

***Read this blog, and you will know who the next Nobel Prize winner is!  
That's an exaggeration, of course, but...***

On the 3<sup>rd</sup> of October 2022, the research magazine Science announced that the Nobel Prize in Physiology or Medicine was awarded to the Swedish geneticist Svante Pääbo (1). He is honored for his role in establishing “Paleogenomics”, revealing the genetic past of us living today. Paleogenomics involves human evolution, genetics, ecology, and many other disciplines, also Public Health, as this blog noticed in two entries on the 19<sup>th</sup> and the 20<sup>th</sup> of August 2021. More than one year ago, nobody could predict that the founder of this science field would be a Nobel Prize winner this year. So, the headline here is an exaggeration, but it underlines the attempt of this blog to be on the pulse of scientific development. Last year's two entries, reviewing paleogenetics as a potential new fascinating field for public health, got 564 clicks, the overwhelming majority from readers approaching from the “English” site of the faculty's website.

A leading role in the development of paleogenomics must be attributed to the Max Planck Institute for Evolutionary Anthropology (EVA) in Saxonian, Leipzig, Germany. Pääbo has been the director since 1997. The present director, Johannes Krause, a former Ph.D. student of Pääbo, and author of several key papers in the field, commented that, unusually this time, only a single person got the prize by saying: “who else would you give it to?”. He referred to the many groups following the approach of Pääbo, who all are “his scientific progeny”.

In the 80<sup>th</sup>, the development of the polymerase chain reaction (PCR) and later sophisticated statistical methods made it possible to distinguish between ancient DNA and contamination from living humans. It evolved that the Neanderthals and present humans split 500.000 years ago. For about 100.000 years, both lived together and interbred with the Neanderthals. Still, our genes to 1% up to 4% can be traced back to the Neanderthal's ancestry. Their function seems related to our mood and behavior but still needs further investigation. Throughout the Covid-19 epidemic, vulnerability to the infection was found for specific population groups in England related to Neanderthal DNA.

More exciting and relevant issues are explored in detail within the Journal Club entries mentioned above. The review ended in promising to elaborate on the Denisovans, who are of significant interest to Asia. The promise was not kept, mainly because of a lack of reactions from the readers of this blog, which somehow hampered any further enthusiasm to review this topic further. The former review also didn't elaborate on Pääbo as a person. Probably, a new initiative should be taken to tell the story, such as about the finger bone fragment found in a Siberian cave, as reported in 2008.

His initial interest in archeology and the old Egyptians led to the frustrating struggles to isolate ancient material from the mummies up to results achieved and published in 1997 from mitochondrial DNA obtained from bones 50.000 years old. In 2016 he published a book about his frustrating attempts and final achievements entitled “the Neanderthal Man”. The book also gives quite intimate insight into his personality, which most probably contributed to his success. He mentioned how being awakened during the night by a coworker alerting him that an ancient gene might be discovered.

Literature:

1. Curry A. Ancient DNA pioneer Svante Pääbo wins Nobel Prize in Physiology or Medicine. Science 2022.

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