

Neanderthals lithic toolkits in high mobility context: an overview from Teixoneres Cave (Spain)

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Studies on lifestyle of modern hunter-gatherers have provided pivotal insights on the human land use and the strategies applied for the acquisition of resources [1]. Climatic and ecological settings are two of the main causes influencing the productivity of the environment and, therefore, the mobility and dispersal of foragers groups. Generally, in territories with relative scarce biotic resources hunter-gatherers tends to move frequently whereas, in plentiful environments, they are less mobile and tend to camp near ecotones where resources from several habitats can be gathered at the same time [1]. In hunter-gatherers, carrying capacities are limited and the patchy distribution of food sources affects greatly the composition of the toolkit. In high mobility context, the personal gear of foragers groups should emphasize portability and limit the material waste. Several researches investigated the patterns of artefacts mobility and transport during the Middle Paleolithic [2][3]. These data indicate that, within retouched tools, flakes and cores were also moved from the place of production showing a high flexibility in how Neanderthals organize their technology during the displacements across the territory, and minimize the risk of shortage of lithic gears. Generally, these transported artefacts are isolate items or stone tools produced in allochthonous raw materials. However, the recurrent use of local and semi-local raw materials by Neanderthals could hamper the accurate identification of the toolkit composition because some transported items could be interpreted as part of the knapping events carried out at the site. This paper aims to explore the Neanderthals mobile toolkits from unit III of Teixoneres Cave (Moià, Spain), radiocarbon dated from >51,000 to 44,210 cal. BP (68.2%) [4]. Multidisciplinary studies on the archaeological record indicate that Neanderthals settlements at the site were of short-term and space out by the visiting of carnivores, mostly hyenas [5]. Preliminary surveys of the raw material distributions indicates the presence of cobbles of quartzite, sandstone and quartz found in secondary context in the nearby Mal stream, whereas outcrops of chert, limestone, hornfels and quartzite are found in primary and secondary positions at ~ 10-15 km east of the site. Other sources of quartz and chert in secondary contexts are located at ~ 8 km south and at ~ 15 km northwest of the cave. The technological analysis on the lithic assemblages of unit IIIa and IIIb reveals the use of two main strategies. Prepared core technologies and curated artefacts are common in chert and metamorphic rocks whereas the local quartz nodules are exploited opportunistically using the *tranche de saucisson* method. These different approaches in the reduction of the raw materials allow a clear differentiation between the artefacts of the mobile toolkit and the lithic items used during the domestic activities. The reconstruction of the operative chains in chert and metamorphic rocks reveal the transport at the site of flakes, retouched tools and configured cores that were used on site for short knapping sequences. The amount of cortical items is very low suggesting that the early phases of core configurations occurred in other locations. This pattern in raw material transport and exploitation is very different from the neighboring Middle Paleolithic sites where bigger amounts of chert nodules are transported inside the natural shelters. The study evidences also the production of pointed blanks on local quartz and the frequent import of Mousterian points and convergent tools. These latter artefacts are rare in the Northeast of the Iberian Peninsula indicating an extended network with groups from the northern Pyrenees and southern France.

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