

The Demise of the Neanderthals

"Neanderthal" is a nasty epithet. Synonyms include: clod, lout, lug, and oaf. Our picture of this caveman is one of a stupid, brawny troglodyte whose brain was not sufficiently equipped to compete with the creativity and intelligence of his cousin, the Cro-Magnon *Homo sapiens*. According to a popular book by Yuval Harari (2014), the demise of Neanderthals may have been the first and most complete ethnic cleansing event perpetrated by *Homo sapiens*. It seems like Neanderthals met their demise either through their own lack of intelligence or by the hands of a superior warrior species.

However, recent work summarized by Rebecca Sykes (2020) shows data for a different story: one of metabolic energy. Neanderthals had stronger bones than ours. Neanderthals also had bigger brains than what we have. They seemed to be destined for greatness. There is even evidence for a symbolic awareness in the art and burial rituals of the Neanderthal.

But it took a massive amount of calories to support that big brain. Indeed, it is estimated that the Neanderthal's diet demanded over 5,000 calories a day--nearly twice that of our ancestors. This means that they would have had to eat about 3 Kg of game meat per day. Moreover, during times of cold stress, they may have had to eat 7,000 calories per day. They needed fatty animals.

This diet might have been sustainable, had not a great calamity ensued. About 42,000 years ago, the Earth's magnetic poles shifted. Because of this shift, the temperature cooled drastically and northern glaciers expanded to cover most of Europe and Asia (Cooper et al 2021). Food became scarce, as large mammals became extinct or migrated south. It is thought that under these conditions, Neanderthals could not survive. But the humans could eke through. Our ancestors' brains were not so demanding. So Neanderthals died because of climate change and the fact that their brains were so big that they couldn't be sustained. What makes one fit in one situation can make one vulnerable in another.

Cooper A, et al. 2021 A global environmental crisis 42,000 years ago. *Science* 371(6531):811-818. doi: 10.1126/science.abb8677.

Harari, Y. N. 2014. *Sapiens: A Brief History of Humankind*. Vintage, NY.

Sykes, R. 2020. *Kindred: Neanderthal Life, Love, Death, and Art*. Bloomsbury Sigma, New York.

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