**The Day We Learned To Think - programme summary (5 parts)**

<http://www.bbc.co.uk/science/horizon/2003/learnthink.shtml>

Understanding of humans' earliest past often comes from studying fossils. They tell us much of what we know about the people who lived before us. There is one thing fossils cannot tell us; at what point did we stop living day-to-day and start to think symbolically, to represent ideas about our environment and how we could change it? At a dig in South Africa the discovery of a small piece of ochre pigment, 70,000 years old, has raised some very interesting questions.

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Anatomically modern humans (Homo sapiens) emerged in Africa roughly 100,000 years ago. We know from fossil evidence that Homo sapiensreplaced other hominids around them and moved out of Africa into Asia and the Middle East, reaching Europe 40,000 years ago.

Prof Richard Klein believes **art** is a landmark in human evolution. Unquestionable art that's widespread and common suggests you're dealing with people just like us. No other animals, after all, are able to define a painting as anything other than a collection of colours and shapes. This ability is unique to humans.

Other scientists agree. They believe art defines humans as behaviourally modern, and its beginning must coincide with the ability to speak and use language. If someone has the imagination to devise a shared way to describe their environment using art then it seems inconceivable that they could not possess language and speech. The search for the moment our ancestors became behaviourally just like us is also the hunt for the first evidence of art.

**The Human Revolution**

The earliest evidence of human art was always thought to appear in south western Europe around 40,000 years ago. Spectacular cave paintings, jewellery, carved figurines, ornaments and new styles of stone and bone tools all appear. There is evidence that ceremonial human burials were taking place. It really did seem like a light bulb had been turned on in the human brain; a big bang of thought.

Had something happened in a very small timeframe during the course of human evolution to forever change our future? A theory called 'The Human Revolution' emerged. It suggests there was some sudden, dramatic, genetic change around 50,000 years ago, that meant human beings, became able to think and communicate. For years this was the most plausible theory of why we evolved language and symbolic thinking, whilst our cousins the Neanderthals got wiped out.

Neanderthals were known to have been living in Europe for nearly 200,000 years before Homo sapiens arrived. But within 10,000 years of the modern human arrival, Neanderthals had disappeared. This seemed to back up the idea of the human revolution. A new, more intelligent species arrived to compete with the stronger, less advanced natives. Intelligence won and the Neanderthals were eventually made extinct, unable to compete with the incomers for scarce food and resources.

**A Vocal Minority**

Prof Jeffrey Laitman is an expert in anatomy. When he began to study the larynx over the course of human evolution he discovered it had moved downwards in our throats, enabling us to modify passing air to produce speech. It seemed that this lower larynx position was reached in our ancestors up to 200,000 years ago. If speech was possible this early in our ancestry, scientists had a puzzle on their hands, why was there no evidence of any human creativity before 40,000 years ago?

A further clue came to light at a neanderthal dig in Israel in 1989. A tiny bone called a hyoid was unearthed. It forms part of the larynx in modern humans and is a key part of our ability to speak. This find implied that Neanderthal man might have been physically capable of speaking; indeed the makeup of voice box was possibly very close to our own. Of course physical ability is not proof of mental ability.

This new discovery brought up another question: what had happened to Neanderthal man? The Neanderthals were very similar to Homo sapiens, but in many ways were better adapted to the colder European climate. They had similar sized brains to modern humans and were physically very strong. They also had shorter limbs and large noses, traits implying that they had become well adapted to their colder living conditions.

**Counter intelligence**

Despite the new puzzle, The Human Revolution theory remained a credible explanation. Until 1999 when anthropologist Chris Henshilwood made an intriguing discovery at a dig site in Blombos, on the east coast of South Africa. He had been excavating a prehistoric cave for over a decade. The cave contained beautifully made artefacts, bone points and spear points that dated back 70,000 years, well before the Human Revolution was supposed to have taken place. But there was still no concrete proof that the objects Henshilwood and his team had found were made by a 'thinking people'.

As the dig continued one item kept appearing. Henshilwood and his team noticed lots of pieces of a soft stone called ochre. If scraped it produces a powder that can be mixed with animal fat and used as a paint. Interestingly ochre did not occur naturally in Blombos and could only have come from several miles away. Henshilwood and his colleagues discovered eight thousand pieces of ochre in the cave. They had been deliberately scraped for a purpose, Henshilwood believes, to paint on other surfaces.

Then another, rather different, discovery was made. It was yet another piece of ochre but it had been marked with what looked like a crisscross pattern. Was this the world's oldest piece of art work?

Dr Francesco d'Errico of the University of Bordeaux, a specialist in prehistoric markings was convinced that the markings were deliberate - not the result of accidental knife marks. Early humans had managed for the first time to store something outside their own heads. They had sent us a message from 70,000 years ago.

There was still one unresolved issue. Now the Human Revolution theory had been proved wrong, the question of what had really happened to the Neanderthals remained. D'Errico revisited 450 pieces of black manganese oxide that had been locked in museum drawers for over 30 years. Dr d'Errico also examined pieces of jewellery that suggested that Neanderthals were expressing themselves through art before Homo sapiens even arrived in Europe. Perhaps neanderthal were not intellectual lightweights after all.

If their distant relatives did not kill them off, what did? The answer Dr d'Errico believes is most likely to have been disease that was new to the region. It might have been like the North and South American native peoples, devastated by 'flu and smallpox, brought in by early Europeans.