

By: [Stefan Aitei](#), Science Editor

## [Neanderthals Experienced Technological Revolution](#)

### *More human than we think*

We can proudly say that our species was the only innovator hominid, and our predecessors were just clumsy apes. Yet this opinion appears arrogant, as a new research has shown that in the Middle Paleolithic, some 300,000 years ago, Neanderthals were capable of innovation. The Paleolithic is regarded as a slow evolving era in cultural and evolutionary terms, with little technological or cognitive development. Later, in the Upper Paleolithic, tools changed dramatically, and modern humans replaced the Neanderthals, some 40,000 years ago. But Terry Hopkinson of the University of Leicester, UK, denies the behaviorally static image of the Neanderthals. They incorporated various forms of tool making into a single technique, enabling them to cope with the harsher weather of the Eastern Europe. "There has been a consensus that the modern human mind turned on like a light switch about 50,000 years ago, only in Africa," said Hopkinson. "But the putatively modern traits accompanying the change, such as abstract art, the use of grindstones and elongated stone blades, and big game hunting began to accumulate in Africa from 300,000 years ago. It was the same in Europe with Neanderthals, there was a gradual accumulation of technology. If Homo sapiens developed human traits gradually, then why not Neanderthals?" The archaeological findings across Europe reveal that the Neanderthals mixed two forms of tool making: the façonnage and the débitage techniques. In the former, a stone core is given shape by chipping off flakes of flint, the latter meaning getting sharp-edged flakes from a core. In the Lower Paleolithic, over 300,000 years ago, the two techniques were employed separately, but it appears that during the Middle Paleolithic they merged into a sole technique, the Levallois reduction technique. When this innovation took place, the Neanderthals appeared to spread into central and Eastern Europe, regions where they and their forebears, Homo heidelbergensis, could not inhabit before, due to the extremely harsh winter climate, compared to the mild climate close to Atlantic. "The eastern expansion shows that the Neanderthals became capable of managing their lives and their landscapes in strongly seasonal environments," said Hopkinson. "This period is commonly thought to be characterized by long periods of little change in technological and perhaps also cognitive development," said Katerina Harvati of the department of human evolution at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany. "Neanderthals have typically been thought of as incapable of innovation, as it was assumed to be something unique to Homo sapiens. With this evidence of innovation it becomes difficult to exclude Neanderthals from the concept of humanity", Hopkinson said.