TOWARDS A REFERENTIAL FRAMEWORK FOR THE IDENTIFICATION OF PROJECTILE POINTS AND PROPULSION MODES

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Abstract

Palaeolithic weapons and hunting practices have fascinated researchers since the beginning of the discipline and many efforts have been invested in tracing these back in time. Insight in projectile technology is indeed highly relevant for understanding broader technological evolutions, subsistence strategies and behavioural variability. However, accurate identification of weapon elements in archaeological assemblages as well as adequate insight into the design and use of weapons has proven difficult and has constituted an important methodological challenge for the field from the start. These difficulties stem from the high number of parameters that intervene in the case of an impact motion and that may affect the formation of fractures on stone points. Moreover, if one aims to not only identify projectile points, but also to approach propulsion modes, the issue becomes even more complex. Resolving this type of challenge necessitates a complete decomposition of the problem and simultaneous work on each of the different aspects. Such a structured approach permits to isolate the key parameters in the impact fracture phenomenon and to understand their interaction, but it needs to be nourished from different disciplines, including experimental archaeology, fracture mechanics, traceology and ballistics. A large-scale experimental program lies at the basis of this type of approach.

We will present how such a large-scale projectile referential framework was gradually build up at TraceoLab trough systematic controlled experimentation and how it serves as a basis for the identification of archaeological projectiles and propulsion modes in combination with data derived from fracture mechanics and ballistics. We discuss how we will further exploit this reference collection in view of an improved understanding of the evolution of projectile technology in the Palaeolithic period.

Keywords: Palaeolithic; stone projectiles; mode of propulsion; ballistics; fracture mechanics