RAR DEBATE

Pseudoscience in rock art studies

By PATRICIA A. HELVENSTON

This is a brief commentary on 'Creativity, mental disorder and Upper Palaeolithic cave art' by Margaret Bullen, published in *RAR* 28(1). I applaud Bullen's even-handed consideration of several issues with respect to a hypothesis suggested by David Whitley (2009: 220, 243, 244, 260), namely, that the artists producing cave art were shamans suffering from the mood disorder, bipolar illness, which he refers to as the shaman's illness. While it is still a contested topic as to whether manic depressive illness confers special creativity on a large percentage of its sufferers, Bullen cites evidence suggesting that first degree relatives of persons with the disorder are more creative than those afflicted with the disorder, which argues against individuals with the frank disorder showing a higher degree of creativity as a group than control subjects (Richards 1994: 45). I would like to propose a more critical response to Whitley by considering three factors that Bullen did not emphasise.

First, at the conclusion of Bullen's paper I had the impression that she was indicating the Palaeolithic cave artists could have been carrying genes for bipolar illness. I disagree with this conclusion because it is based upon a mistaken understanding of learned helplessness, which is not the same thing as depression in human subjects. In fact, no ape has ever shown any illness even remotely resembling bipolar illness — either the depressive or manic pattern or both (Mason and Rushen 2006). The closest apes come to manifesting anything like this serious illness is a grief response reported by Goodall in young chimpanzees separated from their mothers (1986). Some apes in captivity in small cages without conspecifics present have shown stereotypical behaviour such as repetitively biting themselves, or grooming, or rubbing against their cages that looks like obsessive compulsive disorder (Mason and Rushen ibid.) but, I repeat, no ape has ever shown any illness like bipolar illness. Thus, the great apes do not carry the genes for bipolar illness — its occurrence must have manifested in the human genome after the ape-human split about 7 million years ago (Bednarik and Helvenston in press; Helvenston and Bednarik in press).

Second, the earliest evidence we have for bipolar illness is the Greek Hippocratic corpus circa 500–300 BCE (Helvenston 1999) where the descriptions are remarkably similar to those contained in the DSM-VI (*Diagnostic and statistical manual of mental disorders* 1994). Thus, the illness is documented from at least 2300 years ago. There is an absence of other evidence from around the world on this subject, so we do not know if the disorder was more widely disseminated when it was first described. We have clear evidence that it was known from Roman times and in the Middle Ages (Helvenston ibid.). On the other hand, schizophrenia, another severe brain illness (often referred to as a mental illness), was not described until the 17th century (Hare 1988: 521–531), so it appears to be relatively recent in human history, as are a number of other brain diseases (Helvenston and Bednarik in press; and Bednarik and Helvenston in press). From this line of evidence it seems extremely unlikely that cave artists of 30–40 thousand years ago had manic depressive illness. Moreover, I have been unable to find any study that has listed diagnostic criteria differentiating art produced by manic-depressives from art produced by any other group of people. The entire issue of whether shamanism dates back to Palaeolithic times has been challenged by many people, including the editor of this journal (Bednarik 1990); and most recently in his new book *Prehistoric rock art: polemics and progress*, Bahn (2010) devotes two chapters to refuting the shamanistic model in great detail.

Third, Bullen does not emphasise the fact that bipolar illness is a very serious disorder and even today it is not well controlled in a large group of people suffering from it. During the manic or depressive phases, the individual is almost completely disabled, and unlikely to be creating anything, let alone distinguished art. Sufferers are frequently unable to care for themselves during these phases and would only be productive during remission. During remission they often have to cope with the consequences of what they have done during the manic or depressive phases, such as violent outbursts, suicidal attempts, spending lots of money, indiscriminate and promiscuous sexual behaviour etc. If there had been manic-depressives during the Palaeolithic, they would have been completely disabled prior to modern medication, so it is highly unlikely that they produced any great art and there is no more reason to suppose that a manic-depressive created the Palaeolithic cave paintings than that a normal person did — in fact there is less reason.

Figure 1. *Scanned from* INORA *photograph, by permission of J. Amador Bech and Dito Jacob, photographer.*

Bullen cites Whitley referring to bipolar illness as being the shaman's disease and this may be a modern misconception, but a generation ago, as Bullen says, schizophrenia was considered the disease of shamans, so these pseudoscientific suggestions have a very faddish element about them that bears little resemblance to actual science. Also, in today's 'New Age culture' many people with a variety of behavioural disorders or illnesses self-identify as shamans, whether anyone else accepts that designation or not.

In fact, proponents of the shamanistic model have previously suggested that carbon dioxide produced hallucinations, manganese produced hallucinations, even caves in of themselves produced hallucinations, and by simply entering a cave one could expect to experience hallucinations. Even a flock of hallucinating sheep was believed to have inspired rock art in north Africa but that was refuted along with the other suggestions (Helvenston and Bahn 2006). These suggestions and refutations are widely scattered throughout the literature, so the interested reader is referred to Helvenston and Bahn (2005) and Bahn (2010) for a comprehensive consideration of these topics. It is an enlightening trip through blatant examples of pseudoscience that were widely believed by many gullible readers.

I conclude that Whitley's suggestion that hallucinating shamans suffering from bipolar illness created the cave art is as far-fetched from a scientific standpoint as any of the other wild speculations cited above. In fact, recently another example of pseudoscience and rock art has been published (Amador Bech 2011: 9–18) in *International Newsletter on Rock Art* wherein the author claims he can read the face of a petroglyph (see Fig. 1) and discern that this is a portrait of someone in trance. To my mind, if anything, this petroglyph's facial expression suggests anger or rage, certainly not ecstasy. Although Amador Bech cites *Emotions revealed* by Ekman, which is an excellent treatment of reading emotions based upon facial expressions, the only plate I could see that resembles this petroglyph is photo 8, which supposedly reflects misery, unhappiness, perplexity. I challenge other readers to examine the photos in Ekman's book to learn which photo they see the petroglyph resembling. It is really quite a stretch of the imagination that anyone could read ecstasy in trance from this poorly drawn simile of a face. Indeed, reading the face in Figure 1 is like a Rorschach test and I suspect the author is projecting his own imagination on the scanty figure's facial expression. This seems to me like another example of pseudoscience posing as science.

Acknowledgments

Special thanks to Paul Bahn for calling my attention to Amador Bech's paper in *INORA*. Special thanks to J. Amador Bech, art anthropologist/archaeologist in charge of the project and photographer Dito Jacob for kindly allowing me to reprint the photograph shown in this *RAR* Comment.

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RAR 29-1036

Response to Patricia Helvenston

By MARGARET BULLEN

I would like to thank Patricia Helvenston for her comments and the editor for allowing me the opportunity to respond. However, in following the editor's 'brief to be brief' I cannot do full justice to Helvenston's comments.

Starting with the third factor of the unlikelihood of an individual with untreated bipolar 1, also known as manic depression, being able to create the images under consideration I would totally agree with Helvenston. The quotation I cited from Kaye Jamieson, probably the best known high-achieving BD 1 sufferer, spelt out the power of the unrelenting cycles from elation to despair. Jamieson acknowledges that medication which pulls her back from the highest and the lowest extremes has allowed her to be effective but even with medication she can still crash out of control. Without medication, determined individuals can help themselves to remain stable by avoiding stressors such as fatigue, over stimulation and stimulants, a recipe not conducive to creative endeavours.

In relation to the other factors raised by Helvenston the genetics of bipolar disorder has received a great deal of attention in the past few years. A recent review by Thomas G. Schulze makes several important points. He reaffirms that BD is a highly heritable disorder with lifetime prevalence, for a first degree relative of a sufferer, of 10–20% compared to 1–2% in the general population (Schulze 2010: 2). He discusses the advances made through the use of genome-wide association studies or GWAS (ibid.: 3), including the following comments:

> BD is a polygenic disorder. This means that the contribution of each locus to risk of disease is modest, that cases carry significantly more risk alleles than controls, and that disease risk increases substantially with the total burden of risk alleles carried.
>
> Allelic heterogeneity may be an important factor in complex disorders such as BD. Allelic heterogeneity means that a phenotype can be caused by different alleles within a gene …
>
> GWAS in BD has brought to light the fact that the identified variants only account for a small fraction of genetic variability. This phenomenon has become known as the 'case of the missing heritability'.

In his concluding remarks Schulze states:

> Furthermore we now know that we will not find the gene or the genes for BD; in fact we may have to settle for a scenario where we can only sufficiently characterise the joint effect of several hundreds or even thousands of genes on disease presentation (ibid: 8).

I certainly do not subscribe to Whitley's notion that the great art of the Palaeolithic was done by individuals 'trance-formed' by manic depression or that such art was the exclusive province of the shamans. However, I do believe that the creators of the art were very special people with enhanced ability to observe their external world and to transfer their internal translation of that external world onto the cave walls. They did take risks, they certainly thought big and I think it is likely they had some of the genetic variations now observed in individuals with bipolar disorder.

There are many examples in medicine where an inherited disease is not equally serious in all those afflicted. Bipolar disorder is not one condition but a spectrum and if there are hundreds or thousands of genes potentially involved then there is room, not only for the enormous variation in presentation and co-morbidities observed in practice but also a variation across time. The genetic variations that result in changes in protein coding, not just for neurotransmitter production and maintenance but also such vital cellular function as calcium ion transportation, did not all happen simultaneously at some particular point in the evolution of *Homo sapiens*. Epigenetic factors must also be taken into account when understanding how and when genes are switched on or off and heritable diseases are manifested.

There is not space here to properly discuss the notion that some of the genetic variations being observed in sufferers of bipolar disorders were already present in primates and early hominids. Helvenston is correct that primates have not been observed to spontaneously display signs of bipolar disorders but then the diagnosis can be difficult to establish in humans because the presentation is not always typical. In my paper I cited the work of Sapolsky who observed major difference in coping styles and personality among the baboons he studied in Kenya noting that these differences affected how the animals responded to stress. He quoted Seligman as arguing that learned helplessness in animals shared physiological features with depressed humans. Low self esteem and hopelessness are DSM diagnostic features of cyclothymic disorder. We cannot ask a baboon if it has low self esteem or if it feels hopeless but it can portray those perceptions in its observed helplessness. Genetic studies in primates may help to elucidate which genetic variants associated with affective disorders could have been present in the early hominid genome.

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RAR 29-1037

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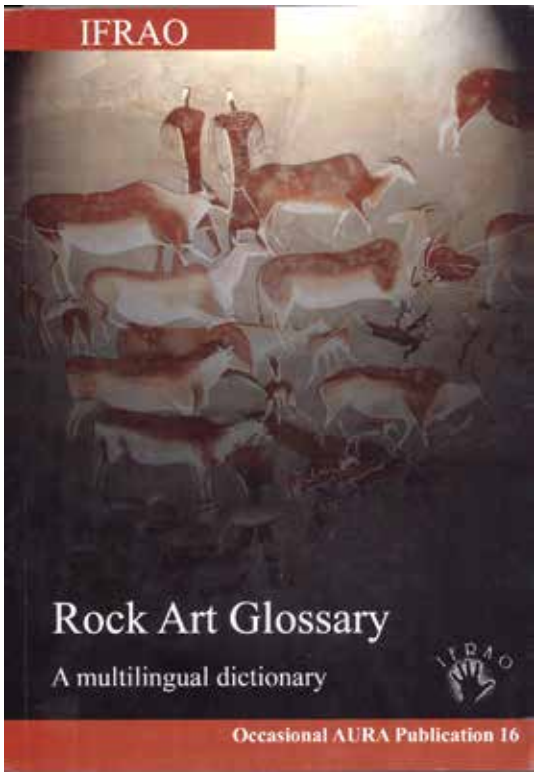
Erratum: In the paper 'Visitor books in the management of rock art sites: an evaluation using Carnarvon Gorge as a test case' by Natalie R. Franklin, in the previous issue of *RAR*, pp. 263, the reference for Appendix 1 contains an error. The correct location is:

http://mc2.vicnet.net.au/home/aura/files/franklin.pdf

Rock Art Glossary

Rock Art Glossary: a multilingual dictionary, expanded second edition (first edition 2001). Edited by Robert G. Bednarik, Ahmed Achrati, Tang Huisheng, Alfred Muzzolini, George Dimitriadis, Dario Seglie, Fernando Coimbra, Yakov A. Sher and Mario Consens. 274 pages, in English, Arabic, Chinese, French, German, Greek, Italian, Portuguese, Russian and Spanish, with translation tables.



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BRIEF REPORTS

The petroglyphs of Dowzdaghi, north-western Iran

By KAMAL ALDIN NIKNAMI, MEHDI KAZEMPUR and NASIR ESKANDARI

This study deals with recording of two complexes of petroglyphs at Ghermez Kamar and Dowzdaghi in the northern part of Iranian Azerbaijan in north-western Iran. The assemblage of Dowzdaghi divides into four sub-assemblages, designs and images on the surfaces of isolated boulders, mostly constituting panels and sometimes individual motifs and inscriptions. The investigations have revealed more than 400 pounded and scratched drawings on rock boulders of Dowzdaghi Mountain. The Ghermez Kamar complex contains about one hundred motifs pounded or scratched on boulders that are located behind the Dowzdaghi Mountain on a slope of a mountain named Ghermez Kamar. The main themes of the two complexes are an-thropomorphous and zoomorphic figures, and Arabic and Persian inscriptions.

Because this rock art is no longer a part of a living culture, we have no first-hand information about the tools used or the methods employed to produce these petroglyphs, or their original meanings. It is possible, however, to produce identical markings by striking the rock surface with a sharp-edged cobble of hard stone, and it appears likely that those who made the ancient rock markings used similar tools. In Iran, petroglyphs are more widespread than pictograms, which are preserved chiefly in dry regions, inside caves and under overhanging cliffs. Several assemblages of petroglyphs from all over Iran have recently been published (Vahdati 2010: 10). The history of rock art studies in Iran dates back to the 1960s, when some pictograms were re-discovered by Izadpanah at Dushe and Mir Mallas rockshelters in the Kuh Dasht area (western Iran) (Izadpanah 1969). In early 2011, the archaeological expedition to Zarkhane site (a pre-Historic site near the petroglyphs) conducted a random survey of the region before starting the excavation and this led to discovering the petroglyph complex. The re-discovery of the Dowzdaghi rock art formed part of a campaign spanning the last decade, to identify the distribution patterns of rock art in the region and show the great potential of north-western Iran (see Rafifar 2002, 2004, 2007; Horshid 2003). In terms of number of engraved surfaces it is one of the largest petroglyph complexes of the north-west Iranian plateau.

The complex of Dowzdaghi ('Mountain of Pig') is located 120 km east of Ahar city in Eastern Azerbaijan province, in the vicinity of the village of Dashbolagh Garros, which can be considered as the nearest resi-

Figure 1. *Map showing location of the site in NW Iran.*

Figure 2. *South view of the site, showing distribution of Dowzdaghi petroglyphs.*

Figure 3. *View of the main group of petroglyphs in Dowzdaghi.*

dential centre to the Dowzdaghi rock art (Fig. 1). The complex of petroglyphs, locally known as 'Yazli Dareh', is located at 1400 m asl, around the Dowzdaghi Mountain in the Qaredagh mountain range. It is dispersed over an area of more than 2 km in length and 2 km in width (Fig 2). The more than 400 petroglyphs can be divided into anthropomorphous figures, zoomorphs, apparent compositions reminiscent of hunting scenes, inscriptions and apparently abstract signs (Figs 3–7).

The anthropomorphous figures are frequently shown with one hand raised. Zoomorphs are dominated by what resembles ibexes, elaborated with large curved horns. A wide variety of other zoomorphs occur, including what appear to be equine forms, but without 'riders'. Purported horses with riders seem to depict hunting scenes, sometimes accompanied by what might be dogs, with anthropomorphs carrying 'weapons' such as 'bows'. The Arabic and Persian inscriptions imply that their dating must not be prior to late Islamic era.

Chronologically, the lack of direct dating techniques prompted us to turn our attention to the main criteria of relative dating, including iconographic study of images and the degree of repatination of engraved surfaces. The patination and varnish on only some panels of petroglyphs of this complex indicate that the Dowzdaghi rock art has been carved at different times and that a uniform dating for all panels is obviously wrong. The existence of different styles in the petroglyphs also implies the presence of different phases. However, the lack of stratigraphic relations between the images does not yet allow us to describe their order of succession. Chronologically, this petroglyph complex covers a large span of time, possibly from pre-Historic times to the late Islamic era. The Iron Age site Zarkhane near the petroglyphs indicates the presence of human population in this region at least from the Iron Age.

If such observations were confined to isolated panels of engraved rock, there would be no reason to take them particularly seriously, but in fact the same patterns are repeated around the entire mountain range, so what seemed to be an isolated pattern may be regarded as a more coherent system. Our objective, however, is merely to introduce this complex to indicate the high potential of this territory with regard to further

Figures 4 to 6. *Petroglyphs at Dowzdaghi. The scale in all images is 80 cm long.*

Figure 7. *A huge block in a stream bed, bearing designs on its upper face.*

rock art research in Iran. It should be mentioned that since the Dowzdaghi petroglyphs were created in the open air, a large number must have been destroyed under the impact of the sun, wind, atmospheric precipitation, seismic activities, and cycles of heat and cold weathering so that many depictions are badly worn and some are unrecognisable.

Acknowledgments

We would like to thank Dr Behrooz Omrani, Director of ICHTO of Eastern Azerbaijan, for providing the budget of the Archaeological Project of Zarkhane and for his support. Our thanks also go to Papur Kazempur who guided us to find the petroglyphs, for his logistic support.

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RAR 29-1038

Two Kakadu headdresses

By DAVID M. WELCH

The following is a brief report of two headdress types appearing in rock art in Kakadu National Park, so uncommon that only one example of each is known to the author in this region. These paintings were found while exploring the Arnhem Land Plateau in 2008 and 2009.

The first is a *hoop headdress* and the second is one of *radiating lines with end blobs*, both appearing in ethnographic photographs from other regions of Australia.

Hoop headdress

Figure 1 is a simple human figure carrying a spear-thrower in one hand and a boomerang and multi-barbed spear in the other. Short transverse lines across both arms represent armbands, and similar lines at the waist represent decoration such as the wearing of a hair string belt.

Above the head are two circles or loops, likely to be representing a headdress of similar shape. This sole figure is painted on the small panel of a boulder at plain level. Other art panels on the same boulder depict small fish, a hand stencil and yams. The quartzite 'step' below the figure has been deliberately chipped away, this action being consistent with Aboriginal 'testing' of the rock to see if it is suitable for making blades. Rock edges at many Kakadu sites have been extensively chipped in the manufacture of stone tools and weapons.

The headdress depicted on Figure 1 is likely to

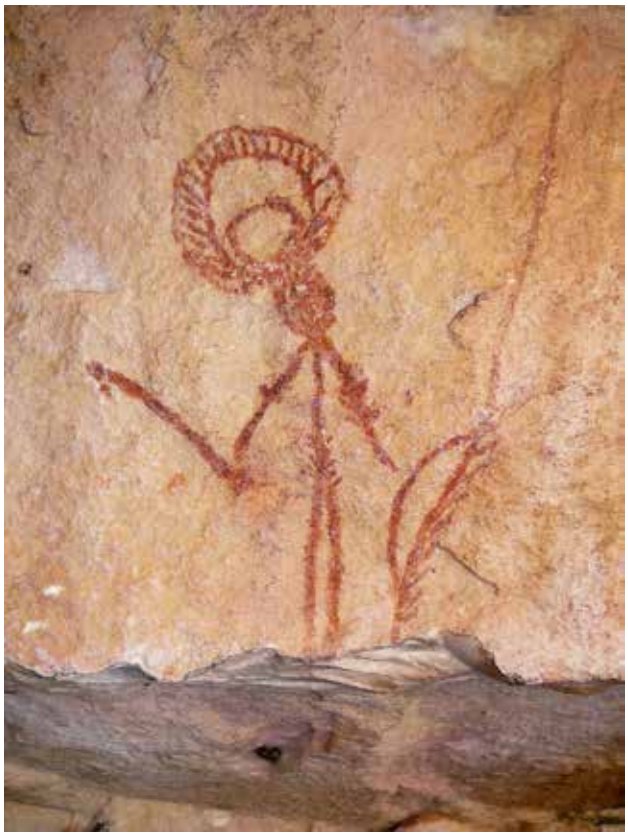

Figure 1. *Simple figure with hoop headdress, Kakadu National Park. Height 16 cm.*

Figure 2. *Dieri tribesman wearing a hoop headdress, central Australia, c. 1920. Photo by George Aiston, courtesy of the South Australia Museum, AA3-2-38.*

represent a type of hoop headdress worn by the man in Figure 2. A member of either the Wangkangurru or Dieri tribe, in the vicinity of Lake Eyre in South Australia, this man was photographed by George Aiston in about 1920. He carries a spear in his right hand and a boomerang and shield in his left. He wears body paint and a piece of cloth replaces his traditional hair belt. On his head are three items; a *charpoo* (white forehead band), a *munta* (net) filled with white cockatoo feathers, and a thin piece of root made into a hoop. In this region of Australia, the hoop is added to the headdress in the belief that it makes the wearer invisible to others (see Aiston and Horne 2009: ii, 92, 134–137 for more photographs and details).

Figure 3. *Kimberley ceremony showing men wearing body decoration and hoop headdresses. Photographer unknown.*

During research of archival photographs from various institutions around Australia, I also came across images showing various hoop headdresses worn by people from the Kimberley. One such photograph, Figure 3, shows a line of men, each wearing ceremonial body decoration, and holding a spear in their right hand and a shield in the left.

Headdress of radiating lines with end blobs

Figure 4 shows part of a panel of human figures, also on

the Arnhem Land Plateau and within Kakadu National Park. The two figures at right may wear a headdress of decorative material tied to the head, or alternatively, their long hair is swept back behind the head.

To the left is a simple human figure wearing a headdress represented by radiating lines with end 'blobs' of paint. Again, use of this headdress type is not known to the Kakadu region in Historic times, but appears in the ethnographic record for central Australia (Mountford 1976: 304). I have also seen several other paintings of this headdress in rock art from the Kimberley region of Western Australia.

Figure 4. *Human figures wearing different headdress types. Height approx 35 cm. Kakadu National Park.*

The nature of the lines with end blobs can be determined by examining Aboriginal ceremonial decoration, where people adorn themselves with body paint, feathers and leaves. Radiating lines with end blobs may represent several types of decoration placed on the ends of sticks. One consists of string pieces, as seen in Figure 5. Another is where lumps of feather or plant down are glued to the ends of sticks, and a third type involves shaving the ends of each stick with a stone scraper and leaving the curled shavings stuck to the ends of each stick, creating end swellings.

The occurrence of these two headdress types in Kakadu rock art expands their known range and provides further evidence of cultural change through time, and the spread of Aboriginal practices across the Australian landscape.

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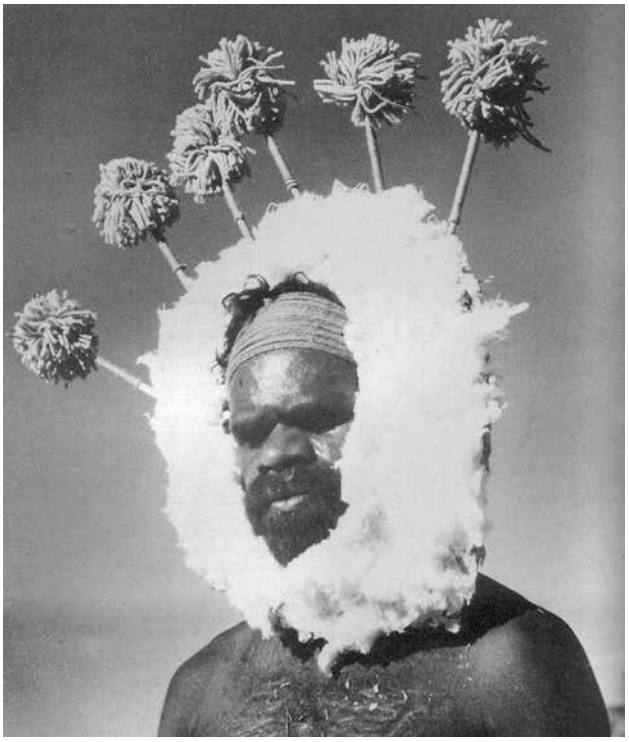

Figure 5. *Central Australian man wearing a decorative headdress. Photo by Charles Mountford.*

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RAR 29-1039

Erratum: In the paper 'GigaPan panoramas for rock art panel documentation: a practical guide' by R. Mark and E. Billo, in the previous issue of *RAR*, pp. 265–267, it was stated that the Gigapan Pro is powered by a lithium-ion battery. It uses in fact a proprietary 7.2V, 4300 mAh NiMH battery.

ORIENTATION

BIBLIOGRAPHY OF ROCK ART DATING

Marvin W. Rowe

Introduction

I have tried to make this bibliography as complete as possible. I have made no value judgements and have included all references that I could find. Some of these listed have not stood the test of time, but are included for completeness. I have also tried to put the following references into some sort of category. The two broad categories are pictograms and petroglyphs. Then categories under these two are based on pigments and techniques. I have undoubtedly mis-categorised some of the references and apologise in advance for any mistakes and omissions that I have inadvertently made. Some references appear under multiple categories.

PICTOGRAMS

Charcoal pigments: conventional pretreatment with AMS radiocarbon dating

Alcolea Gonzáles, J. J. and R. de Balbin Behrmann 2007. C14 & style. La chronologie de l'art parietal à l'heure actuelle. *L'Anthroplogie* 111: 435–466.

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Acknowledgments

I thank Paul Bahn, R. de Balbin, Robert G. Bednarik, Jean Clottes, Jannie Loubser, Dan McCarthy, Juan Ruiz and Paul Taçon for their additions and corrections to this bibliography.

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RAR 29-1041

Remembering George

There can be little doubt that George Chaloupka (1932–2011) — the doyen of western Arnhem Land rock art — made a major contribution to the field. He established the importance and beauty of the region's rock art and drew it to public attention. Along the way, he shaped a milieu in which rock art is an important part of cultural heritage, and where rock art studies are a major field of research.

I first met him in March 1980 when I joined the Northern Territory Museum as the Museum's field archaeologist. By then George at 48 was in full stride. Within weeks, I was dropped by helicopter on Mt Brockman, with George and Mick Alderson, to complete a rock art survey that George had begun the previous year. It was late in the wet season and the country was an unbelievable emerald green with running water almost everywhere you looked, and just to the east loomed the magic of the Arnhem Land escarpment. The following year, this time in August at the end of the dry, I returned to the same plateau with George, Nipper Kapirigi and Rhys Jones, to excavate an archaeological site called Yiboiog as part of the ANU Kakadu archaeological project. I remember Nipper burning the relict *Anbinik* monsoon forest, with clouds of smoke billowing around the dig site — and then the long walk out to Barolba Springs with packs filled with samples. Much of my subsequent work hinged on the desert — but for me these trips were a glimpse of George's world.

The man I knew had the trademark beard that was de-rigueur for an old Darwin hand (did George ever *not* have a beard?). He had a twinkle in his eyes, middle-European manners and charm, a sense of decency, a rogue-ish eye for women, and was clearly a man of strong passions. Born in Tyniste in Soviet-controlled Bohemia, Czechoslovakia, in 1932 he slipped across the border at 16 and escaped to the West, reaching Australia in 1950. Thirty years later, he retained a thick Czech accent. One day at the Museum's offices in Bishop Street, I was momentarily impressed when George announced that 'some bankers from Melbourne are coming to see me', but of course he hadn't said 'bankers'. A later film on the rock art was memorable for the fact that Nipper (whose English was perfect) was subtitled, while George's muffled, heavily accented speech was not.

George's fifteen years as a government hydrologist in the Water Resources Branch, installing gauging stations on remote NT rivers, made him a lean, indefatigable fieldworker. In the course of this work he saw his first Aboriginal rock art at East Alligator River in 1958. 'I looked up in the ceiling,' he later recalled, 'and I was mesmerised by a spell that has never left me'. He joined the Northern Territory Museum when it was formed in 1973 and by the time I met him he'd had seven years to focus on rock art research (six if you exclude destruction of the Museum by Cyclone Tracey in 1974).

It was the 1980s that saw George really scale up his research, extending his rock art recording from the more accessible parts of the escarpment into really remote and inaccessible areas — often on foot, but also clocking up an impressive amount of time in little Bell-47 helicopters. He survived at least one forced landing, bush fires, and embraces by lepers. On one occasion, when I arrived back at the Bishop Street offices, muddy and dishevelled after a particularly disastrous fieldtrip of my own, George took one look and nodded knowingly. 'You know, it always takes the first trip of the year to shake things out', he said.

His interest in the rock art of Arnhem Land was irrepressible and not to be crossed — and he was notoriously unforgiving of other rock art researchers. It was immediately obvious that there were no shades of grey in George's universe. He found cabals and conspiracies wherever he looked. If the Northern Land Council was 'too lazy to get out and talk to blackfellas', it was mining companies Pancon and Ranger that attracted his most implacable bile. His outspoken opposition to uranium mining in the region was one of the factors that stalled Pancon's plans to develop the Jabiluka mine. In 1978, he nominated the Djawumbu massif for the Register of the National Estate. The Aboriginal Land Claim that culminated in declaration of Kakadu National Park (Stage 1) in 1979 drew on his anthropological notes. And when his friend, Nipper Kapirigi died in 1987, George organised a platform burial near Djuwarr waterhole, effectively closing off Deaf Adder Gorge for several years, and making a strong statement about this being Aboriginal land. I can almost see the twinkle in George's eye when Energy Resources Australia funded the 2011 'George Chaloupka Fellowship' for rock art research.

Looking back over this work, George did everything we could expect of a dedicated rock art researcher. He established the distribution, extent and richness of a regional corpus of rock art, recording perhaps 2000–3000 art sites. He produced a series of research papers, a monograph and lavishly illustrated reports documenting the art. In films and books, he promoted the beauty and significance of the art — especially of the exquisite dynamic style figures — and fought passionately for its conservation. Over the course of several decades of fieldwork, he built up a nationally important archive of images, field notes and uniquely important records of *Bininj* accounts of the rock art. Famously, he also worked out a sequence of phases and changing styles over time, arguing for the deep antiquity of Kakadu rock art.

His style sequence was widely criticised. And it did not help that George eschewed quantitative analysis, arguing that style and form should not be reduced to numbers (this was the artist in him). But it is important

to realise just how innovative his work in this area was. He set out the first version of his rock art sequence at an AIAS conference in Canberra in 1974 at a time when detailed regional studies of style and sequence were unusual and before Lesley Maynard's seminal work put rock art studies on a new footing.

Despite all the internecine feuding, most rock art researchers will see something of themselves in George: an intimate and intuitive knowledge of local rock art based on years of fieldwork, a keen eye for detail, an astounding memory for relocating sites in broken country amidst a 3D maze of rock surfaces, and an intuitive grasp of sequence and style based on the accumulated records of thousands of art sites. George supported the archaeological excavations at Malakunanja in 1989 by ANU. Our dates of 50000 years for Aboriginal settlement went some way towards vindicating his views on the depth of Aboriginal history in western Arnhem Land.

George's contribution to rock art research was recognised during his lifetime. He was inaugural president of the Australian Rock Art Research Association and co-chaired the First AURA Congress in 1988; won a Churchill Fellowship in 1983; received an Order of Australia in 1990; was elected an Honorary Fellow of the Australian Academy of Humanities in 1997; received a Doctor of Letters from NTU (now Charles Darwin University) in 1998; and was awarded a Centenary Medal in 2001. Despite being stalked by cancer for a decade or more, George seemed indestructible. On the prospect of dying he commented 'I want to carry on doing what I'm doing, I wish there was a return ticket, I'd sell my soul to the devil for another lifetime. There are thousands of sites still out there that I will never see.' He was given a state funeral in Darwin on 4 November 2011.

Vale George.

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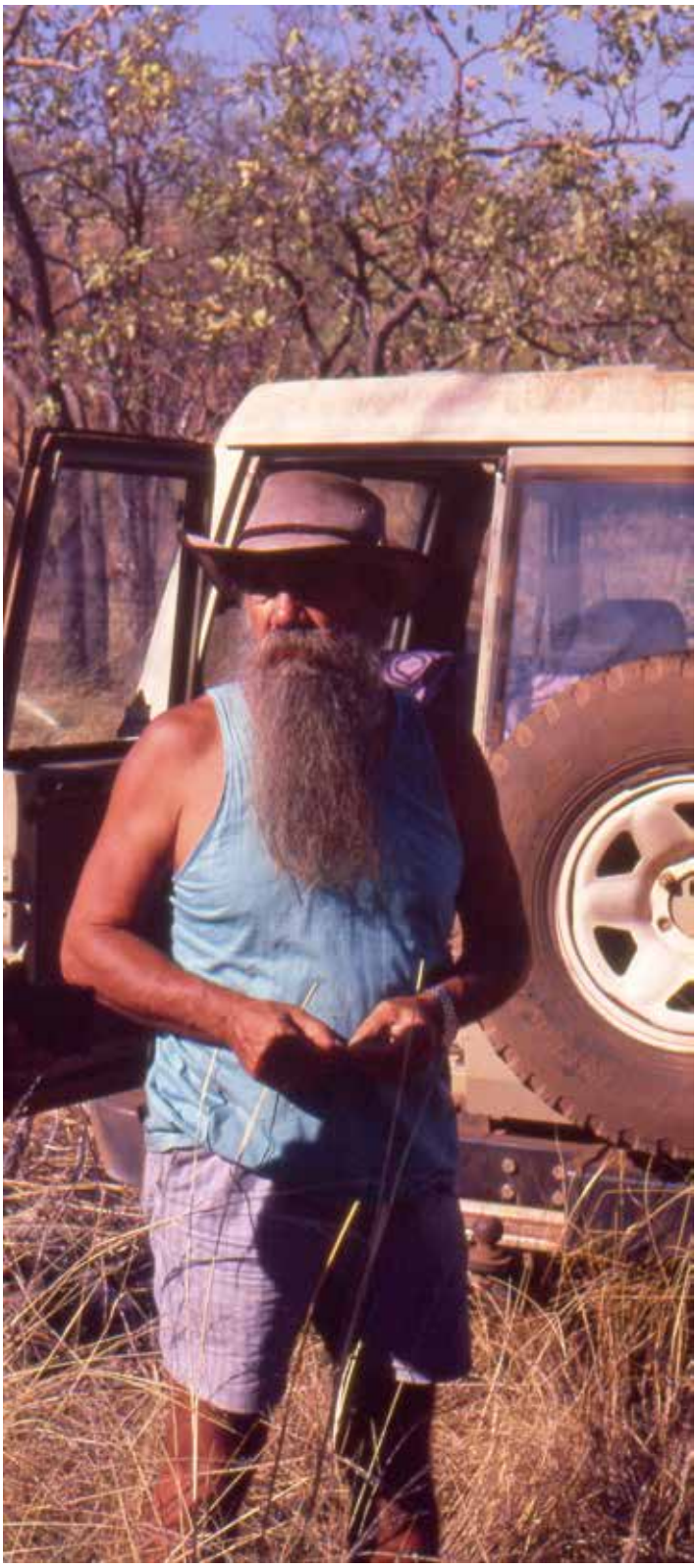
RAR 29-1042



George Chaloupka on the First AURA Congress fieldtrip which he led to Arnhem Land in 1988. Photograph by Paul Taçon.

George Jiri Chaloupka OAM FAHA Hon.D.Litt (Northern Territory University).
Born Tyniste, Czechoslovakia (now Czech Republic), 6 September 1932.
Died Darwin, 18 October 2011, aged 79.

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Major report

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Films

Images of man [film with George Chaloupka], producer: Don Murray, director: David Roberts, Film Australia, 1980.

Land of the Lightning Brothers [film with George Chaloupka and Josephine Flood], director David Roberts, Film Australia, 1987.

Awards named in his honour

George Chaloupka Fellowship for Rock Art Research
George Chaloupka Award for Interior Architecture

George Chaloupka and Nipper Kapirigi, Mt Brockman plateau, August 1981. Photograph: M. A. Smith.

Forthcoming events

Archaeology and Rock Art — 25 years SIARB: IFRAO Congress to be held in La Paz, Bolivia, from 25–29 June 2012. For details see *RAR* 28(2), pp. 280–284. The event will comprise the following sessions:

1 - Dating and chemical analysis of rock art (Marvin Rowe and Alice Tratebas).
2 - Scientific study of rock art (Robert Bednarik and Dánae Fiore).
3 - Aesthetics and rock art (Thomas Heyd, John Clegg and Chris Chippindale).
4 - Management and conservation of rock art sites (Valerie Magar and Freddy Taboada).
5 - Rock art and indigenous communities (Pilar Lima and Patricia Ayala).
6 - Archaeological context of North American and Mesoamerican rock art sites (Evelyn Billo and William Breen Murray).
7 - Rock art and archaeological cultures in present-day Central America: a link between Mesoamerica and Andean region (Martin Künne and Lucrecia de Batres).
8 - Rock art, archaeology and the Caribbean (Michele Hayward, Racso Fernández and Franz Scaramelli)
9 - Archaeology and rock art of the Amazon basin (South American lowlands) (Edithe Pereira and Kay Scaramelli).
10 - Archaeology and rock art in the Andean Formative period (Peter Kaulicke).
11 - Inca rock art: evaluations and possibilities (José Berenguer, Andrés Troncoso and Rainer Hostnig).
12 - Archaeology and rock art of the Titicaca lake basin (Mark Aldenderfer, John Janusek and Matthias Strecker).
13 - Archaeological research and rock art in Bolivia (Claudia Rivera and Sonia Alconini).
14 - Archaeology and rock art in desert regions (Marcela Sepúlveda, Carlos Aschero and Jean-Loïc Le Quellec).
15 - Round table: rock art and the tentative list of World Heritage sites in Latin America and the Antilles (Nuria Sanz and Mercedes Podestá)

For current details and registration see *http://www.siarbcongress.org/*

ARARA-IFRAO Congress 2013: The 2013 IFRAO Congress will be held at Albuquerque, New Mexico, U.S.A., from 26–31 May 2013. The event will be taking place at Marriott Pyramid North. For current details see *http://www.arara.org/2013_ifrao_conference.html*

First International Rock Art and Ethnography Conference: to be held in the first week of July 2014 in Cochabamba, Bolivia, organised by the Asociación de Estudios del Arte Rupestre de Cochabamba (AEARC). For preliminary details see nex page, p. 136.

Fourth AURA Congress: to be held in Australia in 2016. Proposals are invited concerning all principal aspects of the event, such as site, venue and fieldtrip opportunities.

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First International Rock Art and Ethnography Conference

July 2014, Cochabamba, Bolivia

The First International Rock Art and Ethnography Conference will be hosted by IFRAO member Asociación de Estudios del Arte Rupestre de Cochabamba (AEARC) in the third week of July 2014. It follows the successful First International Cupules Conference of 2007, in the same town, and will be chaired by Prof. Roy Querejazu Lewis, the IFRAO Representative of AEARC.

This event is planned to include four days of presentations and discussions, followed by four days of field trips to rock art sites in central Bolivia. Four sessions are planned for the conference, according to the following topics:

1. Ethnographically recorded rock art production (Robert G. Bednarik)
2. Rock art sites as sacral spaces (Roy Querejazu Lewis)
3. Ceremonial use of rock art sites, past and present (Australian Aboriginal elder)
4. Traditional interpretations of rock art sites (Australian Aboriginal elder)

Potential participants are requested to consider contributing presentations to one or more of these sessions. Enquiries concerning any aspect of the event are welcomed by:

Roy Querejazu Lewis
AEARC
Casilla 4243
Cochabamba
Bolivia
E-mail: *aearcb@gmail.com*

New member of IFRAO

The **Association Isturitz et Oxocelhaya – Patrimoines Cultures et Prehistoire** (France) has applied for affiliation with IFRAO early in 2011. The AIEO focuses on the owners and operators of caves with cave art that are open to the public, and operates as an international organisation representing them, the International Commission on Prehistory in Show Caves (ISCA). The Association's principal interests are in pre-History, pre-Historic and contemporary art, archaeology, geology, research, education and cultural heritage. Its President is Joëlle Darricau, Vice-President Emeric Motte, Secretary Pantxika Motte-Sureda, Treasurer Teexa Motte-Darricau-Naudon.

A ballot of the members of IFRAO has determined that this organisation is eligible and welcome to affiliate with IFRAO. It is in fact a valuable addition to IFRAO's membership, because of its key role in the protection and preservation of some of the most endangered rock art sites, those that are heavily visited by the public. We have great pleasure welcoming the AIEO as a new member of the Federation!

AIEO's web site:
www.grottes-isturitz-espaceculturel.com

The IFRAO Representative of AIEO is:

Joëlle Darricau
Villa Lana
Rte de Socoa 485
64122 Urrugne
France.
E-mail: *jdarricau@yahoo.fr*

Please visit the Save the Dampier Rock Art site at
http://mc2.vicnet.net.au/home/dampier/web/index.html
and sign the Dampier Petition. Thank you!