

INVESTIGATING NEOLITHIC SOCIAL STRUCTURES ON THE BASIS OF UNPRECEDENTEDLY LARGE FAMILY TREES FROM THE SITE GURGY “LES NOISATS” IN FRANCE

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The elucidation of kinship structure in past societies has been at the center of intra-group studies in archaeology and anthropology. However, the reconstruction of genetic relatedness in archaeological contexts has rarely been feasible. With the development of ancient DNA methods, it is now possible to obtain genome-wide data for multiple individuals from a single group, even in the presence of poor DNA preservation. Here, we present new data from the Middle Neolithic French site of Gurgy “les Noisats”. Thanks to an extensive sampling and use of the 1240K capture array, we obtained genomic data for 94 out of 128 individuals. We reconstructed two large pedigrees, one of them spanning seven generations and connecting 62 individuals. These unprecedentedly large genealogies allowed us to look beyond the immediate genetic relatedness, and to explore the potential social structure of the group, its size, and its funerary and mobility practices.

We observed a strong patrilocal and patrilineal system with a single male lineage for the main family. The group practiced female exogamy, as no adult daughters were buried at the site (except for three females), and all mothers in the pedigree (except one) came from genetically-unrelated external groups, suggesting a wide regional network.

Accompanying Strontium analyses confirm the non-local origin of adult females, but also reveal a non-local signature of the first-generation founders of the site. Biological relatedness reveals a spatial organization of the graveyard, showing chronological and nuclear family groupings that were not visible through archaeological elements. The seven-generations pedigree also allowed us to constrain the chronological range of the site use and led us to propose a narrower occupation phase.

In the case of Gurgy, biological relatedness opens a previously inaccessible window into the Neolithic and provides numerous insights into the social structure of this group.

Keywords

Neolithic, ancient DNA, large pedigrees, social insights

Note/comment

I would like to add one author, as we are actually a team of eleven people and each of us participated to this work. Then I would like to add in the 4th position:

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Thanks for your consideration.