Holocene landscape instability in the context of a loessic early Upper Palaeolithic open-air site in the Middle Danube Basin

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The palaeoanthropological record of Western Romania is a prime archive of the early modern human presence in Southeastern Europe. Regional stratified early Upper Palaeolithic open-air and karstic sites enable us to infer temporal and spatial patterns of early modern human behaviour in various geomorphological settings. However, open-air sites are often prone to reworking processes caused by local landscape instabilities. The pristine archaeological and palaeoenvironmental stratigraphic evidence is often overprinted by fluvial and slope processes. Therefore, heavily reworked sites are often neglected by researchers. Nevertheless, reworked archaeological and sediment sequences are crucial archives of landscape evolution because they record fluctuations in subsequent erosional and depositional phases. Here, we present the results of a multi-proxy geoarchaeological investigation of the Upper Palaeolithic site of Temerești Dealu Vinii. This site is located in the Bega Valley, a well-known area for early Upper Palaeolithic open-air localities. Despite the identification of various Upper Palaeolithic cultural units, the artefacts show no discernible horizontal or vertical distribution patterns and stratigraphic inconsistencies. Geochemical and granulometric data aided by luminescence and radiocarbon dating as well as stratigraphic evidence suggest a sub-continuous hydrological sorting over short transport distances during the Holocene. Consistent luminescence ages and characteristics suggest that erosion and deposition occurred sub-continuously during this period. This record of landscape dynamics is consistent with other archives from the area that show evidence for anthropogenically induced phases of soil erosion during the Holocene. This study highlights the importance of reworked archaeological sites such as Temerești Dealu Vinii not only as viable archives of human presence during the Late Pleistocene – but also as valuable records of subsequent landscape evolution. Detailed analyses of post-depositional disturbances of archaeological sites enable us to improve the accuracy of early modern human behavioural interpretations, and to better contextualise sites such as Temerești Dealu Vinii within the assemblage of both “in-situ” and reworked loessic Upper Palaeolithic localities in the Danube Basin to evaluate the importance of palaeogeography for human occupation.