Landscapes and Paleolandscapes in south-eastern Europe during Late Quaternary and their relevance for human habitats and dispersal

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Pleistocene landscape dynamics affect climatic and environmental conditions, and may have had a major impact on modern human habitats. In this contribution, reconstructions of modern and late Pleistocene environments based on landscape evolution models are presented and discussed following a series of transects from the Pannonian Basin to the Black Sea. These transects include geomorphological features and landscapes like loess plateaus, dune fields, alluvial plains, the Carpathian Mountains, and their foothills. To enhance our understanding of anatomically modern human (AMH) habitats, transects of paleo-landscapes from the Carpathian Basin to the Black Sea coast are investigated, focussing on a time-interval of ca. 30,000-40,000 years ago and the last glacial maximum. These transects include important landscape features, such as the ones mentioned above, and their geoarchives. These geoarchives serve as important proxies for ongoing research investigations. We understand such a transect as data visualization over a wider region, following a west-east direction and a (paleo)climatic gradient. As data visualization, the presented landscape model must extrapolate on existing data, and is therefore partly artistic by its nature.

In the West, the Pannonian Basin and its landscape mosaic (loess, alluvial plains, terraces, dune fields) is visualized, followed towards East by the Danube gorges cutting through the Carpathian Mountains, including the foothills west and east of Iron Gates. East of the Carpathians, in the Lower Danube area, the alluvial plains and terraces of the Danube and its tributaries are currently the dominating features on the landscape. However, north and south of the Lower Danube plain, the Carpathian and Balkan mountain ranges present a different environment, which is of major importance for better understanding more recent environmental changes and related landscape evolution. During the last glaciation, this dependence may have been even more important, especially through strong seasonality of rainfall and therefore of glacial meltwater runoff, that had an impact on discharge rates of main river systems in the region.

We compiled such a transect as data visualisation over a wider region, following a west-east direction, likely along a former (paleo)climatic gradient. With the data visualisation algorithm employed, the landscape evolution model extrapolates on existing information and brings forward novel insights, being therefore rather innovative in nature. Moreover, results from ongoing sedimentological and paleoclimatic research on several important sites in the Pannonian Basin and the Lower Danube area are presented. In addition, an upland-lowland environmental model highlighting the most important paleoclimatic and habitational

constraints for successful peopling of this region by anatomically modern humans (AMH) during Late Pleistocene (i.a. water availability, food availability, biodiversity, raw material availability) are further proposed. We suggest the foothills of the mountain ranges and terraces of Danube tributaries having been preferential habitats for AMH at the time of their arrival and dispersing throughout south-eastern Europe.