

The Cerutti Mastodon site and experimental archaeology's quiet coming of age

Metin I. Eren^{1,2,*} & Michelle R. Bebbler¹

Let us begin simply: the criticisms of Magnani *et al.* (2019) and others (e.g. Braje *et al.* 2017; Haynes 2017, 2018; Ferraro *et al.* 2018) regarding the Cerutti Mastodon site are valid and convincing. Regardless of whether Holen *et al.*'s (2017) study should have been published in *Nature*—or anywhere else (e.g. Curwen 2017)—the scientific process has done its job. Advocates of 130 000-year-old boulder-wielding, bone-cracking SoCal [southern Californian] hominins now have their work cut out for them. Until that work is robustly completed, evaluated and replicated, there is no reason for archaeologists who study the peopling of the Americas to incorporate the Cerutti Mastodon site into their New World colonisation frameworks.

In the case of the Cerutti Mastodon site, we, of course, agree with Magnani *et al.*'s (2019) critique of the use and abuse of experimental archaeology. Indeed, as experimental archaeologists ourselves, we are heartened by the near-unanimous reaction against Holen *et al.*'s (2017) conclusions; we suspect that it is indicative of an increasingly refined, discipline-wide understanding of how archaeological experiments should be conducted, how they should be integrated into archaeological research and the nature of inferences that can be made from different types of experiments. In other words, perhaps Holen *et al.*'s (2017) experiments appeared so jarring to modern archaeologists because the experiments were so removed from modern experimental practice in archaeology. When exactly experimental archaeology experienced this quiet 'coming of age' can, of course, be debated—and there are always areas in which experimental archaeologists can improve to mature the field still further (Eren *et al.* 2016; Lin *et al.* 2018). At some point in the last two decades, however, the concepts discussed by Magnani *et al.* (2019) have become vital, customary—and even routine—considerations in the design and execution of archaeological experiments (e.g. Outram 2008; Lycett & Chauhan 2010).

Magnani *et al.* (2019: 793) thank Holen *et al.* (2017) for “making extensive supplementary data available for their project, including videos and three-dimensional models, which will prove beneficial for further evaluation of the Cerutti site”. Magnani *et al.*'s (2019) criticism, however, makes perfectly clear that supplementary videos and data, three-dimensional models, the use of 'high-tech' gadgets and, indeed, the very act of replicating artefacts are nothing more than parlour tricks, unless in the service of a testable question with a structured

¹ Department of Anthropology, Kent State University, Kent, OH 44242, USA

² Department of Archaeology, Cleveland Museum of Natural History, Cleveland, OH 44106, USA

* Author for correspondence (Email: meren@kent.edu)

and robust research design. Like it or not, the future of archaeology is largely experimental (cf. Surovell *et al.* 2017); Magnani *et al.*'s (2019) article helps to ensure the rigour with which experimental archaeology must proceed.

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