setting up heritage councils, especially those that do not have major museums or universities within their borders.

This is by no means the end of our problems, of course. The various provinces will have to develop functioning heritage agencies and appoint staff members who are competent to deal with heritage matters. These agencies will then function under the control of the provincial governments. Several colleagues have expressed fears that the opportunities for corruption will be rife. Given recent events in the Western Cape, where provincial ministers countermanded environmental impact reports and issued development permits in exchange for political contributions, these fears are not far-fetched. On a professional level, the problems inherent in research investigations that cross provincial boundaries have not received much attention: the Palaeontological Society of Southern Africa made representations on this score to the Minister of Arts, Culture, Science and Technology and to various provincial executives, to no effect. If a fossil bed crosses a boundary, as it will in various places in the Karoo, for example, who can claim the fossils for their provincial museum? The problems are not trivial.

In researching this problem, I corresponded with many colleagues in South Africa. Invariably, those who are employed by government institutions of one sort or another (museums, heritage agencies) asked to remain anonymous, for fear of retribution. This is not very encouraging where robust debate is obviously required. Private legal opinion expressed to me is that the National Heritage Act was poorly drawn; that it contains internal contradictions, including constitutional ones relating to national and provincial powers; and that it will provide a field day for lawyers.

It seems that we are stepping on crocodiles. In such circumstances, it is difficult to remember that the original intention was to drain the swamp. In this instance, the problem is even more acute: there was no swamp until the legislators pumped in the water. ❑

> So far as scientific evidence goes, the universe has crawled by slow stages to a somewhat pitiful result on this earth, and is going to crawl by still more pitiful stages to the condition of universal death.
>
> *Bertrand Russell*

# Managing collections of human remains in South African museums and universities: ethical policy-making and scientific value

Judith Sealy*

Studying human remains is one way to learn something of the lives of our ancestors, but there are urgent ethical questions about some remains in collections

Several articles in this issue describe recent work on fossil hominid remains or on the emergence of modern humans (between 200 000 and 100 000 years ago) — major issues in archaeology and anthropology to which South African finds have made and continue to make a key contribution. Ancient human remains can be meaningfully assessed only in a comparative framework, by tracing the emergence or disappearance of features, or investigating relationships between lineages. The study of recent human skeletons (those from the last 10 000 or so years) plays an important role in such comparisons: a role that can be critical, as in the question of whether early modern humans in South Africa were or were not the direct ancestors of more recent Khoesan populations — an as yet unresolved question.

South African museums and universities house collections of human remains, collected over the past century or so. They range from recent to very ancient: from people who voluntarily donated their bodies to science; through the remains of individuals who died and whose identities could not be established, or whose relatives did not claim their bodies; to archaeological specimens hundreds of thousands of years old. A few skeletons continue to be added to the collections: human remains are frequently exposed by construction or other earth-moving work. Some are relatively recent, but many are hundreds or thousands of years old, and these are removed to medical schools or museums until their future can be decided. In the early 20th century, when South African museum collections were being built up, some curators collected skeletons aggressively from any available source, at times in a manner that is morally unacceptable. As Legassick and Rassool[1] have pointed out, the ethics of continuing to curate such remains require re-examination.

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Some skeletons in museum collections are the remains of people known in life, whose bodies were stolen by unscrupulous collectors. Old Katje, the wife of a San man whose corpse was dug up by an early 20th-century skeleton hunter, is recorded as saying: 'Since I heard that my relatives' bodies were taken and cooked [that is, boiled to skeletonise them] I am sick from sorrow, and I will not recover from the shock for a long time. I wept for days.' (statement to Lance Corporal Ross, CMP, 26/1/1910, quoted in ref. 1). Others are the remains of people hunted down and murdered by commandos, in the appalling acts of genocide committed upon Khoesan people by early colonists. If these peoples' families or communities can be identified, and wish the remains of their kin to be returned to them, this would undoubtedly be the right thing to do.

Legassick and Rassool, who are historians at the University of the Western Cape, support 'a ceremony of mass reburial of the human remains held by museums', and go on to say that 'We submit that there is no conceivable scientific value in the preservation by museums of these remains which outweighs the ethical need for their reburial' (ref. 1, p. 49). This point of view is emotionally compelling, especially in cases such as those of Old Katje, offering a chance to make at least symbolic restitution for past wrongs. But such cases account for only a small proportion of the human remains in collections. Many skeletons are thousands of years old, and their relationships to living populations are unclear. Institutions that house collections of human remains are currently working with interested parties to develop policies for the future of these collections. Options

include repatriation, reburial or keeping in a place of safety, among others.

In developing these policies, it is important for everyone to be well informed about the manifold significance of human remains. Scientists do not always do a good job of informing the wider public about their work, and there is a lack of general awareness of the value of human remains in reconstructing our long and little-known pre-colonial history. Human remains can inform us about one individual's life, or a series of skeletons can illuminate the history of a community and how this may have changed over time.

When most of the skeletons in museums were collected, in the first half of the twentieth century, research focused on metrical studies of crania, typically in a framework of racial typology — now a thoroughly discredited approach. There are, however, newer methods that can yield information undreamt of in the early twentieth century. Radiocarbon dating of bones tells us the ages of archaeological skeletons, and a number of those in our museums date back as much as 10 000 years. Stable isotope analysis tells us what people ate, and it is sometimes possible to infer from this where they lived, and other details of their lifestyles.

As just one example, recent radiocarbon and stable isotope analyses of human skeletons have shown the development of a sedentary hunter-gatherer society in the area between Plettenberg Bay and Knysna, emerging about 4500 radiocarbon years ago, and lasting 2500 years.[2,3] By 'sedentary', we mean that people had settled in one area, rather than moving around large areas of landscape, as (for example) 20th-century hunter-gatherers did in the Kalahari. This community specialized in sealing and certain kinds of fishing, making good use of rare mainland seal colonies along this stretch of coastline. This is a surprising discovery — one that was not apparent from archaeological excavations of sites in the region. Sedentary hunter-gatherers are known from only a handful of anthropological case studies in areas such as the northwestern United States. Much remains to be learned: why did this way of life develop at that particular time? Why did it cease 2000 years ago? What was the nature of the relationship between this community and their neighbours? Did they inter-marry? If so, was it women who 'married in'? Men? Both sexes? These questions can be answered by further analytical work: the isotope ratios in tooth and bone allow reconstruction of what people ate in early childhood and in later adult life, respectively, even for someone who lived several thousand years ago.

Another recent study has determined, through nitrogen isotope analyses of the bones of children, the age at which Later Stone Age infants in the southern Cape were weaned.[4] Age at weaning has an important influence on the number of children a woman is likely to bear, and hence the rate of population growth. The shapes of the bones, too, contain information on peoples' lifestyles: recent work has found differences in the degree of development of muscles in the shoulders and arms of male skeletons from the southern and western Cape coasts, respectively, probably as a result of regional variations in hunting techniques (ref. 5 and Stock & Pfeiffer, in prep.).

This kind of work depends on the identification of *patterns* in the chemistry or morphology of skeletons, requiring the examination of large numbers of individuals. The studies mentioned above were possible only because museums have curated sizeable collections of skeletal remains collected over decades. Many skeletons are, as yet, little studied, because there are very few scientists in South Africa trained to do this kind of work. As a result, we have barely begun to scratch the surface of the information we could obtain, even using current techniques. In addition, new approaches such as ancient DNA extraction and analysis are being developed all the time and promise further insights; it remains to be seen to what extent DNA may be preserved in skeletons in South African collections.

The challenge of developing ethical approaches to collections of human remains is, of course, not a uniquely South African one. Australia, Canada and the United States, among others, have worked out policies that attempt to reconcile the wishes of the (sometimes several) communities that recognize a relationship — through direct descent or cultural affinity — with human remains, and the interests of scientists wishing to study them. In some cases this process has been cooperative. In others, as in the widely publicized case of Kennewick Man, it has been conflictual. One possible starting point is the Vermillion Accord, an agreement between archaeologists and indigenous peoples adopted at the 1989 World Archaeological Congress Inter-Congress in Vermillion, South Dakota, which states that:

1. Respect for the mortal remains of the dead shall be accorded to all, irrespective of origin, race, religion, nationality, custom and tradition.
2. Respect for the wishes of the dead concerning disposition shall be accorded whenever possible, reasonable and lawful, when they are known or can be reasonably inferred.
3. Respect for the wishes of the local community and of relatives or guardians of the dead shall be accorded whenever possible, reasonable and lawful.
4. Respect for the scientific research value of skeletal, mummified and other human remains (including fossil hominids) shall be accorded when such value is demonstrated to exist.
5. Agreement on the disposition of fossil, skeletal, mummified and other remains shall be reached by negotiation on the basis of mutual respect for the legitimate concerns of communities for the proper disposition of their ancestors, as well as the legitimate concerns of science and education.
6. The express recognition that the concerns of various ethnic groups, as well as those of science are legitimate and are to be respected, will permit acceptable agreements to be reached and honoured.

These are clearly excellent principles. The details will have to be worked out for specific contexts and situations. A number of institutions which house skeletal remains have begun this process, and this article is not intended to preempt the results of those negotiations. It is, rather, intended to raise the issue among the wider South African scientific community and to make the point that, in developing guidelines for future practice, we should all be aware of what we can learn from human remains. In the absence of a long written record, studying human remains is one way in which South Africans can learn something of the lives of their ancestors.

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3. Muller C. (2001). *Investigation of possible dietary differences between the inhabitants of Robberg/Plettenberg Bay and Matjes River Rock Shelter in the Later Stone Age: an isotopic approach.* M.A. thesis, University of Cape Town.
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