

Professor of Public Engagement in Science Alice Roberts meets three of our closest ancestors

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Our Professor of Public Engagement in Science, Alice Roberts, fronts a new three-part series on BBC Two next week. **Prehistoric Autopsy** (<http://www.bbc.co.uk/programmes/p00xfdm1>) will use the latest scientific research to reconstruct our closest human ancestors, bringing us face to face with three of the most iconic members of our prehistoric family: A Neanderthal, a Homo Erectus and an Australopithecus Afarensis.

We spoke to Professor Alice Roberts about the challenge of bringing these stunning reconstructions to our screens, and also to find out how we compare to our ancient ancestors.

You will be reconstructing three of our closest human ancestors from the bones up. What kind of challenges did you and the team face in attempting to make the final reconstructions as accurate as possible?

Reconstructing our three hominins (human ancestors) proved a real challenge. We wanted to make life-size sculptures of three individuals, and to make them as realistic as possible, but when you're trying to reconstruct someone from thousands of years ago, you have very little to go on! We based the reconstructions on fossil skeletons, but no fossil skeletons are complete, so the first challenge for the model makers from **Crawley Creatures** (<http://www.crawley-creatures.com/>) was to fill in the missing gaps. With the Neanderthal, we were lucky, because researchers had recently produced a composite Neanderthal skeleton, based primarily on a fossil called La Ferrassie 1, but using bones from other Neanderthal fossils to complete it. For our Homo erectus reconstruction, we chose Nariokotome Boy, a remarkably complete fossil skeleton, but we had to use a bit of artistic licence when it came to his feet - which are missing from the fossil. Our australopithecine is the famous Lucy, for which we have almost 40% of a skeleton, and we filled in the gaps with casts of other australopithecine bones. We used accurate casts of the original fossil bones, and I helped the model makers to assemble the skeletons into life-like poses. Then the fun started, as we added clay muscles to the bones. The heads were modelled by palaeo-artist **Viktor Deak** (<http://www.anatomicalorigins.com/www.anatomicalorigins.com/Welcome.html>), and he came over from the States to assemble the heads onto the bodies. I didn't see the reconstructions at that stage and I was rather worried that they would look Frankenstein-like! But I was really impressed by the finished sculptures - we reveal one at the end of each programme. **George McGavin** (<http://www.bbc.co.uk/programmes/p00xfdm1/profiles/george-mcgavin>) and I really hadn't seen the final reconstructions until that moment of unveiling - so it was a genuine revelation. I think the reconstructions are great and I'm looking forward to seeing them again, in the flesh, in Birmingham, when the series goes out - they'll be in **Thinktank** (<http://www.thinktank.ac/page.asp?section=375§ionTitle=Half+Term+activities+%2E%2E%2E%2E+20+Oct+to+28+Oct>) from Monday 22nd to Thursday 25th.

How do our prehistoric ancestors compare to us today? Did the process of reconstructing them reveal anything surprising?

Making sculptures like this really does help to 'bring the bones to life'. Even though I knew how small Lucy was, from her skeleton, I was still taken aback by her diminutive form. The sculptures are great, and they do help you feel a connection with these long-dead ancestors, but for me the most exciting thing is the science that builds from the fossil and archaeological evidence. How do we know how these ancient relatives of ours walked? What tools did they use and why? How similar were they to us today - in how they looked, lived and thought? It was great to bring a group of top researchers into the studio for each programme, to explore these questions.

Continuing research and advancements in technology have allowed us to learn a lot about our ancestors and the kind of world they inhabited. Is there much more still to discover?

One of the most exciting aspects of the science of human origins, or palaeoanthropology, is that it's such a dynamic field. Our understanding of the past, of where we come from, gets better as we apply new scientific techniques to old problems, but we also have the thrill of new fossil and archaeological discoveries - providing us with revelations, testing our old ideas, making us come up with better hypotheses. Who could have predicted that archaeologists would find the tiny Hobbit (Homo floresiensis) on the island of Flores in Indonesia? Or that the DNA of living Europeans would show signs of interbreeding with Neanderthals, long ago? I think we have a good overview of our ancient family tree now, but there's still plenty more to understand and to discover.

Prehistoric Autopsy (<http://www.bbc.co.uk/programmes/p00xfdm1>) (Monday 22 October - Wednesday 24 October, BBC Two, 21:00)

The full programme is no longer available on the iPlayer, but you can still watch clips from episodes **one** (<http://www.bbc.co.uk/programmes/p00xfdmw>), **two** (<http://www.bbc.co.uk/programmes/b01nlz8j>) and **three** (<http://www.bbc.co.uk/programmes/b01nlzsh>).