Palaeolithic Populations in Armenia and Turkey: Expanding Archaeological Understanding

Reporting

Project Information

PLATEAU

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Final Report Summary - PLATEAU (Palaeolithic Populations in Armenia and Turkey: Expanding Archaeological Understanding)

Understanding the population dynamics and patterns of dispersal of our Pleistocene ancestors, or hominins, is central to the study of human evolution. However, the Pleistocene hominin fossil record is sparse, and therefore more prevalent material culture evidence needs to form the basis of such research. A hindrance is that crucial areas of Eurasia still lack well documented and dated archaeological sites and artifact assemblages. Turkey and Armenia comprise one such area, located at the pivotal juncture of Africa and Eurasia. Current fossil evidence indicates that hominin populations were present in the southern Caucasus and SW Turkey by c. 1.85 and 1.6 million years ago respectively. However, archaeological evidence of occupation of this area increases in later periods, notably during the Middle Palaeolithic (MP) (c. 400,000 – 40,000 years ago). The main objectives of the PLATEAU project are to add to the MP archaeological database in this research area through survey, excavation, and artifact

analysis and to place new data in a regional chronological framework. Another objective is to conduct comparative analysis of artifact assemblages from two physiographic zones in Armenia and Turkey, and investigate the potential for regionally distinct patterns in stone tool technology that may provide insight into larger-scale, population-level processes.

To achieve the project objectives, surveys were undertaken in northeastern Turkey to document the preservation of Pleistocene landscapes of hominin occupation. Excavations and artifact assemblage analyses were carried out at the site of Barozh 12 in western Armenia to collect data on MP technology, land use behaviors, and hominin lifeways. Artifact assemblage data from this site was then compared with those from the Central Anatolian Volcanic Province (CAVP) to investigate regionalized patterns of stone tool manufacture, and their implications for hominin population dynamics. Transfer of knowledge and building multi-national, multi-disciplinary collaborative research networks were essential to the project's endeavors.

With colleagues based in the UK, Europe, and Turkey, the fellow participated in geological surveys in the upper Kura River catchment in northeastern Turkey. These surveys identified and documented landforms with high potential for the preservation of Pleistocene-age deposits which likely contain Palaeolithic artifacts. This work initialized the establishment of a Pleistocene geomorphological framework for the investigation of Palaeolithic archaeology in this understudied area.

The fellow co-directed excavations at the site of Barozh 12 in Armenia with a multi-disciplinary team of collaborators from Armenian, European, British, and North American institutes (Figures 1 – 4; all figures are found in attached pdf 1). At a northeastern part of this c. 6000 m^2 open-air site, 4.85 m^3 of excavated sediments yielded 17,317 MP obsidian artifacts from five stratified layers (3571 artifacts/ m^3). This extremely high artifact density provides an exceptional source of data on technological behaviors and land use.

The results of excavations at Barozh 12 indicate that occupations were situated in a flood plain setting at the interface of the Ararat Depression paleo-lake environment to the south, and the foothills of volcanic mountains to the north. As shown by the high density of artifacts, close access to water, flora, fauna, and obsidian raw materials made the location attractive to MP hunter-gatherers. Pending results of chronometric, geoarchaeological, and paleo-environmental analyses will provide the age and duration of site occupations and refine our knowledge of their depositional and environmental context (Figure 5).

Analysis of the stone tool assemblages from Barozh 12 shows consistent artifact manufacture and tool modification techniques throughout the excavated sequence, with an emphasis on the production of triangular points from prepared Levallois cores (Figure 6). The assemblages are similar in this regard to dated MP sites in Armenia that span an age range of c. 100,000 – 30,000 years ago. Artifact manufacturing techniques so far observed in Armenia are also similar to those that are dominant in MP assemblages found in the Levant, Iran, and Georgia.

Results of technological and metric analysis of the Barozh 12 artifact assemblages indicate changing focus on artifact manufacture vs. tool use and discard over time, and the transport of tools and large flake blanks to the site alongside local artifact manufacture. Obsidian raw material sourcing analysis on a sample of artifacts shows predominant use of locally available obsidians (c. 1 – 2 km), but also artifact

sample of artifacts shows predominant use of locally available obsidians (c. 1 – 2 km), but also artifact transports from a variety of obsidian source areas at maximum observed distances of c. 180 km (Figure 7). Together, these results suggest that MP hominins practiced variable modes of mobility and tool provisioning strategies in an obsidian raw material-rich area. The results more generally demonstrate diachronic flexibility and dynamism in land use and mobility, but regularity in technology at this 'persistent place' in MP land use systems. Taking into account data from other MP sites in the Armenian Highlands suggests long-standing, regionally conscribed patterns of artifact manufacture technology and technological organization.

The CAVP and the Armenian study area are separated by topography and distance (c. 800 km). In both regions, obsidian was utilized intensively for tool making throughout the MP. Comparison of obsidian artifact manufacture techniques between these regions showed significant variability that is not related to raw material differences. The Armenian assemblages including Barozh 12 are dominated by the production of points using the unidirectional-convergent Levallois reduction technique, while this has not been observed in the CAVP. The CAVP technological evidence appears isolated from the emergent pattern of technological similarities among the Levant, Iran, and the southern Caucasus.

The results of this study support the hypothesis that if artifact production techniques are learned and transmitted across generations, then long-standing, regionally variable patterns in such behavior may indicate relatively contemporaneous, but isolated MP hominin populations. As opposed to unidirectional models of hominin dispersal, the developing pattern of regionalized technological variability is more consistent with dynamics associated with metapopulations that include multi-directional dispersals and geographically isolated subpopulations. Since Palaeolithic research is at an initial stage in the project study area, further research including artifact analysis and dating of more sites and artifact assemblages from this and other regions will continue to evaluate this pattern.

Dissemination activities transferred knowledge about project research in the international academic community, and at the host institution. Preliminary results were presented in publications, conferences, and public events in Europe, the US, Georgia, and Armenia. At the host institution in Turkey, the fellow organized an international workshop that – for the first time – brought together local and international scholars working on the Palaeolithic of Turkey and Armenia to share their current research. The workshop was well attended by students and scholars based in Turkey.

The PLATEAU project expanded and enriched multi-disciplinary collaborative relationships among European, American, Armenian, and Turkish colleagues. The final results of this project will show that by establishing chronological and contextual control coupled with detailed stone tool technological analyses at the site- and regional-scales, we can begin to address broader, continental-scale questions on MP hominin population dynamics and how these may be expressed in evidence from durable and prevalent stone artifacts. The research conducted in this project significantly impacts the study of human evolution, as it generated new archaeological data in an understudied and pivotal region, utilized such data to document regional MP hominin lifeways, and contributes to the study of the complexities of Pleistocene hominin population dynamics and dispersals.

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