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ABSTRACT BOOK

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The use of elephant bones for making Acheulian handaxes

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The archaeological record reveals that Lower Paleolithic (LP) early humans exploited elephants by hunting or by collecting carcasses apparently for meat consumption and possibly for utilizing bone marrow over the three continents of the old world and for hundreds of thousands of years (e.g. Ben-Dor et al., 2011; Anzidei et al., 2012; Rabinovich et al., 2012; Saccà, 2012). In some cases elephant bones were exploited for the manufacture of artifacts that closely resemble Acheulian stone handaxes (Rabinovich et al., 2012; Saccà, 2012; Beyene et al., 2013).

This study examines Lower Paleolithic archaeological assemblages from Africa, Europe and the Levant, containing tools made of elephant bones. Special attention will be given to bone bifacial tools (handaxes) that resemble the characteristic Acheulian stone bifaces (Fig. 1).

The aims of this study are to update and summarize the available evidence of elephant bone tool manufacturing in the Acheulian, analyze the patterns of the elephant bone industry compared to the stone tools industry and to bone industries based on other taxa at the sites, and finally to address the question whether LP elephant bone handaxes were manufactured solely for functional purposes or whether cultural and/or symbolic properties could be reflected by the production of handaxes from elephant bones. We focus on the association of stone and bone bifaces at particular Acheulian sites, and suggest a new perspective regarding the exclusive correlation between handaxes made of the two raw materials at these sites. LP sites with elephant remains in association with lithic tools but without the use of elephant bones in tool manufacturing present another interesting aspect of this phenomenon.

Stone LP bifacial tools have been a focal issue of research during the last century. The purpose of manufacturing handaxes has long been debated, as well as its probable cultural and social significance. Some researchers claim that handaxes are efficient in animal butchering practices and wood working (e.g. Dominguez-Rodrigo et al., 2001; Machin et al., 2007), while others wonder why early humans invested in symmetry of those items and their peripheral flaking if it is possible to cut and disarticulate animals with chopping tools and flakes. An over-investment in the aesthetic aspect would be very conspicuous and several theories of symbolic and social meaning of these tools have been raised (e.g. Kohn and Mithen, 1999). It is our working hypothesis that the significance of the Acheulian stone bifaces might be relevant for a better understanding of the bone bifaces as well, and thus we would like to discuss the bone bifaces in light of the plethora of data and interpretation related to the Acheulian stone bifaces.

Ethnographic studies reveal that contemporary human-elephant relationships were not established solely on hunting/scavenging activities, meat consumption and tool manufacturing, and there are numerous examples of the deeply symbolic and cosmologic meaning of elephants to people (e.g. James, 1988, pp 50; Kuriyan, 2002). Taking the ethnographic evidence with caution, we will present a combination of the different data sets presented above in order to suggest a new understanding of the use of elephant bones in Acheulian tool production and discuss



Fig. 1. A biface made on an elephant bone from the Middle Pleistocene site of Fontana Ranuccio, Italy. Modified after Mussi, 2005.

its implications on reconstruction of human-elephant relationships in the Lower Paleolithic.

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