

# Wisdom of grandparents helped rise of prehistoric man

As more *Homo sapiens* lived beyond the age of 30, scientists say, they passed on knowledge and skills to the young

By [Robin McKie](#), science editor, from [The Observer](#), Saturday 23 July 2011



After studying the Hadza tribe of Tanzania, anthropologists proposed that grandparents' roles were key. Photograph: Kerstin Geier/Getty

Thirty thousand years ago, the human species had a senior moment. Numbers of adults reaching the age of 30 began to rise dramatically. Very soon after, there was a significant increase in artistic expression, food production and the creation of complex tools and weapons.

According to anthropologist Professor Rachel Caspari of Central Michigan University, there is a connection. The surge in numbers of elderly humans triggered a cultural explosion that established our species as masters of the planet.

Senior citizens were the secret of our success, she argues in the current issue of *Scientific American*. "Living to an older age had profound effects on the population sizes, social interactions and genetics of early modern human groups and may explain why they were more successful than other archaic humans, such as the Neanderthals," says Caspari.

The idea that elderly humans played an important role in human [evolution](#) is part of a new appraisal of their role in the success of *Homo sapiens*.

Kristen Hawkes of the University of Utah, after studying the Hadza hunter-gatherers of Tanzania, has proposed that grandmothers must have played an important role in the ascent of *Homo sapiens*. "Good foraging grannies mean healthy Hadza kids – and that was also true for our ancestors," she said.

Hawkes argues that when our apeman ancestors were evolving in Africa, females normally died at child-bearing age. Then an occasional female lived a little longer, and would have helped her daughters, when they had their own children, to dig and forage for food. These grandmother-mother pairings thrived, so their genes for longevity would have been passed on. In this way, the slow rise of the senior citizens began.

But now Caspari has extended the idea. It wasn't granny power on its own that did it; grandfathers played a critical role, she argues, though this change did not occur until relatively recently, around 30,000 years ago. Working with Sang-Hee

Lee of the University of California, Caspari studied collections of fossils from different periods of human evolution, including early australopithecine apemen, Neanderthals and the first *Homo sapiens* to reach Europe.

By analysing teeth from these ancient human beings, they found they could make convincing estimates of the ages of bodies at death. The researchers found that few made it to the age of 30. For most of humanity's prehistory, dying young was the rule, not the exception. Life then was indeed "nasty, brutish and short", as philosopher Thomas Hobbes put it.

As evolution proceeded, numbers of those aged 30 or over did increase, but were still relatively modest. The striking change only came when the team looked at *Homo sapiens* – who evolved in Africa and migrated to Europe around 40,000 years ago – and compared them with their predecessors in Europe, the Neanderthals.

"For every 10 young Neanderthals who died between the ages of 10 and 30, there were only four older adults who survived past the age of 30," Caspari states. But for every 10 young adult members of *Homo sapiens* who died, there were 20 who had reached 30 or older, a significant increase. "The conclusion was inescapable: adult survival soared very late in human evolution," Caspari states.

It is unclear why so many more *Homo sapiens* began to live longer. Improvements in food-gathering could have been involved, suggested Professor Chris Stringer of London's Natural History Museum.

Whatever the reason, the effect would have been profound, he stressed. Elders pass on knowledge of poisonous food, the location of water supplies and important skills such as tool-making. "Older people are important in establishing kinships," added Stringer, author of the recently published *The Origin of Our Species*.

"When it came to disputes over access to water holes or to land rich in game, the more elders there were to remember distant relations in other tribes, the easier it would have been to negotiate and share resources. Older people would have been vital to survival."

1. According to this article, list **two effects** of early humans living longer lives.

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2. According to this article, what is **one reason** early humans began living longer lives?

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