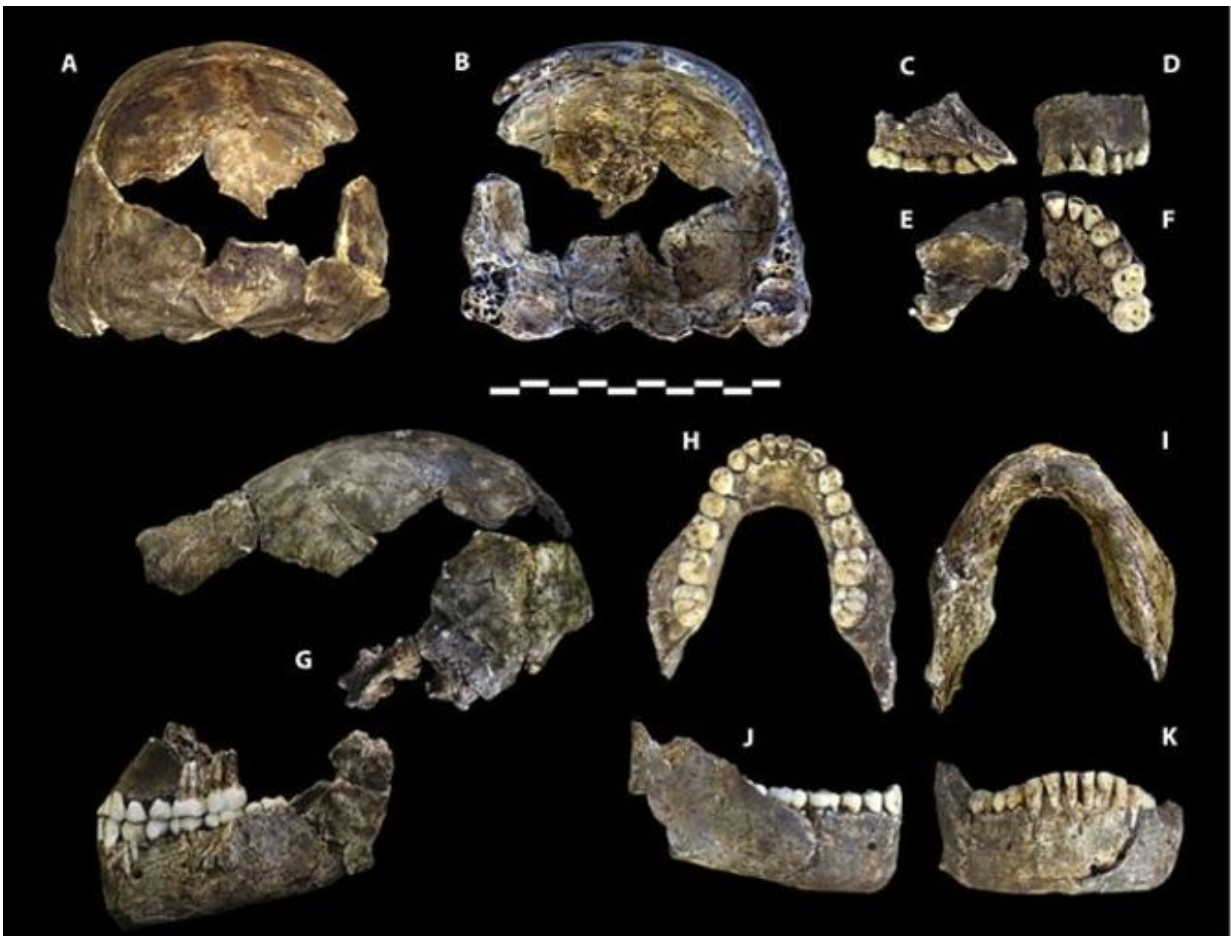


# Opinion: What about Homo naledi's geologic age?

September 15 2015, by Darren Curnoe



Homo naledi bones. Credit: Lee Berger and coauthors 2015 (eLife 2015;4:e09560). Wikimedia Commons, CC BY-SA

Last week was rather exceptional for human evolution science, even for those of us who are used to the extravagances of media attention that surround the field.

We were spoilt with the announcement of no less than two major discoveries in just as many days.

The first of them – [the new South African species \*Homo naledi\*](#) – attracted a great deal of attention from a media only too keen to indulge in truck loads of hyperbole and speculation.

The other announcement – [the sequencing of ancient DNA from 300,000 to 400,000 year old fossils from Atapuerca in Spain](#) – barely rated a mention in the press, overshadowed by the *naledi* hype.

This was probably in part because it was announced at an international conference, the coverage it received in [Science](#) suggesting it will shortly be published in detail in this prestigious journal.

This seems to be a regular practice by *Science* these days, as shown with other similar discoveries.

But perhaps also the announcement of *Homo naledi* the day before the Atapuerca DNA study broke meant that the media had been largely saturated; so it was also a bit of bad luck in the timing.

So, what was all the fuss surrounding *Homo naledi* about?

The bones of this new species were discovered accidentally by cavers exploring the Dinaledi Chamber of the 'Rising Star' Cave in the Cradle of Humankind region near Johannesburg, and subsequently brought to the attention of scientists.

A modest excavation resulted in 1,550 fossils from an extinct human relative, representing the partial skeletons of at least 15 individuals.

The teeth are described as primitive but small; its hand, wrist, lower limb and foot bones are human-like; while other bones of the trunk, shoulder, pelvis and thigh are also quite primitive, being a lot like species of [Australopithecus](#).

Reading the scientific article describing *Homo naledi* you realise that the work is detailed, rigorous and careful.

It involved a large number of specialists covering a very wide set of physical features on the bones and teeth.

The case for the new species is, in my opinion, detailed, compelling and praise worthy.

So far, so good: another [new species](#), the human tree gets all the more interesting, and complicated.

The human drama surrounding the discovery of the bones and their recovery by a group of petite, commando style, female cave explorers is also fun and adds a lot of colour to the tale of the discovery of *Homo naledi*.

One rather odd thing about it though is that the scientists involved still haven't determined its geological age.

This is unprecedented in my experience and raises lots of questions in my mind like: Did the scientists rush the announcement for some reason? Why didn't they wait until they had an age estimate at hand before going to a journal? Are the geologists unable to date the fossils?

My 'nonsense-filter' also tells me that all the talk in the media about this [new species burying its dead](#) and [having human-like morality](#), or that is dismantles one of the key pillars of human uniqueness, needs to be called out for what it truly is: absurd.

Completely unnecessary hype to sell the significance of the find to the media.

Its just the sort of thing that infuriates many scientists and detracts from an otherwise significant discovery; pity really.

The fossils recovered from the site are so far apparently exclusively from *naledi* and may represent near-complete (or complete) bodies that ended up in one part of the cave.

The geologists involved believe the cave was always dark and therefore the bodies may have been deliberately placed there.

Could be, but there might be other explanations as well that need to be given much more serious scientific exploration.

Why leap to the most complicated, least likely explanation? I'll leave you to work out why.

Even so, other very rich fossil sites like [Sima de Los Huesos \(the 'pit of bones'\) in Atapuerca](#), northern Spain, coincidentally the focus of the new DNA research, have also produced a very large number of hominin remains, and they may also have been put deliberately into the cave.

This site is between 300,000 and 400,000 years old.

Yet, as with Rising Star Cave, there is no evidence that they were burying their dead, or had a concept of the afterlife or morality or

engaged in ritual or religious ceremony.

Archaeology, biology and neuroscience all tell us that such behaviours fall exclusively within the human domain, and I see nothing about this new find that changes this.

The oldest convincing [evidence for funerary practice is associated with our species](#) and could be up to 160,000 years old.

Again, it would have been helpful to know how old *naledi* really is; and speculating it [could be as old as 3 million years](#), without any apparent evidence, as the team is reported to have done in the media, is like adding nitroglycerine to the fire of media speculation.

Its one thing to get the message out to the public about the exciting discoveries we're making and to educate the very people who kindly allow us the privilege of doing science using their hard earned tax dollars.

I'm thrilled when my colleagues announce their work to the media, even if I don't always agree with their conclusions.

It can be fun to have a bit of a public stoush over interpretations, and the wider public benefits from a sense that scientific findings can be interpreted in varying ways.

Doing so helps enrich understanding of the human enterprise we call science and to maintain or even grow public interest in it in a world driven by an overriding economic imperative and one prone to disregarding the huge cultural and intellectual contributions it makes to society.

But if we go too far, we run the real risk of trivialising the huge

investment of time, money, energy, care and intellectual effort that goes into many scientific discoveries.

It can also do damage to science itself and, dare I suggest, even contribute to the mistrust that increasing numbers of people in the Anglophone West seem to feel about it.

You can also end up with egg on your face, and some people never seem to learn this lesson.

In contrast, the Atapuerca DNA research has direct bearing on understanding the evolution of the living human species, which is quite rightly where the central focus of human evolution research should be.

Researchers [have argued about three scenarios for the Atapuerca hominins](#): they might be the earliest known Neanderthals; or could sample the population that gave rise to Neanderthals; or perhaps are the common ancestor of both humans and Neanderthals.

The research, as reported by [Ann Gibbons](#), confirms that they are in fact the earliest Neanderthals: a kind of 'archaic' Neanderthal if you like, and subsequently evolved into the 'classic' Neanderthals we see in Europe and West Asia by about 150,000 years ago.

What are the broader implications of the research for understanding the evolution of living humans?

First, the finding pushes the age of the shared human-Neanderthal ancestor well beyond 400,000 years ago, suggesting our species, *H. sapiens*, might also be at least this old.

Also, with the Atapuerca group living in Europe, it's even possible that our species evolved in this or an adjacent region of Eurasia, and later

migrated back into Africa.

And being close to the [common ancestor](#), the Atapuerca fossils give us real insights into what it must have looked like and the ancestral body form of our own species.

The fossils from Europe, Asia and Africa from around this time are physically very diverse, with some researchers thinking they represent multiple species, only one of which could be the ancestor of living humans.

Question is, which one?

This new research suggests the European branch is closest among them all and deserves much more attention in this regard.

In contrast, we don't know, and will doubtless ever know, whether *Homo naledi* had anything to do with the evolution of living humans, least of all whether its brain, mind or behaviour were anything like our own.

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