

would be that only one type of material is stored per box. Within the boxes, material should be stored in smaller boxes or bags that are not over-full, can close properly and are labelled, both on the outside and with a duplicate label on the inside. Material stored in cardboard boxes, paper or polyethylene bags should be completely dry before packaging.

The labelling of individual objects is a time-consuming exercise and requires one hundred percent accuracy. There are guidelines specifying the type of ink used, for instance, and this type of detail should be made clear by the repository. At a most basic level, all artefacts which have individual locational data (piece-plotted) should be numbered on the artefact. Depending on the type of excavation or the importance of the collection, diagnostic artefacts or special finds can be individually labelled as well. The labelling of batched artefacts is per bag or container, although the numbering of individual batched objects may be necessitated by the type of analysis undertaken.

THE FUTURE OF COLLECTIONS

The function of a repository is to store archaeological material and records in perpetuity. The acquisition of material will therefore continue until there is either a moratorium on further excavation or techniques have developed to such an extent that excavation is unnecessary or hugely scaled down. Both of these scenarios are unlikely in the immediate future. Instead money is going to have to be made available for the acquisition (preferably the construction) of suitable storage facilities for archaeological collections. This is a matter which SAHRA, Museums, Universities and other institutions holding archaeological material will have to address in a concerted manner and soon.

In the meantime, what are the options? Do we start identifying collections or parts of collections that can be either de-accessioned, placed into 'deep-storage' or passed on to other facilities? The problem has been a subject for debate elsewhere for some time (see for instance Stankowski 1998; Bustard 2000; Keene 2005) but has not really been examined in South Africa as yet. There are ethical and scientific considerations which make the de-accessioning of collections unacceptable. Apart from questions of public trust in institutions as repositories of the national estate, evolving technology may allow other approaches to the extraction of information from seemingly less useful materials. Deep-storage is the storing of collections that are not deemed useful underground or in places where they can be left without further curatorial input. This might be a solution for high-volume, relatively inert material.

A WAY FORWARD

Some of the issues which have been touched on could be usefully debated within the archaeological fraternity. Matters such as determining sample size of material to be retained and methods for recording material discarded at the point of excavation are actually crucial for the future of repositories, both in terms of costs and space. They also affect the quality of data that can be accessed in future research projects and therefore ultimately one of the reasons why material is being kept at all.

The storage of electronic data should be solved, particularly for institutions not linked to universities, as these institutions often do not have the capacity to keep up with this fast-changing aspect of curation.

Finally, there needs to be a shift in the way the curation of collections is approached. This encompasses an understanding of the time and costs involved both by the excavator and by the curator. This understanding also needs to be communicated to the commercial world, the clients who are paying for CRM projects. The curatorial component of a project should receive

sufficient attention if the storage of CRM-generated materials is to benefit archaeological research in the long term. Archaeologists need to start thinking about their collections, and discussing policy.

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MORE ON ROCK ART REMOVAL

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In a remarkable coincidence, Henry's (2007) fascinating paper on the history of removing rock art in South Africa was published about the same time as a summary by me entitled 'The removal of rock art' (Bednarik 2007a), which followed my various shorter comments on this practice (e.g. Bednarik 2004, 2006a). My paper even included an illustration depicting the methodology of Emil Holub's (1890) operations, whose work Henry comments on. The image shows his team using sledgehammers, wedges, thermal shock (placing fires on the rock and then dousing them with water) and crowbars to detach a series of petroglyphs at an unnamed site in the Free State Province. Several of the petroglyphs are clearly visible in the picture, and there are seven men at work. The image leaves no doubt that the methods used were anything but subtle, they involved the



Pluto plant site, Dampier Archipelago, January 2008. Two massive cranes on temporary roads remove rock art. The operation cost in total about \$5 million, so you can imagine its scale.

application of considerable force, and one would expect a very high rate of fatal breakages to have occurred. Henry describes how in the 1988 operation at Knellpoort Dam, even ‘modern technology’ and the use of a stonemason with previous experience in rock art removal could not prevent breakages.

The removal of rock art from its site has been practised in all continents except Antarctica, and, just as Henry describes from South Africa, elsewhere the reasons for it have also changed historically. However, these reasons differ considerably from one region to another. Nowhere else has there been such a strong focus on collecting rock art for museum collections. For instance, in various Saharan countries, particularly Morocco, rock art is today hacked out purely for the black market. In the United States, two men were very recently convicted of rock art theft (Woody 2005). But here I would like to focus specifically on one country, and on one practice, which in recent years has claimed more rock art sites than any other. It is their destruction by archaeologists in the face of ‘development’, which in Australia occurs on an ‘industrial’ scale.

Whereas in South Africa, and in nearly all other parts of the world, the traditional societies who created or ‘owned’ the rock art have long vanished (been extinguished, driven away or disenfranchised), this is not the case in Australia. At least theoretically, all sites there still have traditional custodians. However, Aboriginal communities had no say whatsoever in the matter until their members became citizens, following a 1966 national referendum. Since then, they have begun to secure political and economic concessions, but it still took them to 1992 to wrest native title rights from the government. In most parts of Australia, Aboriginal people dared not express any demands until quite recently, but now that they have become empowered, they have expressed strong views about their rock art sites. Aboriginal people are profoundly opposed to the separation of rock art from its site, for quite fundamental reasons. Such a separation destroys the cultural integrity of the site, because all rock art relates specifically to its site of occurrence, and the creation stories associated with it. The site possesses no cultural significance without the rock art, and the rock art is of cultural significance only through its spatial association with the site.

Throughout the world where rock art exists, its creators have placed petroglyphs or paintings at selected localities, thereby bestowing on them the status of sacred or cultural places. These sites may be associated with specific ceremonies, such as increase rituals, they may be initiation sites, burial sites, places of worship, supplication sites, places of communication

with deities or spirits, or in some other way have assumed a special significance to people. Ideological or religious significance is manifested by externalized features of ideological or cultural concepts, such as rock art or stone arrangements, but it is also universally expressed in other inherent features of the site, including natural formations, ambience, spatial relationships to other cultural or natural aspects of the site and its setting (landscape), Dreaming Tracks and similar concepts, and ultimately in the ontological construct the rock art bears witness to. All of these connections are irreversibly broken when the prime tangible component of a rock art site, the rock art, is removed. Lastly, the stories into which the rock art is woven obviously lose their relevance, because the rock art was a significant manifestation of their validity. Without it, there is nothing to bear witness to the creation myth usually engendered in such stories. The destruction of the site leads to the annihilation of the metaphysical world it is an externalization of.

These principles also determine modern cultural resource management policies. They are expressed in the concept of ‘site fabric’, which is embedded in the instruments governing the management and preservation of rock art or other cultural sites (e.g. in Australia in the *Burra Charter*, see Articles 9.1, 10, 15.3; also in the *Venice Charter*, or the *IFRAO Code of Ethics*, see Articles 6.1, 6.2). As an ‘immovable cultural heritage’ feature, rock art, like all other cultural monuments, must not be moved from its site under any circumstances. Monuments may be replicated, especially for purposes of tourism, but the original must remain in its spatial context. It forms part of a ‘cultural landscape’, and its setting is an integral property of the monument.

Removal of rock art from its often sacred context also destroys the rock art site in the *scientific* sense, because most scientifically relevant variables are lost in the process of rock art removal. These might include orientation, other aspects of setting (e.g. astronomical, totemic), relationships to other rock art and other features of the site, to entities such as Songlines or Dreaming Tracks, and a host of other information about context, conservation and cultural significance.

Then there is the complex issue of conservation, one of the principal practical problems with relocation. Rock art exists generally only because it has managed to survive a series of natural degradation processes over often very long time spans. These taphonomic factors select in favour of those occurrences that are in relative equilibrium with their environment (Bednarik 1994). The fact that these cultural manifestations have survived, often for many millennia, does not necessarily suggest that they will continue to survive in a different environment. Henry briefly mentions one example, when she reports the damage of removed rock art by acid rain and vegetation in metropolitan Johannesburg. I mention two scenarios to illustrate the point. First, at the Dampier Archipelago in Western Australia, 1793 petroglyph-bearing boulders were removed from their sites in the 1980s and dumped in a compound a few kilometres away (Vinnicombe 1987: 19). One would expect that a storage site in such close proximity to the rock art sites should offer identical environmental conditions. This may be correct in most respects, but it was sufficient that just one variable was not considered. All of these petroglyphs had survived to the present because they were located on parts of boulder piles completely devoid of vegetation. The region’s arid vegetation is highly resinous and burns very well, which affects the survival of any rock art adjacent to vegetated areas. The relocated boulders had been deposited in an area with sparse vegetation cover, and twenty years later, a grass fire raced through the compound. An investigation reported in June 2002 that this had caused considerable damage to the stored petroglyphs, through fire spalling of the boulders.

In this example, then, the lack of understanding the role of taphonomic variables in the preservation of rock art caused the disastrous damage. Another example refers to the placing of rock art within buildings, i.e. within a very different environmental regime. This can be achieved either by constructing a building over a rock art site (cf. Bahn *et al.* 1995; Bahn & Hygen 1996) or by relocating rock art and placing it within a building. The three examples cited by Bahn *et al.* (Peterborough in Canada, Besovy Sledki in Russia, Aspeberget in Sweden) provide ample evidence that the change from an open natural environment to an indoor environment can be disastrous for the rock art. Such massive intervention introduces a very different climatic and hydrological regime, which may be conducive to high relative air humidity and ambient carbon dioxide levels, greenhouse effects and the proliferation of microbiota, i.e. conditions the rock art has not had to cope with in the past (Bahn *et al.* 1995: 38).

In addition, there are aesthetic issues to be considered as well: such an extreme measure obviously destroys the authenticity of the site, and therefore the value of the experience of visiting the site or viewing its cultural content. This reduces the tourist value of both former components, site and rock art.

Therefore, the creator or custodian of the art, the traditional owner, the scientific investigator, the rock art conservator and the tourism industry all oppose the removal of rock art strenuously. Where the rock art is part of a major monument of international significance, still another perspective has to be considered. Such a cultural resource is not the property of the state in question; it forms part of the collective heritage of humanity. It is not the prerogative of the state to permit its destruction through separating site and rock art, nor should the purported rights of a developer have precedence over the rights of humanity to have its ancient cultural heritage preserved. The destruction of such sites constitutes an illegal act against humanity (in accordance with the *Unesco Declaration Concerning the Intentional Destruction of Cultural Heritage*).

To appreciate the volume of rock art removal in contemporary Australia, we could consider the worst case we have. The petroglyphs of the Dampier Archipelago in Western Australia, regarded as the largest rock art concentration in the world, have been subjected to degradation since 1964 (Bednarik 2006b). So far an estimated total of 95 000 petroglyphs have been lost (Bednarik 2007b: 236), and that includes thousands of engraved boulders removed by archaeologists. Such destruction occurred almost every year for the past several decades; for instance in January 2008, 180 petroglyph boulders were removed. All of this work was completely unnecessary. The Dampier area features no natural resources of any kind, it is a very remote region comprised of huge boulder piles. But the state government, which is responsible for the complete genocide of the people who produced the rock art, the Yaburarra tribe (in a series of horrific massacres from 17 February 1868 to May of that year), wishes to see every trace of its victims erased. It decided to blanket the islands with Australia's largest complex of petrochemical industries, by attracting over twenty international companies there. These industries are mostly based on natural gas, which is plentiful on the continental shelf offshore. Obviously this resource could be processed anywhere along the coast, but the state government refuses to consider alternative sites. So every time a new plant is installed, hundreds of engraved boulders are removed, despite the desperate opposition of the local Aboriginal communities.

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A "NEW HISTORY OF SOUTH AFRICA"

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In 2007 Professors Hermann Giliomee and Bernard Mbenga presented "New History of South Africa", a beautifully produced 454 page book by Tafelberg, illustrated with hundreds of photographs and drawings. Apart from the editing Professors, no less than 29 authorities have contributed chapters on topics ranging from Early Humans to the New Democracy.

The editors claim that the "New History" is comprehensive, but it is not. The most glaring omissions concern adequate treatment of the achievements of the African farmers, builders and metal-producing peoples in South Africa during the last 2000 years. The book's treatment is not only inadequate, but includes gross errors of fact, such as Dr Luli Callinicos's astonishing claim that: 'The northern slope of the Witwatersrand was later found to be honeycombed with old tin workings by early African miners, over a distance of twelve to thirteen kilometers' (p. 199). I was a research archaeologist at Wits University from 1953 to 1989 and devoted most of these 36 years to the discovery and excavation of African Iron Age Sites, especially on the Witwatersrand. Neither I, nor anyone else, ever found early African tin workings on the northern Witwatersrand. The closest African tin workings were found at Rooiberg, over 300 km north of the Witwatersrand.

I found over 100 Iron Age sites on the Rand, divided into iron-producing sites on the northern slopes and farming sites on the southern slopes, all dating from about 1450 AD. There was a trading network between the early African peoples of these two areas, proving that they had achieved a complex industrial economy on the Witwatersrand four centuries before the colonials arrived. The African editors of Skotaville Press were so impressed by my 1986 exhibition of these data at Wits that they asked me to write "Origin of the African People of Johannesburg". I also published two other books on Iron Age African achievement between the Vaal and Limpopo rivers, including the product of three years' continuous excavation of the Broederstroom settlement dating to 300-600 AD, the largest and earliest African Iron Age settlement excavated and