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Lessons from the Ancient One

The final stages of a dispute over an ancient Native American skeleton signal the need for clearer oversight of such human remains.

The decades-long battle over the fate of the remains of an 8,500-year-old human known as Kennewick Man may be nearing an end. Last week, the US government determined that the remains are Native American and are thus governed by a law that provides for the repatriation of Native American remains and cultural artefacts.

Five tribes are seeking custody of the bones, and if any can now demonstrate that Kennewick Man is one of their own, they will get the reburial that they have been asking for since the remains were found on the banks of the Columbia River near Kennewick, Washington, in 1996.

The return of the Ancient One, as the tribes call the ancient human, would help to heal a rift between researchers and Native Americans. It also demonstrates the need for a rethink of the rules. In an age in which ancient genomes can reveal startling links between historical populations, we should ask not just whether remains should be reburied, but who decides and on what grounds.

Kennewick Man's genome, reported last year in this journal (M. Rasmussen *et al. Nature* **523**, 455–458; 2015) paved the way for the US Army Corps of Engineers, which manages the land where the remains were found, to deem him Native American. Before that, the bones were in limbo and kept off display, but were allowed to be visited by scientists and the tribes seeking reburial.

The genome established that Kennewick Man is more closely related to Native Americans than to other global populations sampled. This was no surprise and it torpedoed fringe theories that Kennewick Man was related to Europeans or an indigenous Japanese group.

But the researchers also found that some South American groups such as the Karitiana, who live deep in the Amazon, are more related to Kennewick Man than are many North American tribes, such as the Ojibwa from the Great Lakes region. Of the five tribes seeking reburial, only members of the Confederated Tribes of the Colville Reservation offered their DNA for comparison. Members of this tribe were found to share a relatively close connection to Kennewick Man, but no more than some other groups from North and South America.

This ancestry offers a glimpse at the peopling of the Americas, which probably began some 15,000 years ago when groups from Asia crossed the Bering land bridge into what is now Alaska. Researchers are still piecing together this trek, and it is one of the most exciting areas of human population genetics research. Evidence from ancient and contemporary genomes suggests that the journey was far from simple: multiple waves of humans probably settled on the continents, later moving around and replacing earlier inhabitants as they went.

Kennewick Man's genetic relationship to contemporary Native Americans, including the Colville tribes, will factor into the next decision that the US government faces: whether any tribe can make a legitimate claim to his bones. To make a case, tribes will need to establish a cultural affiliation with Kennewick Man on the basis of several lines of evidence including archaeological, geographical and biological links.

This is where things get tricky. Members of the Colville and the other four Washington-state tribes seeking reburial may be descendants of Kennewick Man, but so too may be lots of other groups, including some in South America. Could the Karitiana also claim the remains?

It is possible that researchers could find people more closely related to Kennewick Man than members of the tribes (who share a history of intermarriage and probably have similar connections to Kennewick Man). There are huge gaps in the understanding of Native American genetic diversity. And DNA analysis can reveal unexpected links. A study last year found that the Karitiana and another Amazonian group have an unexpected kinship with Aboriginal Australians (P. Skoglund *et al. Nature* **525**, 104–108; 2015).

Genomic analysis is a powerful tool that is redrafting human history. But the US government should use its broad-brush insights cautiously as it considers the fate of remains.

The Ancient One will probably end up back in the ground, and many scientists will lament the loss. But there are hopeful signs that disputes such as this between researchers and Native Americans will themselves become a relic of the past. A new generation of geneticists is more likely to involve Native Americans in their research, for instance, by drafting plans for the handling of human remains before they are discovered.

Genetics may be equivocal right now on the identity of Kennewick Man's descendants, but such engagement is the best hope to unravel thousands of years of human relationships, to the benefit of all. ■

“Genomic analysis is a powerful tool that is redrafting human history.”

The nuclear option

China is vigorously promoting nuclear energy, but its pursuit of reprocessing is misguided.

If there's one country that could disprove the old joke among engineers about nuclear power — that nothing can compete with a paper reactor — it may be China. Nuclear power is enjoying a theoretical renaissance in the United States, with researchers advancing a new generation of inherently safe designs and with start-up companies attracting venture capital. But so far, only China has shown the kind of long-term, strategic thinking that would be required to launch a real nuclear revival.

Nuclear engineers from elsewhere know this, and are racking up frequent-flier points on trips to Beijing and Shanghai to support partnerships that may put paper reactors to the test. Already, China is