
Something new in the quivers: experimental approach to functioning of the Late Mesolithic and Early Neolithic geometric bitruncations

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Abstract

During the 7th and 6th millennium BC, a major cultural change took place in Mesolithic societies. Particularly perceptible in the lithic industries, this technological and stylistic rupture spread in the western basin of the Mediterranean and then affected most of Western Europe. The changeovers occur at different levels, including the introduction of the pressure knapping technic and the indirect percussion and the adoption of trapezoidal shaped microliths, manufactured on the regular blades using the *microburin* technique. Probably echoing changes in the different registers - technical, economic, social or symbolic - of the hunting system, these new arrowheads shapes reflect functional roles which are still under-explored.

In this poster, we present the results of a projectile experimental program performing in order to characterize and interpret this new conception of the wounding tip of the arrow. Centered on the Late Mesolithic (Castelnovian) but with extensions in the Early Neolithic (Impressa/Cardial), it has enabled the creation of a large-scale reference collection by the implementation of experimental shooting sessions following different protocols, archery session on animal target and parametric shooting session on a ballistic gel with automated bench. On the one side, we got a model of macro and micro-impact damages as well as on symmetrical and asymmetrical bitruncations according to their shape and their mode of hafting (transverse and piercing tip hafting) but also on bones. Through systematic research of the link between the wear on the arrowhead and on bone, one of the objectives was to assess how the nature of the impacted skeletal element and the angle of penetration of the arrow into the carcass, affect the type and the intensity of damage to lithic projectiles. On the other side, we have obtained some initial data on the behavior of the projectile (trajectory, damage, detachment....) and evaluate the performance and the wounding efficiency of different arrows, in term of penetration depths and damage to gelatin (laceration, tearing, etc.).

At last, this experimental program and traceological approach, provide an analytical tool for a better understanding of the mechanisms of projectile changeovers and their typological diversity, through a detailed analysis of their use and a reading beyond their shape.

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