
Nobel Prize in Physiology or Medicine 2022: Understanding the past for heading to the future

 **Minh-Hoang Nguyen**, AISDL
<https://orcid.org/0000-0002-7520-3844>

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On October 3, 2022, the Nobel Prize in Physiology or Medicine 2022 was awarded to Svante Pääbo “for his discoveries concerning the genomes of extinct hominins and human evolution” [1]. Svante Pääbo is a Swedish geneticist specializing in evolutionary genetics and contributing to the foundation of paleogenetics.

Pääbo’s pioneering research enabled the sequencing genome of the Neanderthal (*Homo neanderthalensis*), an extinct relative of modern human (*Homo sapiens*) [2], and discovered Denisovan (*Homo denisova*), a formerly unknown hominin [3]. Besides, he also found that the genes of present-day humans are mixed and transferred from the extinct Neanderthal and Denisovan hominins as a result of migration out of Africa around 70,000 years ago.



Photo: Svante Pääbo, 2022 Nobel medalist; provided by Duncan.Hull (CC-BY-SA-3.0); https://commons.wikimedia.org/wiki/File:Professor_Svante_Paabo_ForMemRS.jpg

These discoveries allow us to better understand our species' origin, but it is not the only significant value. Assuming a human is an information-processing system constituted and driven by countless types of information (e.g., genomes), human society is a bigger information-processing system involving billions of individual-level systems [4-5].

Understanding how our society and we are formed by the information processes happening thousands of years ago (e.g., gene transfer, gene mixture) could shed light on the possibilities of how our society and we would evolve in the future physiologically, socially, culturally, and economically.

References

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[4] Vuong QH. (2022). [*Mindsponge theory*](#). AISDL.

[5] Vuong QH, Nguyen MH, La VP. (2022). [*The mindsponge and BMF analytics for innovative thinking in social sciences and humanities*](#). Berlin, Germany: De Gruyter.

