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# Qualitative and quantitative experimental data for understanding functional biographies of quartzite macro tools from Mesolithic Danube Gorges

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## Abstract

The Danube Gorges region in the Central Balkans represents one of the key areas for studying late Pleistocene and early Holocene human adaptations. Numerous archaeological sites discovered along the banks of the Danube River yielded crucial evidence for understanding local forager lifeways and mortuary practices during the Mesolithic as well as changes occurring with the arrival of farmers in the region at the end of the 7th millennium cal BC. Taking into account material culture, grinding and pounding tools could represent an important source of information for exploring modalities of food processing and daily life activities as well as technological changes throughout time, due to the long-life histories of macro-tools. Such artefacts are particularly abundant at all the Mesolithic sites of the Danube Gorges region. Also, their functional analysis confirmed the extraordinary preservation of organic residues and functional modifications on their surfaces and the use of groundstone technology in key daily life activities related to animal and plant food processing. Experimental archaeology along with the analyses of use wear and residue represent a fundamental means for testing functional hypothesis and understanding tools' role in the life of ancient human groups. In this presentation we discuss the results of a specific experimental framework designed upon the functional data available for the assemblage of quartzite macro tools from the site of Vlasac. We propose a novel methodology combining quantitative and qualitative approaches. Specifically, surface modification and residue distribution, associated with the utilisation of quartzite macro tools in processing plant, animal and mineral matters have been analysed applying a range of quantitative surface measurement techniques performed at macro and micro scales, coupled with the qualitative analysis of use wear and residue observed at low and high magnifications. Through our experimental framework we were able to evaluate the efficiency of quartzite macro tools in performing a variety of activities and in the processing of organic and inorganic matters. Moreover, the use of experimental macro tool replicas allowed to build a solid use-wear and residue comparison collection including both qualitative and quantitative data. Our results highlight the multipurpose role of groundstone

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tools at Vlasac and suggest their relevance within the daily life activities carried out at the site.

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