

POPULATION DYNAMICS INFERRED FROM SUMMED PROBABILITY DISTRIBUTIONS OF RADIOCARBON DATES DURING THE 5TH MILLENNIUM BCE IN THE LOWER DANUBE REGION

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Past population dynamics play a key role in integrated models of understanding socio-ecological change over time. However, despite the importance of deciphering population change through time, little analysis on this issue has been carried out for the prehistoric societies in the Lower Danube area. Here, we use summed probability distributions of radiocarbon dates (SPDs hereafter) to investigate potential regional and local variation in population dynamics.

Our study adopts a formal model-testing approach to the fifth millennium BCE archaeological radiocarbon (¹⁴C) record, performing a region-wide, as well as a comparative analysis of the demographic trajectories of the area astride Danube river. We follow the current backdrop of theoretical models of population growth and controlling for taphonomic loss, sampling biases and errors, and perform global and regional significance and spatial permutation tests on the data.

Specifically, we investigate whether populations astride the Danube follow a logistic pattern of steady growth or an exponential growth followed by a major decline over time. Finally, our analysis of local-scale growth will investigate whether considerable heterogeneity or homogeneity within the region may be observed over the timespan considered here. The results will help us understand how similar or different the population trends were across the area.

Our findings will be displayed in relation to the cultural characteristics that the Middle Holocene societies in the region experienced within the timeframe under scrutiny, and some future research directions will be also suggested.

Keywords

Population dynamics, Radiocarbon, Lower Danube, Fifth Millennium BCE, Middle Holocene

Note/comment

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