



Origin of an obsidian scraper at Yabroud Rockshelter II (Syria): Implications for Near Eastern social networks in the early Upper Palaeolithic

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ABSTRACT

Identifying the movement of lithic materials to reconstruct social networks has been a mainstay of research into Palaeolithic cognition and behavior, but such datasets are often predicated on studies of cherts and similar siliceous rocks, the origins of which can be difficult to establish conclusively. Yabroud Rockshelter II (YR2) in southern Syria contained stratified Middle and Upper Palaeolithic layers and, therefore, played a key role in defining the Levantine Palaeolithic. One obsidian scraper was found in Layer 4, which, via techno-typological correlations with nearby sites, dates to ~41–32 ka. Here we report our attribution of this scraper, based on its elemental analysis, to the Komürkü outcrops at Göllü Dağ volcano in central Turkey, ≥700 km on foot. This finding has three important implications. First, the earliest transport of obsidian into the Levant is usually associated with the Epipalaeolithic Natufian cultural complex (~14.5–11.5 ka); however, the phenomenon dates farther back to a period following the Middle to Upper Palaeolithic transition. Second, Layer 4 is roughly contemporaneous with Layer C at Shanidar Cave in northern Iraq, where two obsidian flakes were sourced to eastern Turkey and/or the Caucasus, suggesting similar scales of interaction across the landscape. Lastly, the chert assemblage is presumed to be local (≤ 10 km), but the obsidian scraper suggests that there are other far-travelled artifacts, underscoring that visual identification of cherts might be underestimating the extent of Late Pleistocene mobility and networks.

1. Introduction

Most arguments regarding cognitive and behavioral differences between Middle and Upper Palaeolithic hominins – commonly presumed to be Neanderthals and anatomically modern humans (AMHs), respectively – are predicated on evidence that readily preserves within the archaeological record. There is, for example, renewed interest in pyrotechnology of the Pleistocene (e.g. Berna and Goldberg, 2008; Daniau et al., 2010; Roebroeks and Villa, 2011; Courty et al., 2012; Twomey, 2013; Bentsen, 2014). Heat treatment of lithic materials and sophisticated adhesive recipes are thought to reflect advanced cognitive capabilities (Wadley et al., 2009; Wadley, 2013; Wadley and Prinsloo, 2014). Contrasting the use of symbolic objects in Upper Palaeolithic (UP) assemblages with Middle Palaeolithic (MP) ones has also been an important – and hotly debated – line of investigation (e.g., Mellars, 1989, 1996; d'Errico et al., 2003, 2005; Botha, 2008, 2010; Zilhão et al., 2010; Peresani et al., 2011; Finlayson et al., 2012; Roebroeks et al., 2012; inter alia). Other research foci include the rate and spread of technological innovations (Mellars, 1998; Klein, 2003; Wynn and

Coolidge, 2008) and differences in subsistence practices or technologies (Binford, 1985, 1989; Stiner, 1994; Marean and Assefa, 1999; Villa et al., 2005; Adler et al., 2004, 2006; inter alia).

A mainstay of such research has been identifying the movement of lithic raw materials (and other exotic items) across the landscape in order to investigate the scales of social networks. Given that such networks can function as a means to buffer against resource and climate unpredictability via access to distant ecological zones (Whallon, 1989; McBrearty and Brooks, 2000), a lack of long-distance social connections has been suggested as one factor in the Neanderthals' demise (Gamble, 1999). The evidence, though, is not conclusive. Villa and Roebroeks (2014) note that, in European UP assemblages that record distances > 300 km, nearly all involve the transport of shells, not lithic materials. Many efforts to establish the geographic sources of lithic materials rely on macroscopic identification of chert and similar siliceous rocks (Demars, 1982, 1990a, 1990b; Chadelle, 1983; Geneste, 1985; Turq, 1988; inter alia). Thus, claims of long-distance transport are met with skepticism as a matter of arithmetic. Attributing a chert artifact to outcrops at a distance of 10 km means that one can reliably discern

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