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Scholars develop globally applicable ethical guidelines for ancient DNA research

The rapid growth of ancient DNA research and its impact on archaeology and other fields has prompted calls for developing ethical standards to govern such research.

These calls have culminated in 64 scholars from 24 countries that are actively involved in ancient DNA research, including University of Cape Town (UCT) Associate Professor Victoria Gibbon, developing a set of guidelines to which they commit to follow in their research.

These guidelines are detailed in an article published on Wednesday in the journal [*Nature*](#).

The publishing of this paper follows discussions that have led the scientific community to consider best practices for sampling of human remains and carrying out scientific analysis on ancient DNA in a way that is engaged with stakeholder groups. However, appropriate approaches to working with human DNA differ across world contexts and no "one-size fits all" approach works for ancient DNA ethics.

A set of principles that can be applied globally, that a substantial number of researchers from different disciplines and based in different places around the world agree to adhere to has not yet been articulated.

The team of scholars from a variety of disciplines who participated in this discussion and co-authored the resulting manuscript are from Sudan, Kenya, and South Africa. They collaborated to frame a set of five guidelines they believe are strong, universally applicable, and to which they have committed in their own work going forward:

- Abide by all regulations in the places where they work and from which the human remains originate,
- Prepare a detailed plan prior to beginning any study,
- Minimise damage to human remains,
- Ensure data are made available following publication to allow critical re-examination of scientific findings, and
- Engage with other stakeholders and ensure respect and sensitivity to stakeholder perspectives.

Gibbon, based in the Division of Clinical Anatomy and Biological Anthropology at the Department of Human Biology explained: "Due to the deep historical roots of humanity being from Africa, researchers around the world are interested in the genetic history on the continent. With advancements in ancient DNA technology, the interest in ancient DNA from Africa has become greater and some have described it as data mining.

"How do we prevent parachute research? How do we protect the genomes of Africa while contributing to the human story and understanding human history? How do we uphold high ethical standards when our legislation lets us down? In my paper last year [*African ancient DNA research requires robust ethics and permission protocols*](#), I focused on South Africa as a case study illustrating the gaps in South African Heritage and health platforms in ancient DNA protection," says Gibbon.

"The advantage of this paper is that researchers from around the globe despite our different regional complexities have agreed on a set of principles, as a starting point and a commitment in the discipline towards improving the ethical foundations of our discipline. For South Africa, and I think Africa in general, this will improve consultation, prevent or lessen data mining and parachute research. It also speaks to transparency and open access data, engagement, respect, dignity and sensitivity.

"In my own research, I hope it will improve communication structures and respect for our local community consultation processes and understanding the need for regular feedback and results coming back to community groups. Timing matters, these relationships on the ground matter, when communities have provided permission and there are no results to report back for years it matters, it creates suspicion, and it impacts those of us on the ground more than those in the west where the laboratories are," she says.

"We see and feel the real gap between the global north versus the global south, without any ancient DNA laboratories on the African continent this leads to a disconnect between where the samples are processed, with where and who they come from. This paper is a first, of many, towards improving ethical research in ancient DNA, as researchers in Africa we need to be careful and responsible with the genetic material of the continent. This paper as a commitment and set of guidelines is a good starting point."

Dr Hiba Babiker, originally from Sudan and currently a visiting researcher at the Max-Planck Institute for the Science of Human History, Jena, Germany said: "This paper represents a great promise to our nations and grants local researchers, descendant communities, and stakeholders rights in research engagement and decision-making. I am confident that these guidelines will apply in Sudan and many other African countries if DNA scholars take them carefully into consideration."

Professor Chapurukha Kusimba, a Kenyan now based at the Institute for the Advanced Study of Culture and the Environment and the Department of Anthropology at the University of South Florida, Tampa and St. Petersburg Campus stated the importance of this article as: "Having a clearly articulated and unified statement on how genetics research should be carried out on a global scale is long overdue.

"The researchers make it concretely clear that genetics data are not usable as arbiters of identity. They advocate and embrace standardised sampling methods, stakeholder engagement with results throughout the whole research process, and embrace the best practices of the twenty-first century engaged research. We do not promote the idea that

some groups have ownership of cultural heritage more than others. Results of genetics research must never be used as tools to settle political scores or suppress resistance.”

Dr Christine Ogola, an archaeologist from National Museums of Kenya, said: “These guidelines will foster stakeholder consultations, transparency in ancient DNA research practice and data access as well as human remains sampling especially where there is no local regulation governing conduct of this kind of research.”

Full translations of the article have been made in more than 20 languages to ensure its accessibility to people around the world who might have stakes in ancient DNA research in their regions. In addition to English, French, German and Portuguese languages commonly spoken in Africa, African co-authors are responsible for four translations – into Swahili, isiXhosa, Afrikaans, and Arabic – with the goal of making the text more accessible to stakeholders on the continent.

Access the paper: [*Ethics of DNA Research on Human Remains: Five Globally Applicable Guidelines*](#).

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