
Transversal arrowheads of the Mesolithic in Brittany: functional approach through a ballistic experiment

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Abstract

European Mesolithic has been traditionally defined through the arrowheads, very often geometrical microliths. Among other technical traditions, trapezoidal bi-truncations are known in different Mesolithic assemblages, such as the Tévécian (Brittany, France). While the use of the symmetrical trapezes as transversal arrowheads is nowadays largely accepted, these bi-truncations have also been subject of various functional debates and experimentations. The present study aims to a better understanding of the functioning of transversal arrowheads armed with trapezoidal bi-truncations documented in tévécian contexts through an experimental perspective. We wonder if the weight of the arrow is a critical parameter in the fly and the penetration of these arrows. Moreover, we wonder if the impact wears of the trapezoidal bi-truncations of Beg-er-Vil (Quiberon, France) can allow us to assess more details of the function of these arrows during the Mesolithic.

An analytical experimentation was implemented to answer these questions. 50 trapezoidal bi-truncations were reproduced, armed as transversal arrowheads in 2 types of wood shafts, and thrown into a *Sus scrofa* corpse, previously beaten, with a 52 lb. longbow. Lately, the impact wears of the experimental bi-truncations were analyzed and compared with those observed in the Beg-er-Vil corpus. In particular, the initiation of the fractures (bending or cone initiation) was considered as a proxy to evaluate the toughness of the impacted matter. The results of these experimental work and the analysis of the archaeological material has allowed to increase the knowledge about the ecological and technical practices of the Holocene hunter-gatherers in the European Atlantic coastline, and to understand how these groups interact with their environment, both terrestrial and marine.

Keywords: Mesolithic, transversal arrowheads, ballistic experimentation, use, wear

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