Brazil in the context of early South American rock art

ROBERT G. BEDNARIK

Abstract. The antiquity of Brazilian rock art is reviewed in the context of that of South American rock art generally. Recent trends in the rock art research of this continent seem to resemble those in other continents, including North America. Particular reference is made to recent work in Argentina and Bolivia. In Brazil, the rock art particularly of the Noreste region is considered, and some points are raised concerning current ideas and also concerning issues that might profitably be investigated in the future. Particular attention is given to the application of taphonomic logic.

Introduction

Recent discoveries and research results from South American rock art sites suggest that, as in the rest of the world, petroglyphs have survived longer there than rock paintings in most cases, and therefore the earliest art traditions found are of petroglyphs rather than pictograms. Worldwide, evidence of petroglyphs extends all the way back to the Lower Palaeolithic period, with two finds from the pre-Acheulian of India (Bednarik 1993, 1996a; Kumar 1996). This rock art consists largely of cupules, which applies also to the oldest known sites in Africa (Clark 1958; Beaumont and Bednarik 2013). Middle Palaeolithic rock art is common, often also occurring as cupules (e.g. Peyrony 1934; de Beaune 1993; Bednarik 2013). Although we have numerous finds of very early pigment use, in the form of haematite or other iron oxides and ferric oxides, extending back over one million years (Bednarik 1990, 1994a; Beaumont and Bednarik 2013), there are no pigmented rock markings known from these early periods. However, in a few cases it has been suggested that such pigment crayons were used to colour rock surfaces in the Acheulian (Bednarik 1990), but there is no realistic hope of ever finding such early rock drawings. The simple taphonomic truth is that unprotected paintings or drawings can only survive for up to about 10,000 years, even in rockshelters. In arid regions this figure might be a little higher, in regions of wet climates it is certainly much lower, and it is neither a coincidence that all major early surviving rock painting traditions are reported in arid or semi-arid regions, nor that they all begin around the same time. Paintings can survive considerably longer when they are concealed under a protective skin, such as silica, or in deep limestone caves. Out in the open, however, nearly all surviving Pleistocene rock art in the world seems to consist of petroglyphs.

Despite the shorter occupation of the Americas, compared to that of the other continents, these fundamental principles may also apply there, at least in a general sense. This is then not so much to be seen as evidence of a parallel development, but of the universal principles of taphonomic logic. In North America, cup-and-groove petroglyphs appear to be the oldest rock art to be found, as reported in the Great Basin by Heizer and Baumhoff (1962; Baumhoff 1980) and confirmed by others for the west coast (Nissen and Ritter 1986; Parkman 1992). The earliest surviving rock art in Australia, Asia and Africa is also of cupules and linear grooves, and the oldest known rock art in Europe is of cupules (Bednarik 1994a).

South America

In South America, very early petroglyphs remained widely neglected, but some of the oldest dated rock art was reported from Cueva Epullán Grande in western Argentina (Crivelli M. and Fernandez 1996). Sets of sub-parallel grooves occur on the horizontal bedrock of a small sandstone cave, where they were found covered by a series of occupation deposits. The lowest charcoal found stratigraphically above this panel is about 10,000 years old, which implies that the petroglyphs must be somewhat older and thus of the Pleistocene. In addition to the buried petroglyphs, others occur above ground, on the walls of the cave. While their chronological relationship to the markings under the sediment cannot be ascertained, the possibility that
these other petroglyphs are of similar antiquity must be considered.

What is particularly striking about the petroglyphs of Cueva Epullán Grande is how very similar these markings are to the Pleistocene cave petroglyphs of Australia: linear grooves, convergent lines motifs and cupules, as they occur at the Argentine site, are quite typical of the early Australian rock art traditions, and most particularly they are practically identical in the cave petroglyphs on that continent’s south coast. I should note here that, while cupules are generally recognised to be amongst the earliest rock art in Australia (Taçon et al. 1997; Welch 1993), this excludes the cupules of Jinmium (Fullagar et al. 1996) which are of the Holocene (Bednarik 1996b), as are many others found in Australia.

Cupules and simple linear petroglyphs are as widespread in many parts of South America (Dubelaar 1986), Mesoamerica (Stone 1972) and Mexico (Mountjoy 1987) as they are in other parts of the world, and their occurrence does by no means necessarily indicate very great antiquity, because such markings were also produced much more recently. Nevertheless, the chronological pattern which consistently attributes the greatest ages to a specific set of motifs and marking types is so universal, applying to often apparently unconnected cultures, that it deserves special consideration. This pattern is similar in Bolivia. The oldest petroglyphs I have seen in Bolivia are the early phase cupules of Inca Huasi, a site on sandstone and quartzite near Mizque, and those at Bola Chanka, Santivávez petroglyph complex. They are probably of the early Holocene, occurring on particularly weathering-resistant quartzite dykes in both cases (Bednarik 2000; Bednarik et al. in press). These cupules are always randomly arranged and vary in size, whereas the more recent cupules on the softer sandstone of Inca Huasi are arranged geometrically. This second tradition occurs also at Cueva Toro Muerto near Saipina, where it is up to 4500 years or so old (Bednarik 1988, 1998). However, cupules are also found in more recent traditions of Bolivia, for instance at the Lakatambo (at Mizque) and in the Kalatrancani complex (near Cochabamba) boulder sites, where they are safely dated to the second millennium CE (Bednarik 1998; Bednarik et al. in press). Similar chronological patterns are apparent in Peru (Parkman 1994).

Brazil

The claims for greatest rock art antiquity in South America have been made for Toca do Boqueirão do Sítio da Pedra Furada in Piauí. The pioneer work of Professor Niéde Guidon has demonstrated surprisingly early occupation evidence from this huge rockshelter, apparently of up to 40–50000 years BP (Guidon 1975, 1981, 1984, 1985; Bednarik 1989; Parenti 1993). The principal site of Guidon’s long-term research project in southern Piauí, Pedra Furada, contains an impressive panel of some 1600 rock paintings, including superb polychrome depictions and miniatures in red paint. However, this entire panel occurs on an unstable sandstone shelter wall that is subject to rapid laminar exfoliation. Indeed, the rockshelter owes its existence to the progressive receding of the cliff face just above the sediment, caused by the capillary moisture rising in the porous sandstone and causing subcutaneous salt formation and Salzsprengung (expansion by salt growth, in which the active substance may be any salt). The sediment becomes regularly waterlogged when water descends down the rock chutes on either side of the site (Bednarik 1989: Fig. 2). Because of the rapid laminar exfoliation process forming the shelter the extant rock paintings are certainly quite recent. Two such exfoliated wall fragments bearing what appear to be traces of paint residues have been excavated from Pleistocene layers (Guidon and Delibrias 1986), but they cannot be from the present rock paintings. This does not exclude the possibility that there were much earlier paintings present that have fallen victim to exfoliation, and that the two fragments derive from this tradition. However, the periodically waterlogged sediment would have mobilised the chemical components of any pigment traces. It is more likely that the two fragments, one of which is doubtful, were displaced by rodent burrowing or termite activity, both of which are pronounced at the site (Bednarik 1989).

Nevertheless, there is no doubt about the considerable age of some rock paintings at another site excavated by Professor Guidon, Perna 1 on the Serra Talhada near São Raimundo Nonato. Here, a 3-m-long panel of almost 100 small red figures extends up to 1.2 m below ground level, in an exceptionally dry and well-aerated sediment of very coarse quartz sand. The paintings reach almost down to an occupation layer of in places nearly solidly packed charcoal, dated to about 9500 years BP, which suggests the paintings are of final Pleistocene to early Holocene age (Bednarik 1989). They are the earliest dated rock paintings in the Americas. Marvin Rowe and his colleagues have reported from Perna 1 a fragment of a pigment ball that may have been worn as an ornament, which they dated at 15250 ± 335 BP, but this result is at odds with the evidence that the shelter’s sediment sequence apparently only commences at about 12000 BP (Chaffee et al. 1993). Both results could be correct, however, if the pigment ball had been re-used or handed down in some way. The issue has to remain open.

Petroglyph sites also occur in the region, and my general impression is that they are better contenders for Pleistocene antiquity than rock paintings. The totally patinated geometric motifs of Caicaras on the upper Rio Piauí would be of interest here, particularly as I observed very archaic stone tools at the site in 1987 and 2009. Another site of archaic petroglyphs is at Riacho Santana, where traditions of different ages occur. The older rock art tradition consists of arcs, circles, dissected circles, radial designs, parallel lines, zigzags, convergent lines motifs and mazes — precisely the range of motifs one finds in archaic petroglyphs of many regions in other continents. Of course this does not prove any particular antiquity, but geologically these figures appear more ancient than the paintings, having been subjected to a great deal of weathering.

Rock art occurs in many regions of Brazil, from the tributaries of the Amazon (and also on the lower Amazon, e.g. near Santarém) in the north to Rio Grande do Sul in the south, from Mato Grosso to the Noreste. However, credible claims for Pleistocene antiquity of this art have so far remained limited to southern Piauí.
Discussion
The key to understanding the distribution and surviving forms of very early rock art is its taphonomy. Without the application of taphonomic logic it is entirely pointless to interpret quantitative and even qualitative variables of any rock art, but most particularly of very early rock art (Bednarik 1994b). The ‘taphonomic threshold’ of paintings varies considerably according to environmental conditions, but it seems to be in the Holocene in most circumstances, the obvious exception being deep caves. For petroglyphs, the taphonomic threshold varies from just a few centuries, for figures produced by the sgraffito technique or on poorly consolidated rock, to well beyond 10,000 years, for deeply carved markings on weathering-resistant rock. Location, however, plays a very significant role, and we know that where weathering has little effect, in deep caves, taphonomy has almost no influence on the composition of the surviving sample. This indicates that it would be futile to draw simplistic conclusions from mere statistical evidence. While the heavy distortions of taphonomic processes can be corrected, the processes of doing so are exceedingly complex, and they have certainly not been applied in any meaningful way so far. Until this is done effectively, little can be said statistically about all empirical palaeoart data.

Even without further discussion of taphonomic logic and its application, a subject I have considered adequately elsewhere, some generalised predictions can be made about the nature or type of early rock art to be found in South America. While an early human occupation date in America generally:

a. Unless they occur in deep limestone caves or under protective silica skins, rock paintings of the Pleistocene should not be expected to be found. This has nothing to do with the issue of such rock paintings having been made or not, it is merely a taphonomic phenomenon.
b. The earliest rock art to be found in Brazil will almost certainly consist of petroglyphs.
c. It will probably occur in sheltered positions or on extremely weathering resistant rock (particularly on well-metamorphosed quartzite).
d. Taphonomic logic would further predict that the earliest petroglyphs to be found in Brazil will be deeply carved, rather simple designs, and comparisons with other early traditions would predict that they should consist of cupules, convergent lines motifs (e.g. tridents or ‘bird tracks’), parallel linear marks, and a small selection of geometric motifs.

REFERENCES


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Basic information concerning the 2014 IFRAO Congress, China

Theme: Rock Art, Man, Ecology

Time: July 22–28, 2014

Place: Guiyang City, Guizhou Province, P. R. China

Host: The Rock Art Research Association of China (RARAC)

Sessions:
I. Oceanian rock art
II. African and Mid-Eastern rock art
III. European rock art
IV. North American rock art
V. South American rock art
VI. Southeastern, southern Asian and Southwest China’s rock art
VII. North Asian and north China’s rock art
VIII. Rock art in east China and north Pacific Rim
IX. Rock art and Chinese archaeological cultures
X. Theory and methodology in rock art studies
XI. Iconography and meaning of rock art
XII. Symbol and rock art
XIII. Techniques of rock art
XIV. Conservation and management of rock art
XV. Rock art and megalithic culture
XVI. Dating research of rock art

Fieldtrips to rock art sites in China:

I. North China Line
i. (Line 1) Line of rock art in Chifeng, Inner Mongolia (Yin River rock art, rock art in Ongniud Banner, Bai Cha River rock art)
ii. (Line 2) Line of Yin Mountains and Wuhai rock art (Yin Mountains rock art, rock art in Wuhai)
iii. (Line 3) Line of Alxa rock art (Mandela rock art, Camel Mountain rock art)
iv. (Line 4) Line of Helan Mountain rock art (Shizui Mountains, Helankou and Damaidi rock art)
v. (Line 5) Line of rock art in Yin Mountain, Wuhai and Helan Mountain (major rock art sites in Ningxia and Inner Mongolia)

II. Northwest China Line
vi. (Line 1) Line of rock art in Ürümqi and Altai, Xinjiang (Rock art in Altai Region, Xinjiang)
vii. (Line 2) Line of rock art in Ürümqi and Ili, Xinjiang (rock art in Ili Region, Xijiang)
viii. (Line 3) Line of rock art in Ürümqi and Tian Shan (rock art in Hutubi and Changji, Xinjiang)
ix. (Line 4) Line of rock art in various regions of Xinjiang (rock art in Altai, Ili, Changji and Hutubi)

III. Southwest China Line
x. (Line 1) Line of Huashan rock art, in Guangxi (rock art along Zuo River valley, Guangxi)
xii. (Line 2) Line of Jinsha River rock art, Yunnan (rock art along Jinsha River valley, in Diqing, Yunnan)
xiii. (Line 3) Line of rock art in Canyuan, Yunnan (rock art in Canyuan, Yunnan)
xiv. (Line 4) Line of rock art in Guizhou (rock art in Longli, Guangjialing, Guizhou)
xv. (Line 5) Line of rock art in various regions in southwest China (rock art in Guizhou, Huashan, Wenshan and Canyuan)

IV. East China Line
xv. (Line 1) Line of rock art in Juici Mountain, Henan (rock art in Central China’s Juci
Petroglyph thefts near Bishop stun federal authorities, Paiutes
By Louis Sahagun, Los Angeles Times
18 November 2012

BISHOP, CA. — At least four ancient petroglyphs were cut from cliffs at the Volcanic Tableland and dozens of others damaged in ‘the worst act of vandalism ever seen’ on federal lands in the area.

Ancient hunters and gatherers etched vivid petroglyphs on cliffs in the Eastern Sierra that withstood winds, flash floods and earthquakes for more than 3500 years. Thieves needed only a few hours to cut them down and haul them away.

Federal authorities say at least four petroglyphs have been taken from the site. A fifth was defaced with deep saw cuts on three sides. A sixth had been removed and broken during the theft, then propped against a boulder near a visitor parking lot. Dozens of other petroglyphs were scarred by hammer strikes and saw cuts.

‘The individuals who did this were not surgeons, they were smashing and grabbing’, U.S. Bureau of Land Management archaeologist Greg Haverstock said last week as he examined the damage. ‘This was the worst act of vandalism ever seen’ on the 750,000 acres of public land managed by the BLM field office in Bishop.

The theft required extraordinary effort: ladders, electric generators and power saws had to be driven into the remote and arid high desert site near Bishop. Thieves gouged holes in the rock and sheared off slabs that were up to 4.5 m above ground and 0.6 m high and wide.

Visitors discovered the theft and reported it to the BLM on 31 October 2012. BLM field office manager Bernadette Lovato delivered the bad news to Paiute-Shoshone tribal leaders in Bishop.

‘It was the toughest telephone call I ever had to make’, Lovato said. ‘Their culture and spiritual beliefs had been horribly violated. We will do everything in our power to bring those pieces back’.

The region is known as Volcanic Tableland. It is held sacred by Native Americans whose ancestors adorned hundreds of lava boulders with spiritual renderings: concentric circles, deer, rattlesnakes, bighorn sheep and hunters with bows and arrows.

For generations, Paiute-Shoshone tribal members and whites have lived side by side but not together in Bishop. But desecration of the site, which Native Americans still use in spiritual ceremonies, has forced reservation officials and U.S. authorities to come together and ask a tough question: can further vandalism be prevented?

The BLM is offering a $1000 reward for information leading to the arrest and conviction of the thieves. Damaging or removing the petroglyphs is a felony. first-time offenders can be imprisoned for up to one year and fined as much as $20000, authorities said. Second-time offenders can be fined up to $100000 and imprisoned up to five years.

Notes
1. Lines 5, 9, 14 and 18 belong to comprehensive fieldtrips of rock art sites. Arranged in accordance with all rock art sites in some major region, they are therefore lines involving long travel times and include three or more rock art sites. They usually take one more than 20 days.

2. Details concerning the itinerary, time and cost of rock art fieldtrips will appear at www.chinarockart.com on October 15, 2013, when the registration for rock art fieldtrips will begin.

Concerning the submission of 2014 IFRAO Congress papers
1. Colleagues who have an interest in the 2014 IFRAO Congress are expected to submit their paper titles and abstracts with up to 150 words in English to the organising committee of the 2014 IFRAO Congress before 30 October 2013.
2. Full papers should be submitted to the organising committee of 2014 IFRAO Congress before 31 December 2013.
Members of the Snuneymuxw First Nation are outraged after B.C. (British Columbia) Hydro-contracted machinery damaged a documented ancient petroglyph site near Nanaimo, Vancouver Island, this week.

B.C. Hydro confirmed on Saturday one of its contractors had started work in the area, unaware it contained the petroglyphs and in a statement said it would work with the Snuneymuxw to address their concerns and prevent ‘anything like this from happening again’.

‘Although we have clear policies and procedures in place that must be followed near heritage resources, it appears that this site was erroneously omitted from the information provided to the contractor’, said B.C. Hydro Director of Aboriginal Relations Lyle Viereck in a statement. ‘B.C. Hydro is continuing to investigate this incident and gather the facts’.

The damaged site is known to archeologists by the title Cedar By the Sea Petroglyphs and had been registered with the province since the early 1970s. A documentation form provided by Snuneymuxw listed previous damage in 1960 when a power pole was installed in close proximity to the petroglyph. The rock art is etched into the surface of flat bedrock sandstone close to a road and includes depictions of creatures and human faces.

‘This is a notoriously well-known site’, said Snuneymuxw Chief Douglas White. ‘I don’t understand this to be a mistake that can be made . . . this is the kind of desecration where I would expect charges to be laid. This is a total outrage and disrespect of my people and heritage’.

Locations of petroglyphs are guarded to prevent risk of vandalism but a legislation exists to prevent construction from taking place near known sites.

Archeologist Guy Prouty with Vancouver Island University described the incident as shameful and said it was inexcusable that an inspection of the area was not carried out before construction. Rock art served a variety of functions for its indigenous creators and lasting examples represent an ethnographic record of their history that is spiritual or mythical in nature.

White said members of his community are deeply upset by the incident and said a full response would be forthcoming.

The site has been listed on an archeological registry since the early 1970s as a site of significance, leaving Snuneymuxw Chief Douglas White wondering how information identifying the site did not reach the contractor.

‘It’s an extremely upsetting thing that has happened to a very sacred and important site in Snuneymuxw,’ said White, who learned of the incident May 3. ‘What’s really shocking is that this site is very well known. There are many, many sites like this throughout Snuneymuxw territory . . . but still it’s always a challenge for us to figure out how to protect these sites. To protect them you have to publicise them but publicising them makes them known and exposes them to attention – sometimes attention you don’t want.’

Under provincial legislation there is a maximum $1-million fine for corporations that damage registered historical sites. B.C. Hydro was responsible for similar damage to a Snuneymuxw petroglyph back in the 1960s. (Provided by John McGovern)

The following comment has been made by Ojibwa elder Black Bear to AURA member John McGovern on 8 May 2013 in response to the above:

‘Yup, there are those that do not understand how important the glyphs are to future generations. None of the glyphs, anywhere in the world, would have been done in stone if they were not meant to span the eons. From the golden age they have been done along with many wonders of the world. The building of the pyramids . . . cutting of stone blocks over 120 tons . . . papyrus, metal, tablets and velum. With all the understanding of the above, why would the ancestors be so adamant of using stone to tell their stories unless . . .? You know, John, all over the world there is a Department of Mines. Where on earth is the Department of Ours hiding???

Maybe under our pillows? Bear

Snuneymuxw, Hydro reach an agreement

Sides are optimistic that damage caused to a Cedar petroglyph will result in positive change for future By Ben Ingram, The Daily News (Nanaimo) Friday, 28 June 2013

The Snuneymuxw First Nation is optimistic that damage to a petroglyph in Cedar caused by a contractor with B.C. Hydro will result in a positive change that prevents similar events from happening in the future.

B.C. Hydro said on Thursday that a series of meetings with Snuneymuxw would lead to increased protection of culturally-sensitive locations across the province.

The two have reached agreement on process changes that are expected to give greater protection to culturally sensitive locations across the province.

‘We deeply regret the damage to the petroglyph as we take our responsibilities around these sites very seriously’, said B.C. Hydro executive director of aboriginal relations Donia Snow in a written statement to the Daily News.

The meetings between Snuneymuxw and the utility were a result of damage to a rock face known by archeologists as the Cedar By the Sea Petroglyphs near Nanaimo.

The petroglyphs were registered with the province in the 1970s and documentation held by Snuneymuxw showed that it had been damaged by the installation of a power pole in 1960.

While the site is a known one, a contractor who went to work in the area on 20 April was not warned of its presence. Heavy equipment was driven over the site and the petroglyphs were damaged.

B.C. Hydro said it hopes the incident would lead to an ‘improved process and understanding with respect to these
AURA Treasurer’s financial statement 2011/2012

ELFRIEDE BEDNARIK

Balance in hand on 30 June 2011: $9764.97

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Balance in hand on 30 June 2012: $9316.34

The major expenditure for the financial year was the royalties payment made to the Rock Art Preservation Fund, donating the profit from the sales of the book about the destruction of the Dampier rock art, *Australian Apocalypse: the story of Australia’s greatest cultural monument* by R. G. Bednarik. As stated in that book, all money recouped from its sale would be directed into the RAPF, after all costs of producing and distributing the book had been met. The RAPF-funded campaign has been extraordinarily successful: the listing of the rock art precinct on the National Heritage List was achieved in 2007; the monument has recently (January 2013) become the Murujuga National Park; and its submission for World Heritage Listing is being prepared.

The major income for the year are the registrations received up to 30 June 2012, for the AURA Inter-Congress Symposium held in Flinders University, Adelaide, later in 2012. The balance of the registrations and the costs of that event will be in the financial statement of the following year.