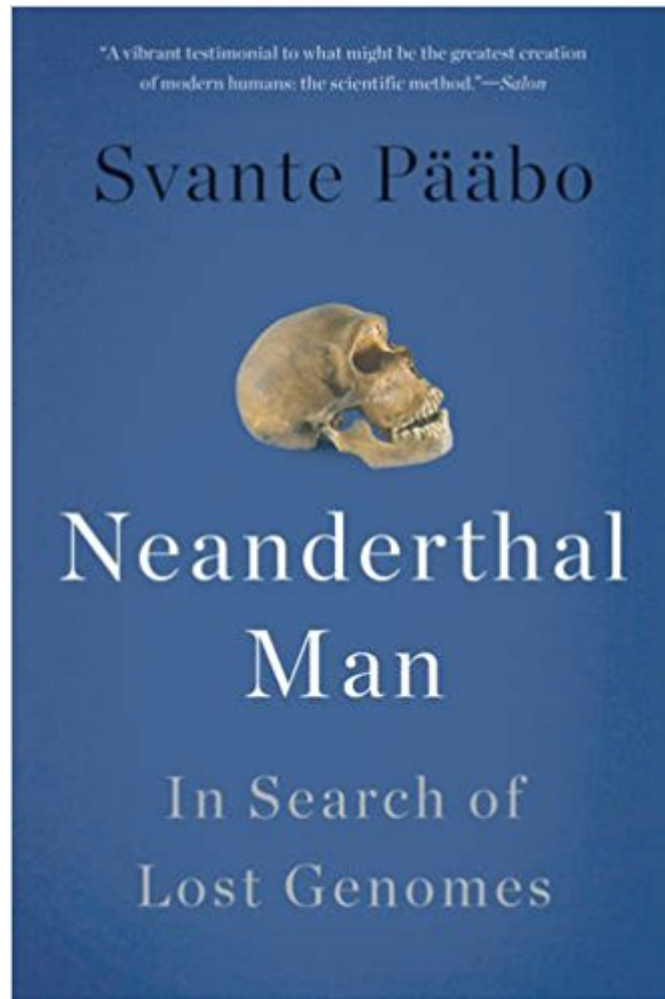


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Neanderthal Man: In Search Of Lost Genomes



Synopsis

ONE OF 'S TOP 100 BOOKS OF 2014Neanderthal Man tells the story of geneticist Svante Pääbo's mission to answer this question: what can we learn from the genomes of our closest evolutionary relatives? Beginning with the study of DNA in Egyptian mummies in the early 1980s and culminating in the sequencing of the Neanderthal genome in 2010, Neanderthal Man describes the events, intrigues, failures, and triumphs of these scientifically rich years through the lens of the pioneer and inventor of the field of ancient DNA. We learn that Neanderthal genes offer a unique window into the lives of our hominid relatives and may hold the key to unlocking the mystery of why humans survived while Neanderthals went extinct. Pääbo's findings have not only redrawn our family tree, but recast the fundamentals of human history; the biological beginnings of fully modern Homo sapiens, the direct ancestors of all people alive today.

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Customer Reviews

With the completion of the full human genome sequence in 2003 and the rapid fall in DNA sequencing costs over the subsequent 10 years, we have been awaiting major advancements in many fields such as Healthcare, Agriculture, Drug Discovery and so on. However, the progress has been slow and the deluge of genome sequence data has been a tough problem to handle. But, Svante Paabo in this fascinating book on the 'Neanderthal Man' shows how the new technologies have enabled him to sequence the genomes of our extinct relatives - the Neanderthals and the Denisovans. The data proves how our ancestors moved out of Africa about 50,000 years back and interbred to a small extent (2 to 7% of our genes come from them) with the Neanderthals and

Denisovans and maybe drove them to extinction. Many interesting facts come out of these studies such as, (a) that gene flow seems to have been from the Neanderthals to us (and not the other way), (b) the founding population of the Neanderthals also seems to have pretty small like in the case of the humans (c) we split from the Neanderthals about 500,000 years back (d) the Denisovans split about 1 million years back (e) the Denisovans seem to be closer to the Neanderthals than to humans, and much more...The book is not only fun to read, but Paabo's detective mode of story telling will also keep the reader focused. By mixing his personal stories with scientific research, Paabo provides a refreshing frankness to the narrative. We get a direct view of the challenges in scientific research and how the role of institutional support and adequate funding can make research a success. Paabo's journey from Egyptian mummies to Mammoths, to Sloths and finally the Neanderthals and Denisovans is a great inspiration to all students of science.

The Neanderthal Man, by Svante, is a compelling recount by a principal in the discovery of genes of the Neanderthals. It starts with the interest in recovering DNA from old sources, and in this case some liver bought at the local market and then desiccated in an oven at 50C. The tale spans over some twenty years, with diversions typical of science, and ultimately ends with the publishing of some of the most interesting results in understanding man and his evolution. Svante is an exceptionally good writer and the tale flows quite smoothly. If one understands the science, then one can fill in the gaps and the tale is well presented. If one does not understand the science then one can still appreciate what is happening by taking the results presented at face value. The tale works back and forth from the fundamental science to the interrelationships between various players in the overall search. Svante shows how he managed to deal with the anthropologists and others to get samples of Neanderthals from as far away as Siberia. It also demonstrates some of the more cooperative nature of science as new techniques is shared and how Svante is assisted by many others who are but in related fields. The efforts span from California to Eastern Russia and it shows that in today's environment the ability to communicate changed what would have been multi-lifetime efforts into a fast paced move to provide the final answers. This book is a stark contrast to Watson's Double Helix. The Helix is a strong interplay of personalities; it portrays competitiveness and at times pettiness that is common in certain scientific endeavors. Helix was a true race, a sprint to get DNA right, and a succinct set of observations which became the underpinnings of Svante's efforts.

Some commenters here were disappointed that this book is not about Neanderthals but rather about the process of decoding the Neanderthal genome. Sorry about that - I suggest you read another

book. This book has a chapter on dinosaurs too. There are no dinosaurs in that chapter and apparently there are no dinosaurs in amber either. Pääbo explains why it's so hard to get nuclear or mitochondrial DNA from fossils 'only' tens of thousands of years old. We won't be making dinosaurs the way they did in Spielberg's movie. All that dinosaur DNA has long since degraded. One of the single deepest insights this book presents is the problem of contamination. You find an ancient fossil that has human DNA in it, and you do a PCR on it, almost all of your results will be non-human. I think he found about 98% of all the DNA in one of his samples was from various forms of contamination. If a human bone is lying on the floor of a cave, every mouse, every centipede, every critter of any kind that crawls over it and every dust particle that falls on it also has DNA. So it's not surprising that laying on a dirty floor for 20,000 years contaminates your specimen. This is really a book about the actual process of science. Pääbo is a big success for a variety of reasons. Some intellectual - he's real smart - but also social. He seems to be a good supervisor and a good person. Good people want to work with him or for him. He is very far from being a recluse locked up alone in his lab. He goes to meetings and conferences around the world where he picks up contacts that help him later on. He seems to mix well with people from all walks of life. He is very non-nerdy.

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