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## Investigation of admixture between Neanderthal, Denisova and Central and Southeast Asian populations

*Étude du métissage entre Neandertal, Denisova et les populations d'Asie centrale  
et du Sud-Est*

**Charlotte Antoine, Céline Bon, Raphaëlle Chaix, Evelyne Heyer, Romain  
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# Investigation of admixture between Neanderthal, Denisova and Central and Southeast Asian populations

*Étude du métissage entre Neandertal, Denisova et les populations d'Asie centrale et du Sud-Est*

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- 1 When our species left Africa about 100,000 to 70,000 years ago, it encountered new environments. Our ancestors also met other hominins that had already been established in Eurasia for tens of thousands of years: Neanderthals and Denisovans. Thanks to paleogenetics, we now know that admixture events occurred between these species and ours, leading to the introgression of archaic haplotypes into the genome of the ancestors of present-day Eurasian populations. Most studies interested in the admixture between our species and archaic hominins focused on Western European, East Asian, and Oceanian populations. These studies showed that these populations possess between 1% and 4% of their genome inherited from Neanderthals and that Oceanian populations also have up to 6% of their genome inherited from Denisovans. Surprisingly, the extent of admixture with archaic populations remains largely unknown for Central and Southeast Asian populations despite their significance in addressing questions related to archaic admixture. Indeed, these populations inhabit border regions with East Asian and Oceanian populations. Moreover, archaic hominin fossils suspected to be Neanderthal or Denisovan were excavated in areas where current Central and Southeast Asian populations reside. Therefore, in this project I investigated traces of interbreeding between Neanderthals, Denisovans and the ancestors of present-day Central and Southeast Asian populations. Preliminary results indicate that a gene flow occurred between Neanderthals and Central and Southeast Asian populations. Central Asian populations inherited ~1.8% of their genome from Neanderthal while Southeast Asian populations inherited ~2.1%. The results concerning the estimation of Denisovan's gene flow indicated that the statistics

used to investigate these questions are very sensitive to the list of variable genetic positions used in the analysis. Therefore, further analyses are needed to uncover potential events of admixture between Denisovans and Central and Southeast Asian populations.

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## AUTEURS

### **CHARLOTTE ANTOINE**

Unité Éco-anthropologie (EA) UMR 7206, MNHN, CNRS, Université de Paris, Musée de l'Homme, Paris, France ; charlotte.antoinederouet[at]gmail.com

### **CÉLINE BON**

Unité Éco-anthropologie (EA) UMR 7206, MNHN, CNRS, Université de Paris, Musée de l'Homme, Paris, France

### **RAPHAËLLE CHAIX**

Unité Éco-anthropologie (EA) UMR 7206, MNHN, CNRS, Université de Paris, Musée de l'Homme, Paris, France

### **EVELYNE HEYER**

Unité Éco-anthropologie (EA) UMR 7206, MNHN, CNRS, Université de Paris, Musée de l'Homme, Paris, France

### **ROMAIN LAURENT**

Unité Éco-anthropologie (EA) UMR 7206, MNHN, CNRS, Université de Paris, Musée de l'Homme, Paris, France

### **BRUNO TOUPANCE**

Unité Éco-anthropologie (EA) UMR 7206, MNHN, CNRS, Université de Paris, Musée de l'Homme, Paris, France