Reality and Non-reality in San Rock Art

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Figure 1. Rock engraving of two bounded grids and a giraffe. After Scherz 1975. The scale in this and subsequent illustrations is in centimetres.
PREFACE

The Institute for the Study of Man in Africa was originally established to perpetuate and foster the work on Man in Africa initiated by Professor Raymond A. Dart during his thirty-six years' tenure as Professor of Anatomy in the University of the Witwatersrand, Johannesburg.

In 1962 it was resolved by the Council of the Institute that authorities of international eminence representative of relevant disciplines be invited annually to deliver a Raymond Dart Lecture, the scope of which would be limited only by that of the Institute itself, namely the study of Man in Africa, past and present, in health and disease.

The distinguished contributors to the series so far have included Dr S.H. Haughton, F.R.S., Sir Wilfrid le Gros Clark, F.R.S., Dr A.G. Oettle, Dr M.D.W. Jeffreys, Professor P.V. Tobias, Professor Monica Wilson, Professor Desmond T. Cole, Professor J. Hiernaux, Roger Summers, Professor J.D. Fage, Professor R.J. Mason, Professor Arthur G. Steinberg, Professor J.S. Weiner, Professor Theodosius Dobzhansky and Professor Francisco J. Ayala, Professor J.N.P. Davies, Professor E.J. Krige, Professor J. Desmond Clark, Professor W.D. Hammond-Tooke, Professor Phyllis Lewsen, Professor D.F. Roberts, Dr H.B.S. Cooke, Professor Es’kia Mphahlele and Professor Sherwood L. Washburn.
REALITY AND NON-REALITY IN SAN ROCK ART

An important occasion such as this invites a measure of retrospection, and this evening my mind goes back to 1953, my second year as a student at the University of Cape Town. At that time my growing interest in prehistory was greatly stimulated by a series of broadcast talks entitled “Africa’s Place in the Human Story”. This series was organized by Professor Raymond Dart, who told us about the discovery of the first australopithecine, an exciting tale of scientific conservatism and the eventual vindication of his claims. He also brought us up to more recent times by mentioning the San (or Bushmen) and their rock paintings. When he organized those talks Professor Dart had no idea of the ground on which his words were falling, if they would take root or wither. Nor, listening to him and the other speakers, did I know that, thirty-four years later, I should enjoy the signal privilege of being able to pay tribute to Professor Dart for his own remarkable contributions to the “Human Story” and for the way in which he and his work have inspired so many others to take up the challenges of prehistory.

Still less did I realize that, with the passing of the years, my interest would begin to centre not so much on the skulls themselves as on the processes that went on within them. More specifically, what went on in the minds of the people who made what is arguably the world’s greatest rock art — the San artists of southern Africa. Now, acknowledging my debt to Professor Dart, I want to focus on those mental processes and to show how an understanding of them can clarify some of the differences between rock paintings and rock engravings.

When, in the second half of the nineteenth century, George William Stow began to compile his history of the San people, he distinguished between rock paintings that are located mainly in the more mountainous regions and rock engravings that are found principally on the central plateau (Stow 1905; Van Riet Lowe 1956). Today we accept that both art forms were made by San people, but there is a striking difference between them. Although both engravings and paintings depict animals and people, there are, amongst the engravings, large numbers of geometric forms — grids, circles, undulating lines and so forth — but amongst the paintings, especially those of the Drakensberg and Maluti ranges, geometric forms are very rare indeed. Does this difference suggest two radically different arts? Do the geometric forms constitute an artistic system entirely distinct from the depictions of people and animals with which, in the engravings, they are often associated? To approach these questions we must first recall some recent research.

For many years, it was thought that San rock art was principally decorative or narrative; that the so-called ‘artists’ worked simply to please themselves and
their viewers. At first glance there is much to support this view. The painted animals in particular seem to have an aesthetic sensitivity that does not readily point to arcane or symbolic interests. Then there are those compositions that appear to depict scenes from daily life – dances, hunts and so forth. But in the 1970s we came to realize that this view can be sustained only by ignoring what we know about art in small-scale societies: if the San artists were as naive as the traditional view suggests, they were unique, because people in small-scale societies are not like Western artists who, in another popular myth, are said to produce art simply for the sake of art. On the contrary, so-called 'primitive' artists have quite specific purposes in mind, and their pictures have specific and often very complex meanings.

An even more important point is that the traditional view of San rock art as a narrative of daily life can be sustained only by ignoring what we know about the San themselves. It was believed that we had no independent records of the beliefs and interests of the artists. Everything, it was thought, had to be inferred directly from the paintings. In fact, we have a great deal of San ethnography. Much of it comes from the last century and is thus contemporary with the last painters and engravers (for an account of nineteenth-century San ethnography see Lewis-Williams 1980, 1981). Contrary to general belief, some of it includes direct comments on specific paintings (see, for example, Orpen 1874). In addition, we have a rich collection of material from the San presently living in the Kalahari Desert (see, among others, Marshall 1976; Tobias 1978; Lee 1979; Silberbauer 1981). These non-painting people are not descendants of the now-extinct artists. For one thing, they speak different languages. But detailed comparison of their beliefs and rituals with those of the nineteenth-century San show that, despite regional variations, the San over much of southern Africa shared a broad belief system (Lewis-Williams 1980, 1981).

When we started to take all this information seriously we discovered somewhat unexpectedly that, far from being simply narrative or decorative, the rock art was associated with the activities of San medicine people, or shamans, who today number about half the men and a third of the women in any camp. These people entered a state of trance at a medicine dance or in more solitary circumstances and, in that condition, cured the sick, went on out-of-body journeys, made rain, and controlled the movements of antelope herds (for accounts of San shamanism see Lee 1968; Marshall 1969; Katz 1982). Both paintings and engravings depict these activities, the hallucinations of San medicine people and also symbols of the supernatural potency they activated in order to enter the world of trance experience (Lewis-Williams 1981, 1983, 1987).

But recognition of the essentially shamanistic nature of the art is the beginning not the end of research. It merely gives us a general understanding. We now have the task of trying to 'decode' the art and to elucidate its structure and the meanings of its elements. We are at a stage of research that is in some ways comparable with that reached many decades ago with stone artefacts. Once it was conclusively shown that handaxes were man-made, work did not stop. That was just the beginning of a long research programme. So it is with rock art. New and exciting avenues are now opening up that will lead to better understanding of southern African rock art.
In the last few years we have started to explore one of these new avenues, one that helps to clarify why there are more geometric forms among the engravings than among the paintings. This new avenue is neuropsychological research on altered states of consciousness and, more particularly, the trance-like states associated with shamanism. We know that under these circumstances the human mind produces a range of hallucinations. Visual hallucinations are the most popularly known, but there are also auditory, physical, and olfactory hallucinations. In fact, all the senses — not just vision — can hallucinate.

The conditions that induce an altered state of consciousness in which these hallucinations are experienced are extremely varied. They include the use of hallucinogens, sensory deprivation, intense concentration, rhythmic movement, hyperventilation, hunger, pain, and even migraine (Siegel and West 1975; Siegel 1977; Winkelman 1986). San shamans seldom use hallucinogens; they enter trance by hyperventilation, rhythmic movement and music, and intense concentration, but their experiences seem very similar to those induced by LSD, peyote and other hallucinogens (Winkelman 1986).

Once it was realized that much trance experience is controlled by the nervous system and that the nervous system is common to all people, it became necessary to gain a better understanding of the human nervous system’s entrance into and progression through trance states, so that we could assess the art in these terms. I must emphasize that I am now talking about neuropsychological research conducted without any knowledge of or reference to rock art. Because this research makes sense of certain important aspects of San art, it provides an independent line of evidence, over and above the strong ethnographic evidence, that the art was associated with altered states of consciousness — in other words, that it was essentially shamanistic. Neuropsychology enables us to distinguish three broadly conceived stages in the sequence of mental imagery during altered states of consciousness (Lewis-Williams and Dowson 1988).

In the first stage subjects experience entoptic phenomena (Siegel and Jarvik 1975: 111; Siegel 1977: 132). These are luminous visual percepts that take geometric forms such as grids, zigzags, dots, undulating lines, nested catenary curves and spirals. All these shapes are experienced as incandescent, shimmering, moving, rotating, and sometimes enlarging patterns, and they are independent of light from an external source. They are experienced with the eyes open or closed and tend to be located at reading distance. Sometimes a bright light in the centre of the field of vision obscures the forms, but peripheral images can be observed. Another bewildering factor is the rapidity with which the phenomena change. Laboratory subjects new to the experience find it difficult to keep pace with the rapid flow of imagery, but, significantly, training and familiarity with the experience increase their powers of observation and description (Siegel 1977: 134). People who experience migraine will be familiar with at least some entoptic phenomena. The seven shapes illustrated in the first column of Table 1 were extracted from the reports of a large number of subjects in experiments conducted under laboratory conditions: they are the most common types. They are created, in ways not yet fully understood, by the actual physical, neurological structures of the eye, the optic nerve or the cortex.
Table 1. Entoptic phenomena compared with rock engravings from the north-western Cape and the Magaliesberg.

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Table 1. Entoptic phenomena compared with rock engravings from the north-western Cape and the Magaliesberg.
These entoptic phenomena have also been observed among living peoples. For instance, the Tukano people of the Amazon Basin, who regularly take the hallucinogen yajé, say that in the first stage of their trance experience they 'see' what are clearly combinations of or variations on the forms established by laboratory experiments, and they draw them on their houses, drums, and other objects (Reichel-Dolmatoff 1972). Reichel-Dolmatoff (1978) then discovered that they attached specific meanings to these shapes. For instance, nested U-shapes are said to represent the rainbow or the Sun Father's penis. Horizontal undulating lines represent "the thought of the Sun Father". Chains of small dots, also undulating, are the Milky Way, which is the first goal of the ecstatic flight of narcotic trance. Reichel-Dolmatoff's research shows without doubt that people in at least one small-scale society who enter certain altered states of consciousness experience the same entoptic phenomena as those experienced by laboratory subjects in Los Angeles and New York.

The relevance of this initial stage of altered consciousness to our problem will now be clear. But let us recapitulate for a moment. We know from the ethnography that San shamans went into trance. We know, again from ethnography, that at least some art depicts their hallucinations. From neuropsychological research we know that San shamans would have experienced geometric entoptic phenomena because the nervous system is a human universal, and it automatically produces these forms in certain altered states. Now we come to the final question: do the engraved geometric forms look at all like entoptic phenomena? Let us make some comparisons between them and the forms established by laboratory research.

In the second and third columns of Table 1 there are rock engravings from two regions of southern Africa. The parallels are certainly striking: most of the seven types were depicted by the engravers in each region. This is not to say that each kind of entoptic is equally represented among the southern African engravings. Some forms are more common than others, and not all sites have the same range of entoptics. This is because shamanistic societies tend to concentrate on and attach meaning to a limited, standardized range of entoptics and to ignore others, in the same way that they select certain animal species for symbolic purposes and depiction. Knowing a priori that the art derives, at least in part, from altered states, we can therefore easily accept that San rock engravers depicted their entoptic phenomena on the rocks just as the Tukano paint theirs on their houses. Note that we are not simply identifying any squiggle as an entoptic phenomenon. We are showing that a set of seven distinct forms, the very ones we should expect to find in a shamanistic art, are indeed present.

If I am correct in identifying these engravings as entoptic phenomena, I have merely compounded the problem posed by the differences between paintings and engravings because we know that the paintings are also shamanistic and associated with altered states of consciousness. In fact, some of the most striking depictions of hallucinations are painted rather than engraved. Why, then, do these entoptic forms not appear as commonly among the paintings? To answer this question, we must move on to consider the second stage of trance experience.

In stage two subjects try to make sense of their entoptic phenomena by elaborating them into something recognizable (Horowitz 1964: 514; 1975: 177,
Figure 2. Rock painting of honeycombs and bees. Natal Drakensberg. After Pager 1971: Figs 387, 86.
178, 181). In a normal state of consciousness the brain receives a constant stream of sense impressions. A visual image reaching the brain is decoded by being matched against a store of experience. If a 'fit' can be effected, the image is 'recognized'. In altered states the nervous system itself becomes a 'sixth sense' (Heinze 1986) that produces a variety of images including entoptic phenomena. The brain attempts to recognize, or decode, these forms even as it does impressions supplied by the nervous system in a normal state of consciousness. Horowitz (1975: 177) links this process of making sense to the disposition of the subject: “Thus the same ambiguous round shape on initial perceptual representation can be 'illusioned' into an orange (if the subject is hungry), a breast (if he is in a state of heightened sexual drive), a cup of water (if he is thirsty) or an anarchist's bomb (if he is hostile or fearful).”

This description of what happens in the second stage of altered states provides the first part of an answer to our problem. San shaman-artists who went far enough along the continuum of trance experience elaborated the basic entoptic forms into objects on which their general beliefs about trance experience placed some particular value. In other words, they construed the basic geometric forms as something they hoped or expected to see in the spirit world. Let us examine two examples of this process of construal in the art; the first is engraved, the second painted.

A common entoptic form in the art is a grid that may be rectangular or rather like a honeycomb. Figure 1 shows two grids engraved on a single rock; each is enclosed by a perimeter line. Such lines are probably also entoptic, for subjects report boundaries of lines so thin that it may be impossible to say whether they are black or white (Klüver 1942: 177). Between the grids is a giraffe, its body markings echoing the grids. We can see at once that the entoptic grid reminded the artist of the pattern on a giraffe, and he construed it as, or elaborated it into, a giraffe. In fact, the juxtapositioning of the grids with the giraffe seems to point to a stage-two vision. Most depictions of giraffes are, of course, not conveniently accompanied by grids as is this example, but it seems highly probable that, in San beliefs about trance experience, the entoptic grid was closely associated with the giraffe and that some shamans in stage two elaborated their vision of the grid into that animal.

But why would they associate the grid with a giraffe rather than, say, a tortoise? The answer to this question is to be found in San beliefs about supernatural power. When a shaman enters trance he or she activates an invisible potency that the !Kung call n'/um and the now-extinct southern /Xam San called !gi:. Marshall (1969) has likened it to electricity: harnessed it can be beneficial, but out of control it is dangerous. This potency is named after a range of 'strong' things, such as big game animals. The eland has more n'/um than any other animal, but also prominent among the powerful animals is the giraffe. In the Kalahari today the San still dance giraffe potency (Biesele 1975).

Something of what the 'giraffe experience' is like comes through in an account of trance an old, experienced !Kung shaman gave to Biesele (1979: 55). He started his account by saying,

Just yesterday, friend, the giraffe came and took me again. Kauha [god] came and took me and said, “Why is it that people are singing, yet you're
Figure 3. Rock painting of rain-animals and entoptic phenomena.
Eastern Orange Free State.
Figure 4. a: Drawing by a !Kung shaman. After Katz 1982: 237.
b: Rock painting of a human figure with zigzag legs. Natal Drakensberg. After a photograph by A. Mazel.
c: Rock painting of a human figure with zigzag legs. After Stow and Bleek 1930: Pl. 58.
not dancing?" When he spoke, he took me with him and we left this place. We travelled until we came to a wide body of water. It was a river. He took me to the river. The two halves of the river lay to either side of us, one to the left and one to the right.

There is a great deal of interest in this account of San non-reality, but we can note only three points. Notice first how the giraffe "took [him] again". The power of the giraffe overwhelmed him, and he was in its thrall. Then notice that he does not draw a careful distinction between god (Kauha) and giraffe. Both came and "took" him. Finally, he is taken to a river into which he plunges. Being under water is a San metaphor for trance experience (Lewis-Williams 1980: 472), and that plunge was his entry into non-reality. An account such as this gives us some insight into how San viewers may have responded to an engraved grid. It spoke to them of overwhelming giraffe power and the spirit world.

Now let us turn to a painted example of stage-two construal. Another common entoptic form comprises nested U-shapes or catenary curves. This was construed by the San painters in various ways (Lewis-Williams, n.d.), but we shall examine just one. In the wild, honeycombs naturally assume the form of nested catenary curves. It was this fact that enabled Pager (1971: 151, 347-352) to identify certain paintings as beehives. Some also have bees individually and minutely drawn, each with a pair of white wings (Figure 2). Today we can go further and suggest that the U-shapes have an entoptic origin. People in trance saw the U-shapes and elaborated them into honeycombs (Lewis-Williams, n.d.). It is also possible that construal of entoptic catenary curves as hives may have been partially suggested to the San by a humming sound often heard by people in altered states of consciousness (Harner 1973: 119; Halifax 1979: 49; Bootzin 1980: 343). The Amahuaca trancers of the Amazon Basin interpret this sound as cicadas, crickets and frog calls (Halifax 1979: 144), while other people hear it as wind, trickling water or rain (Munn 1973: 119; Christie-Murray 1978; Halifax 1979: 32, 74, 97). Auditory hallucinations are therefore open to different interpretations, though cross-culturally their structure remains constant because, like entoptic phenomena, they are produced by the human nervous system. The San, it seems, construed their aural hallucinations as the buzzing of bees and so linked them to their visual hallucinations of U-shaped entoptic phenomena.

The reason some San construed nested U-shaped entoptics as honeycombs comes from Kalahari San ethnography. The !Kung consider bees to have a great deal of potency, and they like to dance when bees are swarming because they believe they can harness the bees' power (Wilmsen, pers. comm.) as they harness the power of other 'strong' things. A painting in the north-eastern Cape shows a line of figures, some of whom bleed from the nose and carry flywhisks, dancing beneath a swarm of bees and a hive. It is a convincing depiction of the association between bees and the trance dance (Lewis-Williams 1983: Fig. 16). At least some artists thus construed their combined visual and aural hallucinations as visions of a very powerful shamanistic symbol.

We are now beginning to see how entoptic phenomena can be 'disguised', as it were, by the people who see and depict them. Indeed, if the construal is greatly elaborated the entoptic raw material may be completely swamped. The
Figure 5. Rock painting of a rain-animal and shamanistic figures. Eastern Orange Free State. Copied by T.A. Dowson with additions from G.W. Stow's copy (Stow and Bleek 1930: Pl. 58). The containing line represents the slab of rock preserved in the National Museum, Bloemfontein.
two examples I have described preserve the basic entoptic forms (grids and U-shapes), but that is not always the case. More radical changes to entoptic forms are experienced in the third and last stage of altered consciousness.

As subjects move from the second stage into the third, marked changes in imagery occur (Siegel 1977: 132). Many laboratory subjects report experiencing a vortex or rotating tunnel that seems to surround them, and there is a progressive exclusion of perceptual information (Horowitz 1975: 178). The sides of the vortex are marked by a lattice of squares like television screens. The images on these ‘screens’ are the first spontaneously produced hallucinations; they eventually overlie the vortex as entoptics give way to images of people, animals, monsters, houses and so forth (Siegel and Jarvik 1975: 127, 143; Siegel 1977: 136). These iconic images appear to derive from memory and are often associated with powerful emotional experiences (Siegel and Jarvik 1975: 111). This shift to iconic imagery is also accompanied by an increase in vividness. Subjects stop using similes to describe their experiences and assert that the images are indeed what they appear to be. They “lose insight into the differences between literal and analogous meanings” (Siegel and Jarvik 1975: 128). Nevertheless, even in this essentially iconic stage, entoptics may persist: iconic imagery is “often projected against a background of geometric forms” (Siegel 1977: 134). This is the stage of true hallucination, and the subject, in deep trance, inhabits a bizarre world of non-reality.

My first example of a painting from this stage preserves a distinction between entoptic and representational elements. To understand it we must recall that in 1873 J. M. Orpen and W. H. I. Bleek were told that shamans of the rain entered trance at a medicine dance and that, in trance, they captured a so-called rain-animal, the !kwa-ka xoro (Orpen 1874; Bleek 1933). When they killed this animal its blood and milk became rain. All this was, of course, an hallucination experienced in trance and, even though the hallucinatory element has not always been recognized, paintings of it have been known since the last century (for a fuller account of San rain-making see Lewis-Williams 1981: 103-116). In fact the first accounts of this kind of rain-making were given by San after being shown Orpen’s copy of a painting of rain-animals. Another such painting (Figure 3) shows entoptic phenomena very clearly associated with hallucinatory rain-animals. It has been suggested that the zigzags here represent a pool of water, but closer inspection of the painting seriously questions an entirely literal reading. To the right a zigzag crosses the rain-animal’s neck, merges with its eye, and then proceeds farther to the right. At the left, the rain-animal’s tail turns into a zigzag, and another zigzag emerges from or enters into its body. Rather than the zigzags being a simple depiction of water, it seems much more probable that what we have here are two hallucinatory rain-animals seen through an entoptic haze. Exactly what the San understood by the surrounding entoptics is, however, not yet clear.

My next stage-three examples bring us to what seems to be the principal reason for the apparent absence of entoptics from southern African rock paintings. The reason is that in this stage entoptic forms become intimately combined with hallucinations of animals and people (Klüver 1942: 177; Siegel 1977: 134). This was vividly described by a laboratory subject experiencing the grid entoptic. He reported that his arms, hands and fingers turned into
Figure 6. A: Navicular entoptic phenomenon.
B: Shamanistic figure from north-eastern Cape.
fretwork — as he called it. Eventually he exclaimed, “The fretwork is I” (Beringer cited by Klüver 1942: 182).

This striking report recalls a drawing made by one of Katz’s (1982: 237) !Kung San informants who was an experienced trancer. Asked to draw his conception of himself, he drew a zigzag that, he said, was his spine, and then seven separate zigzags that, he said, were the rest of his body (Figure 4a). From this we know that San shamans combine entoptic forms with hallucinations of the human body. When we turn to rock paintings of men with zigzag necks and legs we are no longer puzzled (Figures 4b, c). They are painted stage-three hallucinations of people integrated with zigzag entoptics — just as is reported by laboratory subjects.

The next example (Figure 5) comes from the eastern Orange Free State, where George William Stow copied it in the 1870s. Surely one of the most remarkable of all San rock paintings, it takes us directly into the bizarre, arcane world of trance experience. The animal here was identified by one of Bleek’s nineteenth-century informants as a “black rain” (Stow and Bleek 1930: Pl. 58). The southern San spoke of female and male rain. The female rain was the soft, soaking rain that left wide splashes in the sand. The male rain was the fierce, black thunderstorm that stirred up the dust and left sharp footprints in the sand. Controlling a male rain, or a rain-bull, was difficult and it could break the thong thrown over its head and escape. The shamans held out buchu, sweet smelling herbs, to it, for it loved the scent of buchu and would go quietly along. Even so, capturing such a rain-animal demanded all the power and all the skill of the shamans of the rain.

This rain-bull has a zigzag painted on it (Stow’s copy shows two). As with the others we saw surrounded by zigzags (Figure 3), this zigzag emerges from or enters into its eye. The animal also has white dots painted on it. Zigzags are also associated with most of the shaman figures surrounding the rain-bull. In some cases the zigzags leave the shamans’ bodies and are therefore clearly not body paint. One of the shamans is comparable to a figure from the north-eastern Cape (Figure 6). In both instances the zigzag curves away from the figure. As Figure 6 shows, these curving zigzags are very like a common entoptic form. Many of the figures have appendages on their outstretched arms that probably represent feathers. Flight, as in many cultures, was another metaphor for trance experience. In some of the southern San myths, the Mantis, who was himself a shaman, “gets feathers” when he enters trance and flies away (Lewis-Williams 1983: 45-48).

Another painting (Figure 7) shows a different integration of entoptic phenomena with a rain-animal. Here a rather loose grid has been painted over the body of the animal. Closely associated with the grid are the ubiquitous white dots. Of particular interest is the white ring that seems to form part of a bridle. This may not be too far-fetched an interpretation because the San of the last century were expert riders, and there are paintings of horses with bridles and reins. In addition, there is evidence that suggests a connection between bridles and reins and rain-animals. Some accounts of rain-making tell of a thong being thrown over a rain-animal’s head in order to control it. This idea seems to have been combined with the concept of reins. One of Bleek’s (1933: 305) informants said that shamans of the rain “rode the rain, because the thongs with which they held it were like the horses’ reins, they bound the rain. Thus they rode the
Figure 7. Rock painting of a rain-animal. North-eastern Cape.
rain, because they owned it.” At the head of the “bound” rain-animal a man holds out an object that may be a flywhisk or buchu. Both of these would be indications of control. This painting is thus a complex combination of trance and ‘real’ elements. An entoptic grid and dots have been integrated with an hallucinatory rain-animal in such a way as to suggest control and a bridle. In other words, this is exactly what we would expect to find in a stage-three hallucination.

My last painted example (Figure 8) is the most complex of all. Notice first that three men in this panel have their arms in a rather awkward backward position. This posture is widely painted and it was a puzzle for a long time. Clearly it meant something — but what? The answer came during a discussion with a !Kung shaman. He told me various things about the trance dance, and then, unprompted, he stood up and adopted this posture. He explained that some San shamans hold their arms like this when they ask god to put more potency into their spines. The posture is, in fact, a clear indication that we are looking at depictions of shamans.

Notice too the eared serpent’s tusks. They are repeated on the eland, and one of the arms-back men has one as well. At present we do not know exactly what these tusks mean, but they are commonly painted on people in trance (Vinnicombe 1976: Figs 232, 233, 237, 247, 249; Lewis-Williams 1983: 58). This leads to the conclusion that the serpent and the eland are transformed shamans. Moreover, eared snakes are often painted coming out of the rock face and with trance features such as nasal blood (Lewis-Williams 1981: Fig. 23). Entering and leaving the rock face may be particularly significant because shamans go into the ground on their out-of-body journeys. They travel underground and then come up again to see where they are. Old K”xau told Biesele (1979: 56) that his teacher had said that when he learned how to trance he would enter the earth: “That [he] would travel far through the earth and emerge at another place.” This is, of course, just what snakes do. Snakes are in this way analogous to shamans.

Like snakes, eland are also sometimes painted with unusual features. In addition to the grid, this one has tusks and red lines on its face, as do some of the shamans accompanying it. It too may thus be a shaman who in his own or another’s hallucination is transformed into the animal whose power he is appropriating. Transformation into an animal is a common trance hallucination. One of James’s subjects described such a transformation: “I thought of a fox, and instantly I was transformed into that animal. I could distinctly feel myself a fox, could see my long ears and bushy tail, and by a sort of introversion felt that my complete anatomy was that of a fox” (Siegel and Jarvik 1975: 105). It is by no means impossible that we have here shamans who thought of an eland or a snake because those two creatures are an integral part of San beliefs about trance, and were, like James’s subject, transformed into those animals.

Having established the visionary nature of the painting, we can now approach the entoptic elements: they are a grid, dots, a zigzag, and a U-shape. The grid has been integrated with the eland (for a comparable engraving see Figure 9); the dots cover most of the painting; and the zigzag is boldly depicted. The U-shape is particularly interesting because it has been construed.
Figure 8. Rock painting of complex hallucinatory elements. North-eastern Cape.
as a snake coming out of a step in the rock face. The flickering periphery of the entoptic raw material has been retained in a series of curving red lines.

Paintings such as this hold a wealth of interest and are testimony to the complexity and subtlety of San religious thought and experience. I say “experience” because, as with the other examples we have examined, the hallucinatory elements clearly suggest that this is a depiction of a shaman’s vision.

We are now in a position to address our main problem: why are there far more geometric forms amongst southern African rock engravings than among paintings? It seems that San engravers paid more but not exclusive attention to the first stage of altered consciousness and so emphasized geometric entoptic phenomena. Even some of the most striking engravings of animals have entoptic forms superimposed on them (e.g., Figure 10). San painters, on the other hand, concentrated on the second and third stages. The paintings therefore have far fewer geometric forms and, when they do occur, they have often been construed as objects associated with trance beliefs or intimately integrated with hallucinatory animals and people. The entoptics are there. It is just that they have have been obscured by deeper trance experience.

This distinction between the stages of trance experienced by San painters and engravers must be seen in conjunction with differences in content and context. In addition to greater emphasis on geometric entoptic forms there is, at many engraving sites, a wider range of animal species than at painted sites and, at almost every engraved site, a much smaller percentage of human figures. Moreover, the large groups of human and animal depictions often engaged in some activity are largely (but not entirely) absent from the engravings. The differences in context are no less significant. For instance, the engravings are cut into rocks scattered on open hilltops and slopes or into rocks along river beds, while the paintings are applied in greater concentrations to the walls of rock shelters. While paint may have washed off open rock, the absence of engravings in rock shelters must be culturally significant.

Some of these distinctions may result from the exigencies of the different techniques used to make engravings and paintings, but others more probably derive from the roles played by the two art forms in their respective social groups. One possible explanation for some of the distinctions is that the engravings and the paintings originated in different domains of shamanistic practice. We have already noted curing, rain-making, out-of-body journeys, and antelope control as components of San shamanism. There are also some indications that the vision quest, so important in many other shamanistic societies, may have played a bigger role than the San ethnography at present seems to suggest. Some engraving sites may have been principally but not entirely vision-quest sites where the shamans’ initial acquisition of power was signalled by their experiencing the entoptic phenomena of the first stage of altered consciousness. The engraved entoptics and animals may thus have been symbols or representations of the potency shamans seek. Contemplation of them may have induced visions of that kind, as neuropsychological research suggests, and their depiction and repeated re-depiction may have been demonstrations of successful quests. In many shamanistic societies vision quests are conducted in solitary circumstances, but the San maintain such openness about religious experiences it seems probable that vision quests could have
Figure 9. Rock engraving of a partial grid integrated with an antelope.
been part of trance dances. Certainly, in the Kalahari today people seeking power do so principally in the context of a trance dance.

Because the paintings, in contrast to the engravings, derive more from stages two and three of altered consciousness, they are more varied and discursive. They depict the complex hallucinations experienced after the initial acquisition of power and derive from the whole range of trance experience as practised by the various kinds of shamans. In any event, the differences in technique, content and context of southern African rock art will have to be examined in relation to the whole range of San shamanistic experience and belief; this is the subject of continuing research.

In examining San rock paintings and engravings we have been reconnoitring a mysterious no man's land between reality and non-reality — strange and bizarre for us, but not so much for the shaman-artists who regularly explored the most distant purlieus of the mind and then fixed their visions and understandings of the spirit world on the rocks of southern Africa. When we look at these strikingly beautiful depictions, it is sometimes hard to accept that they were conceived not in serene artistic contemplation but in the turmoil, terror and power of an overwhelming experience. Later, having returned from that experience to the world of reality, the San shaman-artists recollected and depicted their excursions into the spirit world. As Wordsworth, in his Preface to The Lyrical Ballads, wrote of poetry, San rock art is powerful “emotion re-collected in tranquility”.

This hidden connection between the overwhelming generating experience and the deceptively tranquil artistic product reminds me of Tennyson’s poem “Flower in the Crannied Wall”:

Flower in the crannied wall,
I pluck you out of the crannies,
I hold you here, root and all, in my hand,
Little flower — but if I could understand
What you are, root and all, and all in all,
I should know what God and man is.

If we are to comprehend and truly appreciate the full flowering of San rock art, we shall have to pluck it out root and all, for the soft, delicate flower cannot be explained without reference to the gritty root. The roots of San rock art lie behind the crannied walls of the rock shelters in another, transcendent world. These roots should not be separated from the more easily appreciated depictions.

But the roots of San religious experience and art go even deeper. Research has shown that dogs, cats, apes and other creatures also have the capacity to hallucinate (Siegel and Jarvik 1975). Indeed, this capacity is probably a feature of not just the human but the mammalian nervous system. If other branches of mammalian evolution hallucinate, it is highly probable that three to four million years ago the australopithecines were also able to hallucinate. If we recall that the ingestion of hallucinogens is not the only way to cause hallucinations — sensory deprivation, pain, and physical disorders are also common triggering factors — it seems certain that at least some australopithecines hallucinated. When in 1925 Professor Raymond Dart held
the Taung baby in his hand, he was cradling, in a double sense, a creature of two worlds. First, the skull itself was half human and half ape. Secondly, the brain, reflected by the miraculously preserved cast, also inhabited two worlds — the world of reality and the world of non-reality. In other words, it had the capacity to hallucinate. In a sense, that brain contained the roots of an experience that, millennia later, flowered in San rock art.

Figure 10. Rock engraving of an eland with superimposed entoptic ladder-like form and other lines. Magaliesberg, Transvaal.
REFERENCES


Wilmsen, E.N. Personal communication.

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