

Is it back to the future for human origins science or just a case of science media misleading us again?

Written by Darren Curnoe, ARC Future Fellow and Director of the Palaeontology, Geobiology and Earth Archives Research Centre (PANGAEA), UNSW Australia

The falling quality of journalism is accelerating with the [looming death](#) of traditional newspapers and magazines.

Science reporting like so many specialist areas is also a victim of collapsing newspaper revenues and the rapid demise of the 'newspaper business model' - a trend that's playing out [globally](#).

On top of this, the complexity or nuanced nature of scientific findings often don't lend themselves to the 24 hour news cycle. Instant answers to complex questions has great potential to mislead, or worse.

The loss of specialist knowledge among journalists also means that what scientists say is frequently taken at face value, without interrogation of the methods, facts or interpretations at the centre of a discovery.

Journalists also often treat science as different to other domains of human endeavour. Science reporting these days too often lacks application of the kind of critical treatment that other subjects routinely receive.

A cynic might say that the lack of specialist science journalism makes it easier to get positive publicity for research. Content hungry media are only too keen to lap up a well written media release generated by a university or some other research organisation and publish it as journalism.

Lost in this naive approach to science reporting is the basic notion that science is a contest of ideas. That scientific findings are interpretations based on the weight of current evidence or statistical probabilities.

That scientists differ in their opinions because evidence can be interpreted in multiple ways or

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just because of personal rivalry. Very little is black and white, or fixed, in science. Scientific knowledge is provisional.

The generation and promotion of scientific knowledge can be subject to sociological forces. Perverse career incentives or institutional priorities sometimes conflict with the interests of science itself.

Sadly, though, an amount of what we read in the science media is untrustworthy. I would argue an increasing amount, as media outlets find new ways to save money and cut corners.

At the very least, a good deal of mainstream science reporting lacks an attempt at balance, a core principle I was trained in in my former career as a journalist. I see this regularly now as a scientist and science commentator; I haven't been a practising journalist for many years.

The seeming decline in quality science journalism also serves to undermine the public's confidence in a valued and highly successful human enterprise.

If they lose confidence in science then they will naturally lose confidence in the institutions that generate it. Policy makers sensitive to public opinion will be tempted to divert precious funding away from scientific institutions to other needy areas.

We [all lose](#) if science gets the chop.

Very often science stories are repackaged from other news sources and in the process sometimes lose their original meaning or calibration against the insights of scientists themselves.

An article published recently by [news.com.au](https://www.news.com.au) about human origins in China is a good example of the media's capacity to misrepresent science.

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The article was clearly cobbled together from three other media reports: one about a meeting held in China in 2014, published in the [journal *Nature*](#), and which I attended, and [another two Chinese news media](#) from reports about fossils found by researchers I've met or have worked with.

So, what's the problem then? Over the last forty years anthropologists have been engaged in a sometimes acrimonious debate about when, where and how modern humans - people who looked and behaved like us today - evolved.

The research has moved a long way in that time, particularly with the study of DNA from living populations and, more recently, fossil human remains.

But some researchers have stuck to their guns and refused to change their ideas or have modified them in only minor ways in the face of accumulating evidence.

This is the case with many Chinese anthropologists who have largely stuck to a theory of human evolution that contrasts with the genetic evidence as well as the fossil record from Africa, Europe and other parts of Asia.

They see human evolution as one long continuum in China from *Homo erectus* 1.7 million years ago through to people living in the region today.

One is struck by the raft of new discoveries in China over recent years that might seem, on face value, to contradict the views held by many anthropologists internationally, including me. Namely, that modern humans actually evolved in Africa and then later dispersed from the continent to settle the rest of the planet including China.

Some of this research was even generated [by my team](#), including research on modern human teeth from Southwest China that date to at least between 60,000 and 80,000 years old.

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The media articles covering this story (excepting the original article in *Nature*) are unbalanced and inaccurate in their treatment of the new evidence and the scientific and historical contexts of the debate about human evolution.

In uncritically promoting the new Chinese fossils as challenging the prevailing African origins model, they fail to mention, for example, the existence of human remains in Ethiopia dating up to 195,000 years old; much older than those found in China. Or the uncertainties surrounding the dating of the Chinese fossils themselves.

They ignore the overwhelming evidence from genetics accumulated in thousands of published studies that humans evolved in Africa, regardless of when. And the many articles about the genetic clock and the timing of the emergence of modern humans estimated from DNA data.

All of them lack a historical context and the criticisms by some scientists of the perceived links historically between anthropology and nationalism in China.

They failed to consult or quote anthropologists who hold alternative view points; only one geneticist was briefly quoted to bring a veneer of balance.

They also didn't mention the alternative arguments that offer much more plausible explanations for the finds in China than those given by the scientists they quoted.

I can't be sure whether the poor quality of any of these articles is the result of tightening budgets, falling newspaper revenues or cuts to specialist science reporters.

But I certainly hope their sloppiness, especially in news.com.au, isn't a taste of things to come. If it is, we science commentators might find ourselves fulfilling a new role for the sake of the public good.

Disclosure

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