

Impact of the lapedo child discovery



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The Lapedo Child, with its mosaic of early modern human and Neanderthal features, was the result of interbreeding between early modern humans and Neanderthals over an extended period of time. This interbreeding caused subsequent populations of early modern humans in Iberia to have a large quantity of Neanderthal genes contained in their DNA.

The Lapedo Child was found in the Lapedo Valley, 85 miles north of Lisbon, Portugal in 1998. Archaeologists Joao Mauricio and Pedro Souto were initially sent to the Lapedo Valley because there had been reports of rock paintings found in caves in that area. While there, the archaeologists discovered what they called a “ limestone rock shelter” which they decided to name the Lagar Velho Site. In 1992, the landowner at what would become the Lagar Velho site bulldozed away the upper two or three meters of sediment in order to expand a dirt road. By doing so, the landowner exposed sediment and a fissure that ran along most of the length of the rock shelter’s back wall (Zilhao, *The Lapedo Child* (2001)). It’s estimated that the sediment in the fissure corresponds to what was originally two or three feet below the surface before it was disturbed. This fissure turned out to be extremely rich in things like charcoal, animal remains, and stone tools from the Upper Paleolithic age, which showed that it was heavily occupied by humans at one point in time. Then, the archaeologists inspected a recess in the back of the rock shelter. There they were able to recover several small, seemingly human, bones that were stained with red ochre. It turned out to be the grave of a young child. This child had been purposely buried in a way that the head and feet were placed higher up than the hips. The body had been placed on a burned Scots pine branch, and the skeleton was stained with red ochre

because it had probably been covered in an animal hide with red ochre on it. The ochre was thickest around the head. A whole rabbit carcass was found between the skeleton's legs, and deer teeth were found that were likely part of a headdress. Some shells from the Atlantic were also found with the body as evidence of more jewelry. To date, this is the only Paleolithic burial site ever found in the Iberian Peninsula (Hitchcock et al 2001).

As the skeleton of the Lapedo child continued to be analyzed, new details came to light. Radiocarbon dating showed that the skeleton was around 24,000 years old, and was somewhere in between three and a half and five years old when they died (Holloway et al 2013). The Lapedo Child skeleton turned out to have a mixture of Neanderthal features and early modern human features, making it impossible for the skeleton to have come from a purely Neanderthal or purely early modern human background. The skeleton had a retreating chin, which is characteristic of Neanderthals, while modern humans have more protruding chins. The skeleton also had short lower limb segments, with proportionally smaller tibiae relative to their femora (Hitchcock et al 2001). This is a distinct characteristic of Neanderthals. But the skeleton also had features that were clearly modern human in nature. For example, Neanderthals have larger anterior mandibular teeth than humans, and this skeleton had more human sized teeth. Also, modern humans and Neanderthals have different sized thumbs, and the Lapedo child had thumbs of the same proportions of modern humans. The inner ear also seemed to have distinctly modern human morphology (Zilhao, *The Lapedo Child* (2001)). So does this mean the child was half Neanderthal and half modern human? No, it isn't that simple because evidence suggests that by

the time the Lapedo child was born, full blooded Neanderthals had already been extinct for about 4, 000 years. But what it likely means is that, before Neanderthals went extinct, there was a lot of interbreeding between them and early modern humans for an extended period of time, and as a result some populations had a large percentage of their genomes consisting of neanderthal genes (Hitchcock et al 2001). Thus, the people would have been hybrids. Over time, as more modern human migration took place, the percentage of people's genomes consisting of neanderthal genes would have steadily decreased. Today, Europeans likely have only a very small amount of Neanderthal DNA, 1-2% (What Does it Mean n. d.).

The Lapedo Childs discovery stirred up controversy within the scientific community, with different scientists disagreeing on whether or not the skeleton belonged to a Neanderthal-human hybrid, or just a rather stocky human. Joao Zilhao, the director of the Portuguese Institute of Archaeology, was the one who directed the excavation of the Lapedo Valley Child. Zilhao believes that the Lapedo Valley Child is evidence that Neanderthal groups living in Iberia up to 28, 000 years ago contributed to the gene pools of subsequent early modern human populations there (Hitchcock et al 2001). Erik Trinkaus, a paleoanthropologist at Washington University, has a similar outlook. He considers Neanderthals and early modern humans as equally human, and not at all different species. He says that “ Despite the paleontological evidence indicating anatomical differences between these two groups, their overall adaptive patterns, social behaviours and means of communication (including language) cannot have contrasted greatly” (Hitchcock et al 2001). But he agrees with Zilhao that there was

interbreeding which resulted in the hybrid that is the Lapedo Child. It's important to note that these conclusions aren't supported universally, as there are still scientists who feel that the Neanderthals simply went extinct and didn't contribute to the gene pool.

The Lapedo Child, with its mixture of Neanderthal and modern human features, was an important scientific discovery that challenged the notion that the Neanderthals were simply wiped out by early modern humans or just disappeared on their own, but instead lived side by side with early modern humans for a period of time. As a result, Neanderthals and early modern humans interbred and subsequent populations inherited many Neanderthal genes, some of which can still be found in the DNA of modern Europeans.

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