Rock and Roll:
13th International Symposium on Knappable Materials

Multi-scalar Characterization of Raw Materials

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Edited by
Bruno Gómez De Soler, María Soto,
M. Gema Chacón & Miguel Soares Remiseiro

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Fracture mechanics and the identification of projectiles: what is the influence of raw material?

Coppe, Justin [1], Taipale, Noora [1], Rots, Veerle [2]

[1] TraceoLab/Prehistory, ULiège, Quai Roosevelt 1B, 4000 Liège, Belgium
[2] Chercheur Qualifié du FNRS, TraceoLab/Prehistory, ULiège, Quai Roosevelt 1B, 4000 Liège, Belgium

Justin.Coppe@uliege.be; noora.taipale@uliege.be ; veerle.rots@uliege.be

Impact fractures are a complex phenomenon controlled by many parameters, including the physical properties of the lithic raw material. In projectile studies, the influence of raw material has been regularly underestimated and even considered irrelevant by some researchers. However, research into the fracture mechanics of brittle solids performed since the 1970s presents raw material as one of the main parameters which affect the propagation of a crack inside a brittle material. Further work on fracture mechanics of brittle solids for archaeological application seems to have been on hold since the beginning of 1990s. Given that new analytical tools have been developed in the meantime, it is perhaps time to reopen the discussion, especially when we consider the importance of fracture mechanics for the identification of projectile points and the understanding of projectile technology. Therefore, we carried out a pilot experiment with a universal testing machine to examine how a set of different raw materials react to standard mechanical stress (simulating the stress developed during projectile impact). We present the results of this experiment and reflect on their implications for future work aimed at identifying projectiles in archaeological assemblages.

12. USE-WEAR ANALYSIS: THE SAME PROTOCOLS FOR DIFFERENT MATERIALS?
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