result of a successful land claim. It now forms part of a trust and cultural tourism project with the following objectives, as set out on the website www.tokencoins.Com/griqua5.html:

- To regroup the Griqua community
- To redevelop and conserve the rich Griqua culture and heritage with Ratelgat as a focal point
- To develop the farm in such a manner that the unique cultural and eco-experience can be shared by the broader community
- To provide cultural and tourism facilities that will enable the Griqua community to become part of the mainstream economy
- To ensure training and create temporary and permanent job opportunities for the Griqua community, especially women and the youth, and
- To ensure a sustainable project through proper planning, training, capacity building and implementation.

Le Fleur imbued Ratelgat with a special spiritual significance. He projected it as a place where authority figures would come to request God to remove plagues and social ills. He saw himself as a maligned mediator of God whose honour would be affirmed when state and church figures come to Ratelgat. There is a memorial to him at Ratelgat, and his grandson is buried there.

Acknowledgements and reference

I am grateful to Jan Joseph and Cecil le Fleur for their hospitality at Ratelgat. Thanks also to Dr Philip Cohen who kindly lent me his copy of the book by William Dower.

These notes were compiled from information given in the following publications:

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'ROCK ART' IN SOUTH SUDAN

Mike Main

For three months between December and March 2013 my wife and I, working as self-funded volunteers, carried out a survey, mostly in the Eastern Equatorial Province of South Sudan, in search of rock art in any form. Disappointingly, no petroglyphs or painted depictions of any kind were found. Eastern Equatorial Province in this newly independent country is characterised by a number of discrete but massive mountainous blocks surrounding the eastern flood plain of the Nile River south and east of South Sudan's capital, Juba.

The survey was suggested by Philip Winter, an independent diplomat working with the government of South Sudan and was carried out with their blessing. The fledgling tourism department provided contacts and letters of authorisation, whilst encouragement and some background information was provided by David Coulson, chairman of the Nairobi-based Trust for African Rock Art (TARA). Our own experience was based on many years of 'Rock Art Safaris' with Alec Campbell and Coulson in Namibia, South Africa, Zimbabwe and Botswana.

Fitted out to be completely independent, we drove from Botswana to South Sudan and during our stay there 'wild camped' in the bush at a different destination every night, but for brief 'breathing spaces' in Juba, Torit and Kapoeta. Apart from a rather 'gentle' armed robbery (all the stolen property – rucksack, spare GPS and vital field-notes taken up to that point – was returned by a very efficient police response a few days later!) we never felt threatened.

At first we had no real idea of how to conduct such a survey. Recalling our experiences with Campbell and Coulson in southern Africa, we rather naively expected to be told where the art was. This was not the case. As we moved into the research area from Juba and saw the towering mountain ranges we realised at once that simply walking around them was not an option. There was only one way and this was to consult the local people, which we did.

In all, we drove over 2 500 km, mostly in Equatorial Province, stopped and held consultations at 77 chief's villages and spoke with an estimated 1 600 individuals. Having no guides or staff with us, we were lucky almost without exception to find someone in the village who spoke English and who was able to interpret for us. To aid in understanding, we had with us several books depicting various kinds of rock art and these were handed round at every consultation.

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Didinga Mountains

In the course of our travels we visited every village in, on or beside the following mountain ranges in Central and Eastern Equatorial Provinces: Nogangala, Lira, Larim, Longiro, Kimatong, Imatong, Dongotona, Chikudum and Didinga. Whilst not exhaustive, the selection covers about 85 per cent of the mountainous areas in those two provinces (and, indeed, about 75 per cent of all mountainous areas in the whole of South Sudan).



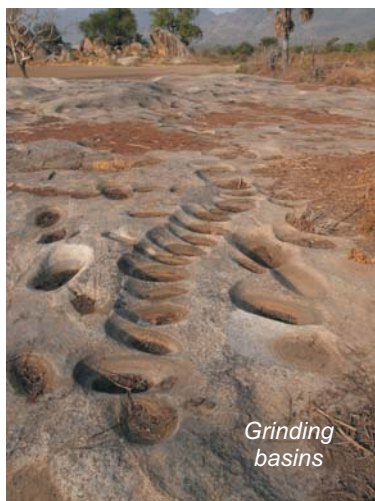
Kimatong Mountains

We found absolutely no examples of rock art and are confident that none exist in the areas we visited. We have no explanation for this absence and can only speculate. All the rock is gneiss and nowhere does it offer the smooth surfaces that we are accustomed to in southern Africa. I doubt this is the explanation, however, and it seems more likely that people who painted did not live in this area; a somewhat surprising but nevertheless interesting finding. But we did note a

number of Iron Age sites, including several where smelting had taken place. We also frequently encountered *Makala* boards, often pecked and worn onto open rock surfaces where people were threshing. All these were duly recorded in the final report.

Landmines in South Sudan are an issue with figures supplied by the United Nations Mine-clearing Section suggesting that between 20 and 25 individuals die each year from encounters with these weapons. We reduced our risks to a minimum by avoiding unused roads and footpaths, and leaving roads only at unfrequented places.

In our travels we noted that every village had at least one, but sometimes three or four boreholes with hand pumps. Usually at least one worked, though maintenance was clearly a problem. Almost every large village also had a primary school and at first we were amazed and impressed by their number. In providing water and schools for this stricken nation, international donors have achieved magnificently. Less impressive was the fact that schools commonly held between 400 and 800 children but were quite without textbooks and were often staffed with just one or perhaps two paid government teachers. Such other



'teacher-aids' on the staff as existed were unpaid 'returnees'. Missionary-educated to a basic level, these youngsters had been refugees in neighbouring Uganda or Kenya. Now, not able to find work, they accepted donations of food in lieu of a salary.

When we showed pictures of rock art we often experienced electrifying but ultimately false starts when a group of men would point excitedly at a coloured illustration of, say, a kudu or a rhino painting. Thinking we were about to make a discovery, we soon found they were recognising the animal, not the fact of the painting. Bar the annual migration of the white nosed kob that still takes place across the flood plains of the Nile, we quickly learned that there are few if any wild animals left. Twenty years of conflict have ensured that they have been eaten or driven away.

Among the cattle owning tribes living outside the

villages and towns, every man carries an AK 47 (fathers strive to acquire them for their new-born sons) and every child carries spears and a bow and arrow. This reflects the on-going existence of cattle raiding and the shortage of food (six dead rats on a string is a good day's haul for a sub-teenager!)

The scenic beauty of South Sudan is striking. In the absence of any significant development as a part of Sudan, its people and their culture remain to a large extent untouched by modernisation (except that cell phones are ubiquitous). Roads are poor to horrific and often impassable in 'the wet'. Village and traditional life and languages seem strongly intact, and we encountered both a pride and a willingness to share in full the homes, the beliefs and the artefacts of people's lives. Despite the inconvenience, a surprising number of villages in the more remote regions were set in or on elevated rocky areas. We attributed this to their being 'refuge' sites where defence was easier. In some cases, such as Tohubak, these settings were quite spectacular and certainly impregnable.



Our experience in Equatorial Province was fascinating and underlines the great potential for tourism in this country – though this will have to wait for roads, better security and appropriate human resources.



HENNO MARTIN'S *THE SHELTERING DESERT*

A handbook for desert archaeologists

Leon Jacobson

I first came across *The Sheltering Desert* in 1963 when the Afrikaans translation, *Vlug in die Namib*, was prescribed for our Afrikaans matric exam. It was a great adventure tale. Two geologists working in Namibia, Henno Martin and Hermann Korn, decide to hide out in that desert to avoid being interned with other German nationals during the Second World War. They had both emigrated from Germany in 1935 after rejecting the Nazi regime and it was therefore ironical for them to be classified as 'enemy aliens'.



Fig. 1: A view from the Namib facing eastwards to the Brandberg during a dry phase when the land is bare
(Photo: L Jacobson)

They camped in various locations in the area around the Kuiseb River canyon and spent two years in isolation except for a couple of rare visits to distant farms for assistance. Eventually, Hermann Korn became seriously ill and they had to turn themselves in to obtain medical treatment for him. Tragically, Hermann was killed in a motor accident years later. Martin's subsequent German account of their adventures, *Wenn es Krieg gibt, gehen wir in die Wüste*, was published in 1956. Both German and English editions have been in print since then.

It is not only a tale of great adventure under conditions of severe hardship but for archaeologists it provides insight into the ecological dynamics of an arid ecosystem and how it is possible to survive in such a system. There are many archaeological sites in the Namib and the casual visitor may think that they reflect life in a more humid past before climate change resulted in the present dry phase. Rather, it is the annual rains that turn the desert into a brief paradise

for man and beast before the land reverts to the arid condition that is so well explained in the book.

Martin describes the first rains falling on the bare, parched ground as 'long colourful fringes' and 'moving curtains', although most of the lighter initial showers evaporated before reaching ground. Heavier showers subsequently fell and these brought the animal herds that had 'smelt the rain' and followed it from the interior to the gravel plains where the fresh grass was rapidly growing. It is worth noting here that Mary Seeley later calculated that it only took 21 mm of rain in the desert to result in a standing crop of grass. Martin describes the large concentrations of game, such as a single herd of three to four thousand springbok together with numbers of zebra and gemsbok. On another occasion he describes three thousand zebra around a vleib. In general, rain in the desert was patchy and thus encouraged the aggregation of large herds.



Fig. 2: A view during the rainy season from about the same spot as in Fig. 1, but facing to the west. Notice the dense grass cover and also the 'curtains of rain' in the background, which are depicted in the rock art at a number of sites in the Brandberg. (Photo: L Jacobson)

The desert thus, for a short period, blossomed into a hunter's paradise. It also provided a rich seasonal resource for indigenous herders and later for European farmers. Eventually the game would disperse, and once the grass had dried out and withered they would trek back to the interior. This pattern was probably one followed by bands of hunter-gatherers. Abundant hunting opportunities and surface water would have meant a less stressful existence and allowed bands to aggregate for social activities. This lesson I learnt aided me in the interpretation of the archaeology of the area.

But there are other interesting observations as well.

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The 'fringes' and 'curtains' of rain Martin describes are echoed in the rock art of the Brandberg. During the dry months, when food was scarce and the few animals Martin and Korn managed to shoot were thin and lean, they developed a longing for fat. Animals became an 'increasing part' of their dreams and, he says, the 'distinction between human beings and animals became blurred'. Perhaps this is another clue to the origin of the abundant rock art in the Brandberg, which was probably a refuge area during the dry months of the year.

Henno Martin's book is rich in detail for both archaeologists and ecologists and will definitely repay a careful reading. The enforced stay of the two men in the desert provided an unexpected laboratory of observations that is not possible today given the developments of the last 75 years. Their experiences open an opportunity for a more nuanced understanding of the prehistory of this and other arid areas.

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The Later Stone Age is not San prehistory (continued from page 4)

archaeological past. Studying living people helps ground archaeological research and the inferences we make about past human societies. But, in doing so, we need to be aware of the broader implications of our claims of long-term cultural continuity based on a narrow range of analogies. Southern African archaeology has accumulated great power for explaining the past, but with great power comes great responsibility. Recent descriptions of San people as representing 'an archaic fantasy' by the presidency in Botswana (www.survivalinternational.org/news/6754) highlight the political implications of equating living people with their Stone Age ancestors.

Acknowledgements

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ARCHAEOLOGY IN AFRICA

'Missing link' fossils may be jumble of species

One of our closest long-lost relatives may never have existed. The fossils of *Australopithecus sediba*, which promised to rewrite the story of human evolution, may actually be the remains of two species jumbled together. At two million years old, they show a mix of features, some similar to the ape-like *australopithecines*, others more like our genus, *Homo*. To its discoverers, this hotchpotch means *A. sediba* was becoming human and that the *Homo* genus first evolved in South Africa. But a new analysis suggests *A. sediba* did not exist. 'I think there are two different hominin genera represented at Malapa,' says Ella Been of Tel Aviv University. 'One is an *Australopithecus* and one an early *Homo*. We cannot yet tell if the *australopithecine* remains are distinct enough to call them a new species'.

Been studies the spinal columns of ancient hominins, so she was curious when a paper was published in *Science* last year focusing on the spine of *A. sediba*. There are fragments from two skeletons at Malapa, a juvenile male and an adult female. Looking at photographs of the vertebrae of the young male, she realised they looked a lot like the vertebrae of the Nariokotome or Turkana Boy, a 1.5 million-year-old skeleton of *H. erectus*. Like ours, its vertebrae are much wider than they are tall. In contrast, the adult female's vertebrae are taller, which is a classic *Australopithecus* feature. She concludes that the

spines belong to two different species. Yoel Rak, also at Tel Aviv University, sees the same in the [lower jawbone]: an australopithecine and an early Homo.

But here the species are switched: a notch in the young male jaw looks like *Australopithecus*, while the same notch in the adult female jaw looks human. The researchers conclude that there are not two but four individuals in the remains from Malapa: an adult and a juvenile of both Homo and *Australopithecus*. Unsurprisingly, *A. sediba*'s discoverer, Lee Berger of Wits University, does not agree. For one thing, he says the positioning of the adult skeleton's bones in the ground makes it likely they came from a single individual. Berger admits that the vertebrae of the young *A. sediba* look like those of *H. erectus*, but he says vertebrae grow taller throughout childhood. If the young *A. sediba* had grown up, his vertebrae may have become more *Australopithecus*-like. Been is not convinced. Fossils of other australopithecine children had tall vertebrae, she says.

www.newscientist, 09/04/2014

Dinosaur lineage traced to Africa

Ten million years after the world's largest mass extinction 252,3 million years ago a lineage of animals thought to have led to dinosaurs took hold in Tanzania and Zambia, new research indicates. The study, published in the latest *Proceedings of the National Academy of Sciences*, reveals how the end-Permian mass extinction, which led to the disappearance of 90 per cent of all life on the planet, permitted a significant reorganisation of terrestrial animals living in the southern part of the Pangea supercontinent. Out of this chaos emerged the silesaurs, which were plant-eaters closely related to dinosaurs' predecessors. In Tanzania, the main silesaur is called *Asilisaurus kongwe*, which was about the size of a medium dog.

Yet another fossil find was the similar-sized *Nyasasaurus parringtoni* with its 1,7 m long tail. *Nyasasaurus* is either the oldest-known dinosaur or the closest known relative of dinosaurs. These creatures were unearthed over the course of seven fossil-hunting expeditions in Tanzania, Zambia and Antarctica. The survivors also included other archosaurs, a group that includes modern crocodiles, modern birds and also dinosaurs. Cynodonts, which later evolved into mammals and are our very distant ancestors, also lived through the onslaught.

While the fossil discoveries seem to suggest that the motherland of dinosaurs is Africa, the researchers point out that landmasses were configured very differently at that time. What is now Africa was part of Gondwanaland. True dinosaurs first showed up about 230 million years ago in what is now Argentina and it is thought that the animals first evolved in Africa, South America, India, Madagascar, Australia and Antarctica.

Discovery News, 28/04/13

The South African Archaeological Society

This is the society for members of the public and professionals who have an interest in archaeology and related fields such as palaeontology, geology and history. Four branches serve the interests of members. They arrange regular lectures and field excursions guided by experts, annual and occasional symposia, and longer southern African and international archaeological tours.

The Society was founded in 1945 to promote archaeology through research, education and publication. It is a non-profit organization – Registration No. 024-893-NPO.

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The Society produces the following publications:

- ☐ **South African Archaeological Bulletin**, a scientific publication of current research in southern Africa – twice a year
- ☐ **The Digging Stick**, the Society's general interest magazine – three issues a year
- ☐ **Goodwin Series**, an occasional publication on a specific field of archaeological interest

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