

NEANDERTHAL DNA STUDIES

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Does a recent study of Neanderthal DNA prove that Neanderthals were completely unrelated to modern humans?

In July 1997, a team of researchers published its findings on the analysis of DNA taken from the very first Neanderthal fossils ever discovered (Krings, et al., 1997). Specifically, these scientists claim to have looked for, found, and examined one small stretch of DNA code that resides in mitochondria—the “energy factories” of the cell. Their conclusion was as follows: fewer differences in this portion of mtDNA exist between modern humans, than exist between modern humans and the Neanderthal specimen. That, really, is all their study shows. What it means, however, is quite another matter.

Many evolutionists interpret this latest finding as further evidence of a single, relatively recent origin for modern humans. In their view, a group of early *Homo sapiens* migrated from the African continent and, eventually, replaced all other ancient human populations. Further, these new settlers did not mix with any group they encountered. As a result, Neanderthals were not our ancestors, and did not contribute any of their genes to us through intermarriage. According to Krings and his colleagues, the genetic differences they observed are such that Neanderthals must have taken a completely separate evolutionary path from the humans that occupy this planet today.

To date the time of this split, the researchers used what is known as a “molecular clock.” This technique relies on two pieces of information: the rate at which changes (mutations) occur in the DNA code, and the number of differences between two samples along the same stretch of DNA. For example, if one mutation occurs on average every 10,000 years, and two DNA samples differ by five mutations, then the common ancestor must have lived 50,000 years ago—according to this technique. In previous studies, evolutionists have calculated that all modern human groups descended from a common ancestor living less than 200,000 years ago. When applied to these new data, the molecular clock places the split between Neanderthals and modern humans at 555,000 to 690,000 years ago.

Setting aside the time element for right now, this conclusion really is not a problem for most creationist interpretations of the fossil record. The usual approach treats Neanderthals as descendants of Adam and Eve (see Major, 1996, 10:74-75). They made tools, had well-developed brains, probably could speak like us, and were as little like apes as we are. Certainly, Neanderthals had very distinct features, but they were completely human. People who advocate the out-of-Africa theory may emphasize the differences rather than the similarities, and may tend to place Neanderthals in a separate species from modern humans. But otherwise, they believe that living human groups and Neanderthals share a common ancestor.

What about the problems with this research? First, although the results of this study were consistent with an out-of-Africa model, they do not rule out mixing. In particular, the research examined only one fragment of DNA in mitochondria, and not the massive amount of DNA in the nucleus of the cell. It is this nuclear DNA that encodes most of our physical features, but which is much, much harder to find. According to Kahn and Gibbons, “the new result doesn’t quite settle the debate about whether Neanderthals mixed with modern humans” (1997, 277:178).

Second, recovering DNA from long-buried fossils is fraught with difficulties. Krings and his collaborators are satisfied that their sample was well preserved. However, a survey of other Neanderthal sites in France, Spain, and Croatia failed to turn up other likely candidates (Cooper, et al., 1997). For now, we have to recognize the extreme limitations of this research. It would be dangerous to draw any firm conclusions from one study done on one gene from the mtDNA of one individual. Another difficulty is the danger of contamination. Despite Krings’ extraordinary precautions, he still found what appears to be modern human mtDNA in his samples (see Kahn and Gibbons, 1997, 277:177). Given that the analyses pushed current methods to their absolute limits, there is a great potential for error in these results.

Finally, the molecular clock itself is highly contentious (e.g., Clark, 1997). As with any dating technique based on natural phenomena, there is always the issue of how long the clock has been ticking, how fast it has been ticking, and whether it has ticked at a constant rate. In this case, the rate has been determined by adding up the differences between human and chimp mtDNA, and dividing them by the number of years since their hypothetical common ancestor first appeared in the fossil record. So it is difficult to see how the molecular clock can prove much about evolution when, in fact, it is based on the assumption of evolution itself. There remains the problem, of course, in knowing whether mutations have occurred at a steady rate throughout Earth’s history.

So, the answer to our question is “No.” The scientists who did this research believe that Neanderthals are distant cousins who followed a different evolutionary path from modern humans. The consensus view among creationists also places Neanderthals within the human family, while denying any sort of evolution from a non-human ancestor.

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