

An Acheulian figurine from Morocco

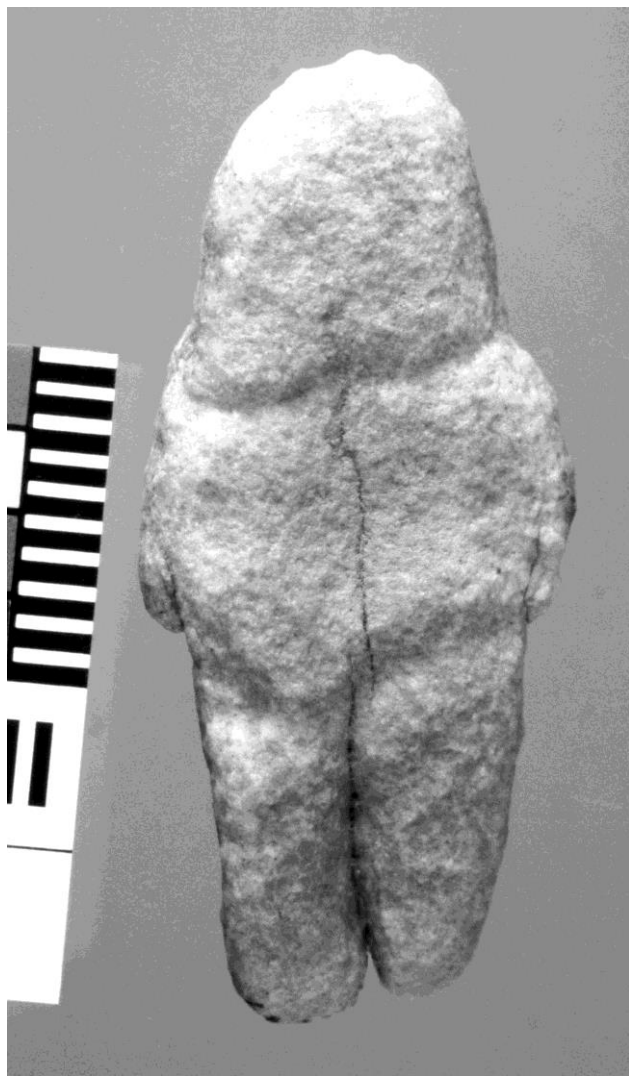
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Ever since the Berekhat Ram figurine has been reported in 1986, the ability of Lower Palaeolithic hominids to perceive three-dimensional iconicity and to produce sculptures has been the subject of speculation and debate (Goren-Inbar 1986). Excavated in summer 1981 in the northern Golan Heights of Israel, this naturally shaped but humanly modified basaltic tuff pebble is from an occupation deposit comprising some 6800 Acheulian lithics. Its clay matrix is sandwiched between colluvial and alluvial layers that are themselves bracketed by two dated basalt flows, about 470 and 233 ka old respectively (Feraud et al. 1983). The object has the natural form of a female human torso, arms and head, and debate about it has focused on the question of whether the lines emphasising the 'arms' and the deeply cut groove around the 'neck' are anthropogenic or not (Chase and Dibble 1987; Davidson 1990; Bednarik 1992, 1995; Pelcin 1994; Goren-Inbar and Peltz 1995; Noble and Davidson 1996: 75; Marshack 1996, 1997). The issue is of fundamental importance to questions of cognitive archaeology, including the subject of the earliest art-like products on this planet.

Although the issue of the grooves on the Berekhat Ram object was essentially resolved by d'Errico's recent critical re-analysis (d'Errico and Nowell 2000), which failed to falsify previous findings that the pebble was

modified by human action, there remained one crucial argument against its general acceptance. The object remained the sole available representative of a category of artefacts, and archaeology tends to be uncomfortable with accepting unique finds. Therefore the discovery of a second and surprisingly similar Acheulian anthropomorphic stone figurine is of considerable relevance. The Tan-Tan figurine was found by Lutz Fiedler, state archaeologist of Hessen, in a sectioned major Acheulian layer near the town of Tan-Tan, southern Morocco. Fiedler, Germany's foremost specialist on Lower Palaeolithic stone tools (especially of the Acheulian), collected numerous lithic implements from the exposure, and recovered the tiny figurine from the same stratum in situ, only centimetres from the nearest handaxes. While the shape of the quartzite object suggests the involvement of iconic recognition (its status as a probable manuport has been accepted in Kuckenburger 2001, the first published mention of the find), Fiedler sought clarification of its possible artefactual status, and asked me to examine the object for this purpose. I conducted a thorough microscopic analysis of the Tan-Tan figurine in October 2001, which included also a comprehensive study of twenty-three accompanying lithics. The results of this work are presented here in a preliminary form. A detailed technical report and discussion of the implications of this significant find is in preparation.

Figure 1. 'Back' of the Tan-Tan quartzite figurine, Middle Acheulian, Morocco.



The Tan-Tan figurine is 58.2 mm long, maximal 26.4 mm wide and maximal 12.0 mm thick. It consists of a moderately metamorphosed quartzite, patinated to between reddish yellow and light red on its underside, while its upper surface is of a light red (designations as per Munsell colour charts). Moderately rounded and slightly frosted quartz grains in the 0.10-0.25 mm fraction predominate. Like all stone artefacts from the same horizon, the figurine is slightly patinated and may have remained exposed for some time before it became covered by sediment. Like the lithics it was encrusted by carbonate and there can be no doubt that it comes from an undisturbed and well-stratified deposit. The accompanying implements are clearly of the Middle Acheulian, free of Levallois elements, and this stratum is underlain by a Lower Acheulian, and followed by further sedimentation. Further up in the profile this is truncated by fluvial erosion, an event followed by the deposition of a substantial Middle Palaeolithic layer. Currently there is no radiometric or other dating available from the site (to be attempted in due course), but the lithic typology, which is well established in the region (Fiedler 1995, 1998), provisionally suggests an age of the figurine of between 300 and 500 ka.

The self-evident anthropomorphic shape of the object is entirely the result of weathering processes that exploited inherent structural weaknesses from the parallel stratification of the original sandstone. The grooves separating the two 'arms' from the 'torso' and the prominent central line separating the 'legs' are attrib-

able to the diagenesis of the sandstone prior to metamorphism. No trace of human modification of these features was detected. The picture is more complex with the several grooves running roughly at right angle to the orientation of the rock's natural stratification. Some are natural features attributable to slight morphological variations in the stone's petrology (grain orientation), others were added or modified by percussion. Especially the 'upper' grooves (i.e. those nearest the 'head', if we applied anthropomorphic properties for the purpose of description) were treated by impact, while only a small area of the 'lower' grooves experienced impact. The traces indicating percussion treatment consist of conchoidal scars on individual quartz grains, fractured grains and step fractures indicative of impact stress or battering. Since such evidence is entirely lacking on the prominent surface aspects of the object, and restricted to specific groove areas, the involvement of natural impact is not plausible. Moreover, the impact traces emphasise features that underscore the iconic properties of the figurine, and their production required considerable skill on the part of the human maker. The most parsimonious explanation is that the Tan-Tan find is a manuport, collected for its distinctive anthropomorphic features, and then modified by percussion to emphasise those features.

The surface of the object bears numerous microscopic traces of a bright red pigment, occurring on both of its sides. Most of these specks of colouring matter measure in the order of 75-150 microns and are thus not readily visible. Their morphology and distribution is similar to that of eroded paint residues thought to have been applied wet to fine-grained rock surfaces in the Upper Palaeolithic. In some cases the brilliant red colour has been converted to a near-black colour on the surface of the pigment specks. No trace of red pigment has been detected on any of the Tan-Tan stone implements I have examined microscopically.

In summary, the Tan-Tan specimen is a modified manuport that has been treated in precisely the same way as the one from Berekhat Ram. Its natural human-like shape has been emphasised by grooves, but whereas those on the Israeli specimen were clearly shaped by abrasive action (Marshack 1996, 1997; d'Errico and Nowell 2000), the grooves on the Tan-Tan figurine were made either by pressure, or more likely by carefully applied impact. In addition, the Moroccan figurine appears to have been coated with paint, a kind of treatment not previously demonstrated from before the Middle Palaeolithic period (the Tata mammoth molar plaque). However, the use of red pigment is well documented from the Lower Palaeolithic of three continents (Bednarik 1992), including its implied use in colouring rock surfaces in the Lower Acheulian of India (Bednarik 1990). Nevertheless, at perhaps 400 000 years of age the Tan-Tan figurine presents the earliest direct evidence we currently have of a pigment application, and it is also the earliest currently known proto-sculpture, and thus the oldest evidence for iconic perception in hominids. The Berekhat Ram Late Acheulian specimen is thought to be younger, and the much older Makapansgat cobble is not adequate proof of iconic perception (Bednarik 1998). It is thus becoming increasingly evident that the precursors of 'art' produc-

tion, represented by the earliest palaeoart finds, extend much further into the human past than traditional archaeology ever imagined.

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