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The Palaeolithic, preservation and the public

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The caves and open sites of the Palaeolithic lack the monumental remains that attract visitors to many later prehistoric and historic sites, and they tend to be more difficult to preserve and interpret successfully to the public. These issues are examined through a comparison of three very different sites, in China, Tanzania and Portugal, two of which have been accorded World Heritage status.

Much of the current debate about heritage places is concerned with the issue of preservation versus access. To what extent can a heritage site be preserved in the long term if it is also made accessible to the public? Do not the facilities provided to encourage public access actually transform the nature of the site that is to be preserved? Or, put another way, is it the case that the more we intervene to preserve the authenticity of a site for the future, the less authentic it becomes? Archaeology contributes a further complicating factor to the dilemma. If archaeological research at a heritage site includes excavation, the visual appearance of the site becomes transformed as a result. Excavation results in a net gain in information about the site but also irreversibly changes it.

It is still common that a site is excavated and then decisions are made as to what to do with it, unless it is abandoned to the elements. But it is increasingly recognized that a policy for archaeological research should form part of an overall heritage management plan that is agreed upon before any excavation takes place. Successful plans depend on assessing what the cultural significance of the site is to all interested parties (not only archaeologists) and then developing appropriate strategies to preserve it.[1] Thus, the goals of research, preservation and access – rather than appearing sometimes to conflict with one another – are reconciled with reference to the primary aim of preserving the site's cultural significance.

Preserving the Palaeolithic

Some of these issues are illustrated here by reference to three Palaeolithic sites. Less attention has been paid to Palaeolithic sites in the debates about heritage management, the painted caves of France and Spain being perhaps the best-known exception. The lack of monumental remains at Palaeolithic sites, and the difficulty of conveying to the public the very long timescales involved, have perhaps contributed to this relative neglect. But, conversely, these very characteristics make them suitable sites for exploring heritage-management issues.

The three sites examined here are very different in nature and in the management solutions adopted for them. The first, the cave at Zhoukoudian in China that was formerly referred to as the Peking Man site, is an example of a culturally important site excavated long ago, which has a tradition of public access and has taken on a national symbolic value. The second, the hominid footprint tracks at Laetoli in Tanzania, is a good example of long-term preservation being considered more important than immediate public access. Thirdly, the management of the Côa Valley rock-art sites in Portugal exemplifies the successful integration of research, preservation and public access. Culturally, all three sites are seen as unique, although in different ways, and two of them (Zhoukoudian and the Côa Valley) are inscribed on the World Heritage List of UNESCO.

The "Peking Man" site at Zhoukoudian, China

The site at Zhoukoudian (previously transliterated as Choukoutien), some 50 km southwest of Beijing (Peking), demonstrates well how significance changes. As a result of excavation of its fossil deposits in the 1920s and 1930s, its historic and scientific value proved to be outstanding: the site yielded what were then among the earliest known human fossil remains from Asia, and the earliest known evidence worldwide for the controlled use of fire. The excavated sequence in locality 1 proved to be more than 40 m deep and covered a timespan now dated to *c.* 575,000–250,000 years ago.

Particularly because of its long sequence, the site of Zhoukoudian retains its historic and scientific values, even though earlier hominid sites and earlier evidence for the use of fire are now known. Although the site has lost its unique value as a source of such evidence, its significance has increased because of the national symbolic value attributed to it by the Chinese. Events associated with the discovery of the site and with its subsequent publicity have enhanced its symbolic value. For instance, early research at the site has been associated in the West with the names of foreign scholars: the Swedish mining expert J. G. Andersson, the French priest Teilhard de Chardin, the Canadian anatomist Davidson Black and the German palaeontologist Franz Weidenreich.[2] But the find in locality 1 in 1929 of the first skull of "Peking Man" was made by a Chinese scholar, Dr Wen-Chung Pei. A commemorative inscription was engraved on the rock surface at locality 1 in the 1950s in the distinctive calligraphic style of the first president of the Chinese Academy of Sciences. The inscription has added to the historical (and aesthetic) value of the site for visitors because of its association with this distinguished scholar.

The association of Zhoukoudian with the first use of fire (which has since been debated[3]) was echoed by the lighting of a torch there to inaugurate the Asian Games of 1993, held in Beijing. Thus, certain associative values have developed in the recent history of Zhoukoudian as a heritage site, and these have to be recognized in its management in addition to its longstanding historic and scientific values.

However, preserving that significance and making it intelligible to the public is difficult because of the complex nature of the site. The different localities excavated on the Zhoukoudian hill were originally caves and cavities in the limestone that had been occupied by early hominids. In most cases, cave roofs have collapsed, either long ago or during the process of excavation. Locality 1, for instance, takes the form of a huge excavation pit measuring some 80 m long by 30 m wide and more than 40 m deep. Not only is it difficult to convey to visitors the idea of the cave that it once was, but the exposed sides of the pit, including the key stratigraphic section over 40 m high, are vulnerable to damage by erosion and plant growth (Figs 1 and 2). Questions of long-term maintenance and interpretation to the public are therefore closely intertwined and they have become

Figure 1 *Zhoukoudian, locality 1: view towards the key stratigraphic section, partially obscured by vegetation.*

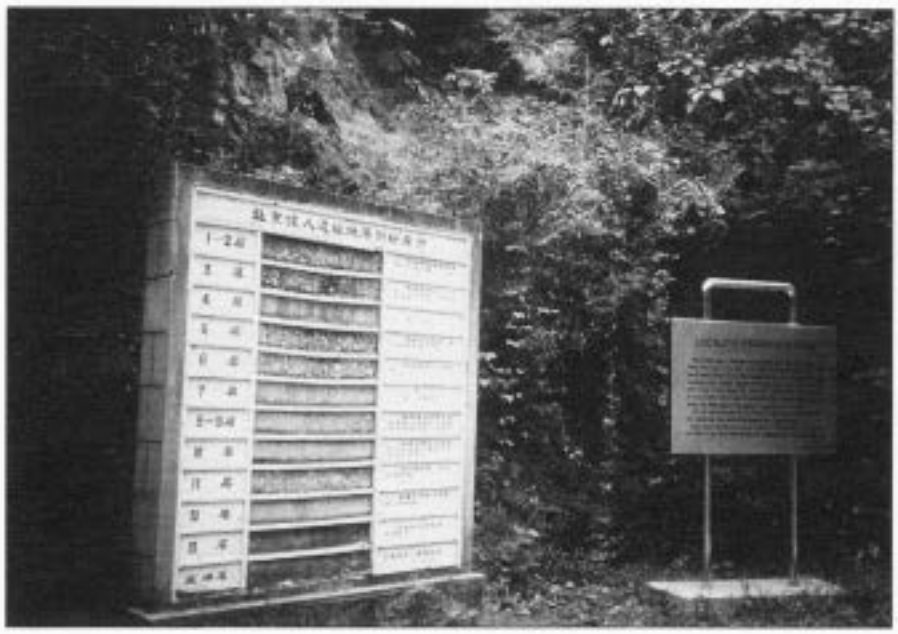

Figure 2 *Zhoukoudian, locality 1: visitor information signs; at right a recent (1995) sign in English, at left a 30-year old sign in Chinese that incorporates samples of the main strata from the key stratigraphic section.*

urgent at a time when visitor numbers at the site are steadily decreasing. The Chinese authorities are now taking steps through the World Heritage Centre to establish an overall management plan for the site.

Zhoukoudian is a good example of an outstanding site, first excavated long ago, that has come to have a symbolic significance in addition to its historic and scientific values. As the values ascribed to it have changed, so its management policy has had to change. Similar situations exist at many other well known heritage sites around the world.

The hominid tracks at Laetoli, Tanzania

Compared with Zhoukoudian, the hominid tracks at the remote site of Laetoli in Tanzania are a recent discovery. Found in 1976, they were excavated by the British palaeo-anthropologist Mary Leakey in 1978 and 1979.[3] Excavations revealed two parallel trails of hominid footprints preserved in a volcanic tuff and extending over a distance of some 27 m (Fig. 3). Dated to between 3.4 and 3.8 million years ago, they are the oldest clear evidence of early hominids walking upright and at a date that precedes the earliest evidence of stone-tool making. Moreover, the tracks provide evidence of the soft tissue of the feet and the nature of early hominid gait that fossil bones alone cannot provide. Laetoli is therefore of unique historic and scientific value, and of key importance to studies of human evolution.

The evidence of the tracks was meticulously documented by Leakey's team, with the help of photogrammetry and plaster casts, and fully published.[4] However, within a few years, the alarm was being raised about the long-term preservation of the site. Mary Leakey had reburied the tracks under a mound of river sand, topped by a layer of volcanic boulders to prevent erosion of the sand and to keep animals off the excavated area. But seeds of acacia trees included in the river sand flourished in the micro-environments created by the boulders, and there was a risk that the roots of the acacias were penetrating the trackways. A joint project of the Getty Conservation Institute and the Antiquities Department of Tanzania in the years 1995–96 showed that this was indeed the case in a few instances, although when re-excavated the tracks proved to be in good overall condition.[5,6]

Figure 3 *Laetoli, 1995, the southern part of the trackway from the south, showing two sets of hominid footprints: the right-hand set is interpreted as made by two people, the second stepping in the footprints of the first, and the left-hand set by one smaller individual; the smaller tracks diverging to the right of the hominid footprints were made by animals.*

The announcement of the re-excavation project prompted a debate about access to the site for scientists and visitors. Because of the remoteness of Laetoli (several hours by vehicle west of the Ngorongoro Conservation Area), few palaeo-anthropologists had visited it. There was therefore some pressure from the academic community to make this unique site directly accessible for further investigation. There seemed to be three main options:

- to lift the entire trackway and to install it in a museum elsewhere in Tanzania
- to erect an enclosure building around the excavated tracks, keeping them visible for both scholars and visitors
- to document the tracks exhaustively and then to rebury them, using techniques likely to ensure their long-term preservation.

The first two options were open to several objections. Whereas lifting fossil bones is normal practice, the cutting, lifting and transporting of an entire length of trackway without damage to the footprints would be extremely challenging. Technical problems apart, much of the significance of the Laetoli site lies in the fact that it represents the earliest physical evidence of human impact on the Earth's surface. Removal to a museum would destroy this unique context. The second option, like the first, would be extremely costly because of the remoteness of the site. The design of protective buildings for archaeological sites has often proved problematic even in areas, unlike Laetoli, with good infrastructure and facilities. Moreover, the site would still have continuing costs for security and maintenance, which would be very difficult for the Tanzanian authorities to meet.

For these compelling reasons, the Tanzanian authorities agreed to the option of reburial and long-term preservation, following re-excavation of the tracks in 1995–96. The re-excavation team included three leading palaeo-anthropologists, who studied the footprints, and photogrammetrists, who made a record accurate to 0.5 mm (Fig. 4). The trackway was then carefully reburied under multiple layers of local sand and soil, combined with geotextiles (water-permeable and root-inhibiting materials) (Fig. 5).[5] The local Masai community have come to appreciate the significance of the site and have adopted it as a place revered by them (Fig. 6). They are responsible for guarding it on behalf of the

Figure 4 *Laetoli: photogrammetric record of footprint G1-36 made in 1995.*

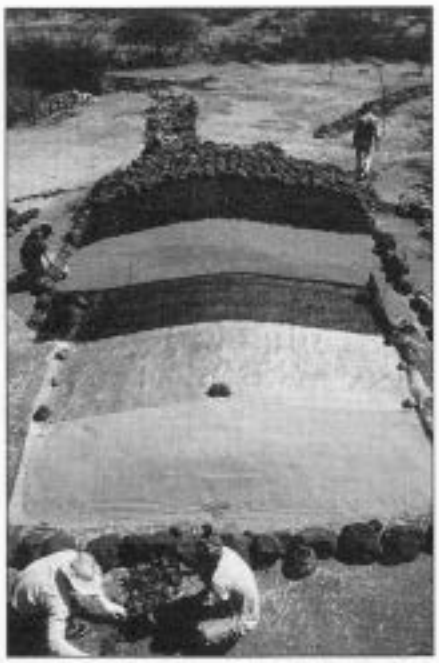

Figure 5 *Laetoli, 1995: the trackway looking north, showing different layers of the reburial stratigraphy.*

Figure 6 *Laetoli: visit of Masai elders to the reburied trackway, 1995.*

Antiquities Unit of the Tanzanian government, which also carries out routine monitoring. At the Olduvai Museum, more accessible than Laetoli to visitors as they travel between Ngorongoro and the Serengeti plain, a new permanent display is devoted to the site of Laetoli.

The rock art of the Côa Valley, Portugal

Unlike the evidence of Palaeolithic activities uncovered at Zhoukoudian and Laetoli, the rock art in the Côa Valley has been exposed and visible since it was created during the Upper Palaeolithic, some 20,000 years ago. Open-air rock engravings have been discovered by archaeologists at many sites extending at intervals for some 17 km along both banks of the River Côa (Fig. 7). They constitute the largest known concentration of open-air Palaeolithic rock art in Europe, and have helped to revise the conventional wisdom that Palaeolithic art was confined to caves and rockshelters. The art itself is often of superb quality and it includes representations of, for example, animation that have few parallels in prehistoric art (Fig. 8). Its historical and aesthetic significance is therefore very great.[7]

The sites in the Côa Valley, situated in the remote northeast of Portugal, were brought to the knowledge of the outside world only when they were threatened with destruction. Construction of a hydroelectric dam in the valley was stopped when the significance of the rock engravings became clear, but only after international protests, a bitter political controversy in Portugal and a change of government. Because of the exceptional publicity given to the controversy, once an official decision had been made to preserve the rock art at the cost of the hydroelectric dam, the authorities were under acute pressure to allow the public to view sites claimed to be so important. The pressure was the greater because indistinct rock engravings are not easily interpreted to non-specialists.

In response, the Côa Valley Archaeological Park was designed, implemented and opened within twelve months of the government's decision to suspend the dam project.[8] The plan underlying its design incorporated the three goals of research, preservation and public access. A priority for research was to confirm the Palaeolithic date (which had been disputed) of many of the engravings by the identification and selective testing of Palaeolithic open sites in the same valley. This goal was achieved, and research has since concentrated on detailed recording of the rock art.

Given that most of the panels of schist rock on which the engravings are made have been exposed since the Upper Palaeolithic, any risks to their long-term preservation were more likely to stem from the impact of visitors than from exposure to the elements. The policies for visitor access were therefore designed with preservation in mind, using a combination of strategies involving guided tours of limited extent and duration, and a variety of information media to help the visitor

Figure 7 *The Côa Valley: view from the east.*

Figure 8 *The Côa Valley: engraving of two horses with their heads intertwined (the height of the horse on the right is approximately 0.5m).*

Figure 9 *The Côa Valley: guide and visitor inspecting rock art at the Canada do Inferno site.*

understand the significance of the art (Fig. 9). By training guides and employing other staff, the project has now generated more local employment opportunities in this economically impoverished region than the hydroelectric dam would have done. These will increase further as current plans for diversification of visitor attractions in the area are implemented.

Because of the intense political debate that it generated, the Côa Valley controversy created a national level of awareness of the Palaeolithic that is unparalleled in most other European countries.

Conclusion

The three sites described here do not boast monumental remains or immediately spectacular sights. They nevertheless raise important issues in heritage management. The example of Zhoukoudian shows how significance changes and how, as time passes, heritage sites often take on a national symbolic value. At Laetoli, the courageous decision was taken to provide access indirectly through high-level documentation and museum display while preserving the site's all-important context for future generations. Finally, the Côa Valley is an example of rapid response to intense public pressure to put a heritage site on display, one that successfully integrates research, preservation and public presentation.[9]

Notes

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9. I am grateful to the International Centre for the Study of the Preservation and Restoration of Cultural Properties, Rome (ICCROM), for inviting me to undertake a reactive monitoring mission to Zhoukoudian for the World Heritage Centre. I also thank the Getty Conservation Institute for providing illustrations of Laetoli.