BEYOND BOUT COUPÉS: THE DYNAMIC ROLE OF BIFACES IN THE BRITISH MOUSTERIAN

Rebecca M. Wragg Sykes

ABSTRACT

Selected results from a recent comprehensive, technologically-centred study of the British Late Middle Palaeolithic are presented. Bifaces are a major element of these MIS 3 Mousterian assemblages, but they have not been examined in an inclusive manner. Attention has until now been focused on particular strikingly-shaped examples termed bout coupés or flat-butted cordates which have been analysed from a chrono-typological perspective and compared with the French Moustérien de Tradition Acheuléen (MTA). This has resulted in a biased perspective, as in reality, the diversity in form in British Mousterian bifaces is quite substantial, although there remains a real lack of any flat triangular forms. The broader position of bifaces within Neanderthal technological systems is explored, with results demonstrating that they were treated as flexible objects with extended use-lives and transported through the landscape. Possibilities remain for bout coupé and other “hyper”-shaped bifaces to signify a social facet to biface production through their deviation from the more typical cordiform/subtriangular biface form common across the MTA.


Keywords: Bifaces, handaxes, bout coupés, Mousterian, Neanderthal, Middle Palaeolithic, raw materials, technology, landscape.

INTRODUCTION

A combination of geographic setting and climatic flux during the Pleistocene has resulted in an archaeological record of discontinuous Palaeolithic occupation in Britain. There appears to be a true hiatus between the end of Marine Isotope Stage (MIS) 7 and the start of MIS 3, despite the presence of Neanderthals in north-western Europe even in the cold Stages 6 and 4 (Current & Jacobi 1997 & 2001; Ashton & Lewis 2002). Britain’s archaeological character is broadly similar in MIS 7 to the European continent, with varied Levallois strategies and extended landscape use, but the industry that arrives with re-colonising Neanderthals in MIS 3 is completely different, and includes assemblages with many bifaces.

The lithic assemblages, dating from c.60–40 kyr BP, have generally been regarded collectively as representing a cohesive British late Middle Palaeolithic “entity” identified with the French Mousterian, specifically the Moustérien de tradition Acheuléen (MTA) (Roe 1981; Tyldesley 1987; Coulson 1990; White & Jacobi 2002). A widely cited feature is the presence of a certain type of biface: the bout coupé, also referred to as flat-butted cordates (Wymer 1968; Tyldesley 1987; White & Jacobi 2002). Although discussion of these artefacts has been important in the development of research on the British Mousterian, the focus has generally been on typological description and chronological placement, with flat-butted cordates becoming accepted as temporally specific to MIS 3 in Britain (White & Jacobi 2002) and even quoted as a defining characteristic of assemblages (Soressi 2002; Claud 2008, 11).

This paper considers the true range of bifaces found in the British Mousterian, and explores the place of these artefacts within the systems of technological organisation in use by Neanderthals at this time (Wragg Sykes 2009).

EXPANDING ANALYTICAL HORIZONS

“With the British Mousterian we arrive at one of the most bleak archaeological landscapes in the Palaeolithic” McNabb (2001, 18).

The small size of the British Mousterian has often been noted, and in comparison to Continental Europe, it is true that even allowing for huge losses during early excavations, there is still an impression of fewer, smaller sites and less intense occupation (less than 1000 artefacts studied in Wragg

187 Corbar Road, Buxton, Derbyshire, SK17 6RJ. Email: r.m.wraggsykes@btinternet.com.
Sykes 2009). There may be some vagaries of geology/taphonomy at work: compared to south-west France, Britain’s cave resource is poor, and compared to northern France, it lacks the extensive loessic deposits that often preserve open sites. On the other hand, the small size of the extant database means that the entire geographical region is accessible to a holistic analysis, something that would be extremely difficult to do for France as a whole. Furthermore, it is likely that the limited number of artefacts results from Britain’s marginal situation at the edge of the continent, suffering repeated local extinctions (Roebroeks 2009) which provides a rare chance to study how late Neanderthals organised their technology in a re-colonisation context.

The “bout coupé issue” has most recently been examined by White & Jacobi (2002) who scrutinized Tyldesley’s (1987) database of these objects to ascertain their chronological situation. Their analysis showed that many do date to early-mid MIS 3. White & Jacobi suggested that Tyldesley’s rigid type description could be opened up to include all flat-butted cordates, and that a wider study of Mousterian bifaces was therefore possible. Emery (2010) has recently proposed that bout coupés are by-products of specific resharpening trajectories, but a broader contextualisation of their place within the British Mousterian has been lacking.

Generally, only sites where reasonable confidence in a MIS 3 age was possible (preferably based on radiometric dates, or in their absence, litho-bio-stratigraphic evidence) are discussed in this paper. One site has been included based on techno-typological grounds (Oldbury), as it is generally regarded as Mousterian in nature (Cook & Jacobi 1998). Great Pan Farm, Isle of Wight, and Bramford Road, Ipswich were excluded, given doubts about their contextual integrity. Following White and Jacobi (2002), as many as possible of the isolated bifaces identified as probably MIS 3 are included, but some examples were unavailable for study.

Figure 1. Locations of British Mousterian sites with bifaces/biface thinning flakes, landmass shown with approximately -50m sea levels c. 50 kyr BP. 1: Creswell locales, including Robin Hood Cave, Pin Hole, Mother Grundy’s Parlour, Ash Tree Cave; 2: Coygan Cave; 3: Lynford Quarry and Saham Toney; 4: Little Paxton; 5: Marlow; 6: Berrymead; 7: Sipson; 8: Snodland; 9: Oldbury; 10: Uphill Quarry; 11: Picken’s Hole; 12: Hyaena Den and Rhinoceros Hole; 13: Fisherton; 14: Castle Lane and Southbourne; 15: Kent’s Cavern.
<table>
<thead>
<tr>
<th>Site</th>
<th>Dating method</th>
<th>Material dated</th>
<th>Date range</th>
<th>Raw material/ chaîne opératoire stage for bifaces/biface working flakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lynford Quarry, Norfolk</td>
<td>C14; OSL</td>
<td>Sands below, within and above palaeochannel; mammoth bone from within palaeochannel.</td>
<td>60–50 kyr BP</td>
<td>Translucent flint: P, I, M, R, R, R, D; Northern flint: D</td>
</tr>
<tr>
<td>Pin Hole, Creswell Crags, Derbyshire/Nottinghamshire</td>
<td>C14; ESR; U-Series</td>
<td>Derived speleothem, faunal remains from below artefacts, within, and above &quot;blade line&quot;.</td>
<td>40–55 kyr BP</td>
<td>Translucent flint: I, M, R; Northern flint: M; Quartzite: I, M, R, D; Clay-ironstone: M, R</td>
</tr>
<tr>
<td>Ash Tree Cave, Burnhill Grips, Derbyshire</td>
<td>C14</td>
<td>Fauna from within and below artefact-bearing deposits.</td>
<td>53–30 kyr BP</td>
<td>Clay-ironstone: I, M, R; Translucent flint: I, M, R; Northern flint: I, M, R</td>
</tr>
<tr>
<td>Hyaena Den, Mendips, Somerset</td>
<td>C14; OSL</td>
<td>Below and within cave earth. Cut-marked red deer tooth 40,400 ± 1600 BP</td>
<td>After 56 kyr BP</td>
<td>Carboniferous chert: I, M, R, D; Translucent flint: I, M, R, D</td>
</tr>
<tr>
<td>Picken’s Hole, Mendips, Somerset</td>
<td>C14</td>
<td>Fauna within layer with lithics.</td>
<td>Mid-MIS3</td>
<td>Carboniferous chert: I, M, R</td>
</tr>
<tr>
<td>Kent’s Cavern, Devon</td>
<td>C14; U-series</td>
<td>Fauna within and below cave earth; speleothem.</td>
<td>55–40 kyr BP</td>
<td>Greensand chert: I, D; Translucent flint: I, D</td>
</tr>
<tr>
<td>Coygan Cave, Carmarthenshire</td>
<td>C14; U-series</td>
<td>Fauna within and below cave earth; speleothem.</td>
<td>&gt;45 kyr BP</td>
<td>Re-crystallised rhyolite: I, M, R, D; Rhyolite: I, D; Diorite: I, D</td>
</tr>
<tr>
<td>Little Paxton, Cambridgeshire</td>
<td>PHMAZ Terrace height</td>
<td>MIS 3</td>
<td>Translucent flint: ?P, I, M, R, D; Northern flint: M, D</td>
<td></td>
</tr>
<tr>
<td>Mother Grundy’s Parlour, Creswell Crags</td>
<td>PHMAZ</td>
<td>MIS 3</td>
<td>Clay-ironstone: I, D</td>
<td></td>
</tr>
<tr>
<td>Uphill Quarry Cave 8, Somerset</td>
<td>PHMAZ</td>
<td>MIS 3</td>
<td>Translucent flint: I, D; Carboniferous chert, I, D</td>
<td></td>
</tr>
<tr>
<td>Oldbury, Kent</td>
<td></td>
<td>?MIS 3</td>
<td>Translucent flint (poor quality and thermally damaged): I, M, R, R, D; Eocene flint, I</td>
<td></td>
</tr>
<tr>
<td>Fisherton, Wiltshire</td>
<td>PHMAZ</td>
<td>MIS 3</td>
<td>Translucent flint: I, D</td>
<td></td>
</tr>
<tr>
<td>Snodland, Kent</td>
<td>L</td>
<td>MIS 3</td>
<td>Translucent flint: I, D</td>
<td></td>
</tr>
<tr>
<td>Berrymead Priory, Acton</td>
<td>L</td>
<td>MIS 3</td>
<td>Translucent flint: I, D</td>
<td></td>
</tr>
<tr>
<td>Southbourne, Bournemouth</td>
<td>L</td>
<td>MIS 3</td>
<td>Translucent flint: I, D</td>
<td></td>
</tr>
<tr>
<td>Castle Lane, Bournemouth</td>
<td>L</td>
<td>MIS 3</td>
<td>Translucent flint: I, D</td>
<td></td>
</tr>
<tr>
<td>Saham Toney, Norfolk</td>
<td>L</td>
<td>MIS 3</td>
<td>Translucent flint: I, D</td>
<td></td>
</tr>
<tr>
<td>Sipson, London</td>
<td>L</td>
<td>MIS 3</td>
<td>Translucent flint: I, D</td>
<td></td>
</tr>
<tr>
<td>Marlow, Buckinghamshire</td>
<td>L</td>
<td>MIS 3</td>
<td>Translucent flint: I, D</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Sites with bifaces or evidence of their presence, with dating method shown. PHMAZ refers to the Pin Hole Mammal Assemblage Zone, a faunal grouping found during early-mid MIS 3 (Currant & Jacobi 2001). For full data and references see Wragg Sykes (2009). P= bifaces produced in-situ; I= bifaces imported; M= bifaces maintained in-situ; R= bifaces removed from site; D= bifaces discarded. These stages are not necessarily linked production sequences at any site. Date ranges are based upon best data, e.g. ultrafiltration AMS radiocarbon dates where available. (L=Lithostratigraphy).
BRITISH MOUSTERIAN BIFACES: DIVERSITY, TECHNOLOGY AND DYNAMISM

Figure 1 shows all sites with bifaces or evidence of their presence in the form of thinning/re-sharpening flakes and Table 1 summarises contextual information. The sample consists of 116 bifaces and 140 biface-working flakes from 21 sites (all palimpsests). The biface total includes 10 partial or fragmentary examples, three unifaces, and three roughouts. The topographic situation of sites is a further variable, with 11 cave assemblages, and ten open sites, of which six yielded isolated bout coupé bifaces.

Typology

Despite the commonly-held view that the British Mousterian is largely defined by *bout coupés* (Soressi, 2002, 7; Claud 2008, 11), they are not the most frequent form of biface—especially if one is strict about the qualifying shape. The large Coygan biface and the biface from Castle Lane, Bournemouth are probably the most accepted examples of the type (McNabb 2001; White & Jacobi 2002), but as Figure 2 shows, even these are not identical: the Coygan biface has a convex rather than flat butt, and the Castle Lane biface has a large area of remnant cortex present, despite Tyldesley’s criterion for the type as lacking cortex (1987, 155).

Classification of whole bifaces (108) using Wymer’s (1968 & 1985) system resulted in a total of only 13 flat-butted cordates (Type N) or 20 if very small examples are included. When somewhat hybrid examples, such as pointed (NF) or ovate flat-butted cordates (NK) are included, the total rises to 36. However, the real frequency may be inflated by the isolated finds, and when these are removed, 25% of bifaces are some form of flat-butted cordate, but only 5% are “classic” *bout coupés*, type N. Therefore it does appear that, while these distinctive forms are present, there is something of a continuum with other cordates, which account for 75% of all bifaces. There is only one very small, unifacial cleaver present, and no extreme pointed types of biface such as ficrons, although some bifaces are quite elongated subtriangular forms.

The metrical constraints suggested by Tyldesley for *bout coupés* appear rather narrow, as for some measures (planform and elongation) around half of those classed here as flat-butted cordates exceed her values. Tip shape shows a better correspondence, with around two thirds within the suggested values, while refinement is the most closely matched, and indicates strongly that *bout coupés* tend to be thin.

A notable feature of many but not all bifaces is the presence of a worked basal cutting edge, which is also seen in northern French assemblages, especially in triangular bifaces (Claud 2008, 33), but contrasts with classic MTA cordiforms which have cortical or blunted bases.

The discovery of Lynford Quarry in 2003 has provided the first sizeable sample of bifaces (50) from a single locale, a palimpsest assemblage from an organic palaeochannel (Boismier et al. 2003; White 2003 & forthcoming). There is clear variety in biface form within the assemblage, as well as a substantial size range. This is partially due to a high index of resharpening, breaks and recycling, but even taking this into account, there is not an overriding single shape, although one set of very similar bifaces exists, which could potentially reflect the work of a single individual. The total of 50 bifaces is even somewhat arbitrary, as there is a fuzzy boundary in some pieces between large unifaces, bifacially retouched flake tools and “proper” bifaces, also noted in some northern French assemblages (papers in Cliquet & Monnier 1993; Cliquet 2001; Launay & Molines 2005).

Interpretations concerning the prevalence of particular biface shapes must in any case be tempered by the fact that form in bifaces is affected by multiple factors: initially by raw material variation and continuously by resharpening. In addition, recent usewear research on French MTA bifaces has suggested a relationship between morphology of biface edges and function (Claud 2008).

Raw material exploitation

Within the British Mousterian as a whole, there is clear evidence for the differential use and transport of lithic raw materials (Jacobi 2004; Wragg Sykes 2009 & in prep. a). The highest quality stone available (judged on its homogeneity and fine structure) is the translucent type of flint that derives from the
Figure 2. The two most classic (or extreme) examples of bout coupés. Left: Coygan Cave; right: Castle Lane, Bournemouth.

<table>
<thead>
<tr>
<th>Material Type</th>
<th>Flint-rich sites (Open sites)</th>
<th>Flint-poor sites (Caves)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifaces</td>
<td>82 (96.5%)</td>
<td>8 (25.8%)</td>
<td>90 (77.6%)</td>
</tr>
<tr>
<td>Translucent flint</td>
<td>8 (2.4%)</td>
<td>2 (1.7%)</td>
<td></td>
</tr>
<tr>
<td>Northern flint</td>
<td>2 (2.4%)</td>
<td>2 (1.7%)</td>
<td></td>
</tr>
<tr>
<td>Quartzite</td>
<td>7 (22.6%)</td>
<td>7 (6%)</td>
<td></td>
</tr>
<tr>
<td>Greensand chert</td>
<td>5 (16.1%)</td>
<td>6 (5.2%)</td>
<td></td>
</tr>
<tr>
<td>Rhyolite</td>
<td>1 (3.2%)</td>
<td>1 (0.9%)</td>
<td></td>
</tr>
<tr>
<td>Re-crystallised rhyolite</td>
<td>1 (3.2%)</td>
<td>1 (0.9%)</td>
<td></td>
</tr>
<tr>
<td>Diorite</td>
<td>1 (3.2%)</td>
<td>1 (0.9%)</td>
<td></td>
</tr>
<tr>
<td>Clay-ironstone</td>
<td>13 (31.7%)</td>
<td>13 (9.3%)</td>
<td></td>
</tr>
<tr>
<td>Carboniferous chert</td>
<td>2 (6.5%)</td>
<td>2 (1.6%)</td>
<td></td>
</tr>
<tr>
<td>Lithic cast</td>
<td>3 (9.7%)</td>
<td>3 (2.6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>85 (100%)</td>
<td>31 (100%)</td>
<td>116 (100%)</td>
</tr>
</tbody>
</table>

Table 2. Comparison of proportions of raw materials present for sites locally rich or poor in translucent flint. This division also follows the type of site: caves or open locales.

Cretaceous deposits of south-east Britain (Mortimore et al. 2001), and there is a clear preference for this material when it is locally present. Translucent flint is also the only raw material in the British Mousterian that is transported significant distances (<100 km). Furthermore, in these situations it is almost always associated with bifaces or large flake blanks retouched as scrapers, echoing patterning widely seen in the Middle
Table 2 shows the distribution of bifaces by raw material and the distance to high quality translucent flint, with sites being classed as either flint-rich (available within 5–10 km), or flint-poor (available >30 km). It can be seen that at flint-rich sites, the vast majority of bifaces are made in that material. Contrastingly, in flint-poor regions use is made of local stone types, for example igneous rocks at Coygan Cave, quartzite and clay-ironstone at Creswell Crags, Carboniferous chert at Hyaena Den, and Greensand chert at Kent’s Cavern. At the same time however, in these regions over 25% of bifaces and over a third of biface re-sharpening flakes are translucent flint. The fact that only the highest quality stone is transported in this way in the British Mousterian indicates that it is a case of knowledgeable actions; if Neanderthals were randomly picking up stone from one place and discarding it after a certain time (as suggested by Brantingham 2003), one would expect to also see long-distance transport of non-flint raw materials.

Biface histories: transformations and dynamics

Maintenance by resharpening is a fundamental feature of British Mousterian bifaces, including bifacial edge resharpening, unifacial working and truncet techniques (Emery 2010). Metrical comparison between translucent flint bifaces from flint-rich and flint-poor sites reveals that the latter are significantly smaller, suggesting that they have been highly re-sharpened while being transported. Comparison of size and scar number provides further evidence for curation of these bifaces, as the smaller the biface, the greater the scar number (Figure 3), whereas at flint-rich sites, the general trend is for scar number to correlate positively with size. At the same time, small translucent flint bifaces at flint-poor sites have lower scar numbers than those of the same size at flint-rich locales. This is due to several factors: some are made on flake blanks and through successive re-sharpening, large areas of the original flake ventral make up more and more of one face, or they have been utilised as cores, therefore lowering the overall scar number.

Emery (2010) explicitly proposes that bout coupés result from a method of resharpening which combines unifacial working of one side (creating a plano-convex form) with bifacial edge reduction. However she observes that it is not possible to say whether the distinctive shape is purely a by-product of maintenance or is present from initial manufacture. Soressi (2002) has put forward a model of evolving form through reduction for south-west French MTA bifaces, moving from symmetric edges to asymmetric, which can also be observed in some British examples (Figure 4). Disc-shaped bifaces at Saint-Brice-Sous-Rânes, Armorica, have been suggested by Cliquet et al. (2001) to represent highly reduced forms, which might also explain the very round shapes in the Oldbury assemblage, where though flint is locally available, it is poor quality.
Lynford shows an extraordinary level of resharpennng compared to other sites; in addition some large bifaces were extensively repaired after breaking, and others were totally transformed (Figure 5), demonstrating a conceptualisation of bifaces as situationally adaptable.

This impression of Mousterian bifaces as flexible, plastic objects is also seen in their treatment as supports for retouched zones, similar to flake tools (Boëda 1991). Such modification is found at several locales, but is unusually frequent at Lynford (over 50% of bifaces), mainly scraper retouch, but also notches. Some have multiple areas of retouch, including combinations of scraper and notch, and the number of modified zones shows a positive correlation with size, implying that larger bifaces were exploited according to their longer use-life potential.

Translating bifaces to other uses, for example as cores or even percussors, during late stages of use (after reduction or breakage) is also seen in the Mousterian (Turq 2001; Soressi 2002). Hyaena Den includes two heavily re-sharpened, transported translucent flint bifaces with deep removals that appear to represent exploitation as cores, which can be understood as economising behaviour given that this is in a flint-poor region. However, some broken bifaces at Lynford were also utilised as cores despite the local abundance of flint, including an unusual example where the break surface across the tip was used as a platform for the removal of blades down the edges (Figure 6). A similar technique has also been observed at the late MIS 5/4 mixed Mousterian/late Micoquian site of Vinneuf, south-east of Paris, where interestingly in the same level, there is a strikingly bout coupé-like biface (Gouédo 2001).

**Landscapes and mobility**

Phases of re-sharpening, repair and transformation were separated not just in time, but also in space in the British Mousterian, attesting to the curation (Bamforth 1986; Shott 1996; Andrefsky 2009) and dynamic existence of these objects. Tables 1 and 2 demonstrate long-distance transport of translucent flint bifaces to flint-poor regions, as well as the fact that at some sites, re-sharpening flakes in this material are the only evidence that bifaces were imported, maintained and subsequently removed. In addition to long-distance movement of some bifaces, there is also substantial evidence for dynamic and curated bifaces even in situations of local raw material abundance, a behaviour also seen in the MTA-A in southwest France (Soressi 2002 & 2004). Lynford clearly shows this, as it is in an area rich in high quality flint, and probably corresponds to multiple streams of bifaces entering and leaving the site at different stages in their use-lives. The highly repaired and recycled examples could have been transported for long periods some distance away, before being returned to the locale as part of
re-tooling. Alongside this, finishing of partially-worked large bifaces and expedient production on cobbles were occurring in-situ, presumably in connection with carcass exploitation. At the Creswell Crags locales (including Ash Tree Cave, c. 2 km away) bifaces were also made on immediately available stone (quartzite and clay-ironstone), and there is abundant evidence of these artefacts being moved into and out of caves, indicating use away from immediate production. For example, the local clay-ironstone is present at Ash Tree Cave and Pin Hole as biface maintenance debitage, but at Robin Hood Cave and Mother Grundy’s Parlour as bifaces but no related debitage. To a lesser extent, a similar pattern exists for quartzite, which is also replicated in the evidence for the movement of cores and flakes in this material at the Creswell Crags caves (Wragg Sykes 2009). However, there is no evidence of intense resharpening, repair or recycling in these materials, in contrast to the imported flint bifaces: this parallel raw material-reduction stage configuration suggests that the assemblages represent coherent systems of technological organisation, rather than resulting simply from separate occupations using different raw materials.

This patterning of the presence or absence of bifaces and biface-working flakes has been used to suggest types of sites in the MTA (Turq 2007 cited in Claud 2008, 20):

A: Sites where bifaces are produced, then exported, with some also including imported bifaces.

B: Sites where imported bifaces are used in-situ, and are either maintained or not, then discarded.

C: Sites where bifaces are imported, used, maintained then removed, and are only represented by biface-working flakes, referred to as “passing through” locales.

Some sites include multiple flows of bifaces, giving a combined signature of types A/B. In Britain there seems to be few primary stage production sites (A) for bifaces, with the only real candidates being Lynford and Robin Hood Cave, but at the former it seems that many of the bifaces were already at least partially worked before being brought to the site and therefore it could be described as A/B. There are several examples of type C sites that appear to attest to ephemeral visits, for example Picken’s Hole (Wragg Sykes in prep. b).

Combined analysis of the stages of reduction, the wider technology of assemblages and functional data from use-wear suggests that French Mousterian assemblages are broadly organized around a logistical-residential model (Binford 1980). Task sites, with a type B signature are usually open, and appear related to primary acquisition of resources (early-stage butchery, collecting wood). Residential sites with either type A or A/B appear to be associated with caves or rockshelters where secondary production and consumption activities occur, such as processing meat, skin-working or wood-working (Turq 2000; Soressi & Hays 2003; Claud 2008, 472–473). In
Britain, the configuration of sites has some similarities to this model, but also differences, as Lynford resembles a type A/B residential site in terms of the technological stages of bifaces present, but it is not a cave, and is associated with primary animal resource acquisition. Some caves do show evidence for the use of fire, broad repertoires of tools, and in-situ core reduction as expected for residential sites. However there are few with evidence for primary production of bifaces, instead having a lithic signature closer to type B or C locales, indicating short term occupation for specific tasks and sometimes very ephemeral use. Discovery of further open locales would certainly aid understanding of this landscape organisation, but undoubtedly it represents complex interactions between activities, mobility, and resource availability, and could represent a different degree of mobility to French sites.

All the evidence presented demonstrates that bifaces played a key role within extensive landscape exploitation strategies, and it seems that Neanderthals were highly mobile, if the long-distance transport of bifaces is representative of individual movements rather than exchange. The consistent choice to move high quality translucent flint bifaces, inherently maintainable tools, into non-flint regions demonstrates clear scheduling of activities and considerable forethought, suggesting that this is a coherent system of techno-economic organisation.

**BOUT COUPÉ REDUX**

Following the preceding discussion emphasising the wider variety, curation and flexibility of bifaces in the British Mousterian, there is still something to be said about the form of these objects, including *bout coupés*. Despite a large body of literature discussing possibilities of a complementary social factor to the production of bifaces in the Acheulean in terms of symmetry and aesthetics (Wynn 1995; Mithen 1999; Kohn & McPherron 2000; Hopkinson & White 2005), there has been little comparable debate for Middle Palaeolithic bifaces, with the recent exception of Emery (2010). The question of why bifaces are retained in the Middle Palaeolithic despite the development of prepared core technology, even appearing to fluoresce in the Mousterian, is somewhat mysterious.

Certainly the metric and therefore aesthetic structure of bifaces changes between the Lower and Middle Palaeolithic, with the position of greatest breadth much more variable and often lower down the biface. There is also a stronger correlation between length and breadth in Mousterian bifaces, indicating a greater concern with the maintenance of a particular form throughout stages of reduction (Emery 2010; Pope *et al.* 2006; Wragg Sykes 2009).

There is also perhaps a stronger structural symmetry to most Mousterian bifaces, which seems to have been an important consideration during initial production, and is often maintained despite resharpening (although clear contrasting examples where symmetry was overridden by functional needs of resharpening during the lifetime of the biface exist). Some bifaces, when completely re-made after severe breaks, even had a new axis of symmetry imposed, as seen at Lynford (Figure 7). This is in strong contrast to the *Keilmessergrüppe*, where bifaces seem to play a similar role technologically, but lack symmetry. The fact that symmetry in Acheulean bifaces has been demonstrated thus far to be unrelated to functionality (Machin *et al.* 2007) suggests it is a consequence of another factor.

There are also certain bifaces with planforms which appear especially distinctive to lithic analysts and which do not appear in the Acheulean, namely *bout coupés* and flat triangular bifaces. Emery (2010) has suggested that the classic D-shape of *bout coupés* can be explained by a particular method of resharpening rather than resulting from formal...
design. If this was the case one might expect them to be on average smaller than other shapes, but they occur across the size range, and some of the largest bifaces are *bout coupés*, for example at Coygan. This implies that even if most bifaces were resharpened to some extent, this particular form was maintained despite reduction, rather than resulting from it.

I would like to suggest that both *bout coupés* and flat triangular bifaces can be viewed as extremes of shape, or “hyper-shapes”, which exist at the edges of a modal biface form found at the assemblage and regional level. They are representatives of the extremes of the possible in terms of biface form, if there is a pre-existing generalised set of structural practices specifying a symmetrical, two-sided tool with two main edges and a base. The distinctive form of both is something that is imposed during initial production, and maintained through reduction, potentially using a method as outlined by Emery (2010). The reason that not all bifaces are of these “extreme” forms could be due to skill differentiation, where varying knapping skill allows some Neanderthals to be more accomplished in manipulating matter than others, or in other words, to be artisans (Bleed 2008). Rather than hyper-shapes being culturally-specific “styles” which knappers aspire to but imitate to varying degrees (White & Jacobi 2002, 127), they can be understood as the result of some Neanderthals consciously manufacturing atypical forms. Greater control over symmetry, edge shape (especially very straight, fine edges) and refinement would permit them to make hyper-shaped bifaces where others produced only broadly cordate/subtriangular forms. These individuals could explore the boundaries of biface structure through innovation and deviation (Gamble 1999; Hopkinson & White 2005), rather than simply adhering to cultural norms. This notion of artisanal knappers could explain why these artefact forms are not overwhelmingly dominant, but still regularly occur, especially as very finely worked, highly resharpened and curated examples.

Whether or not one accepts that the hyper-shapes were designed or derived from resharpening trajectories, the question of regionally-specific forms can still be contemplated as there does appear to be real spatial patterning in their occurrence. White and Jacobi (2002) noted that *bout coupés* are (relatively) numerous in Britain but seem less so in French assemblages. Bordes (1961) did illustrate some examples that could be described as flat-butted cordates, but placed them within other classes, and recent publications show examples from northern French assemblages (Gouédé 1993; Cliquet *et al.* 2001; Depaepe 2001). It is true however that flat triangular bifaces are totally absent (thus far) from British assemblages. As with *bout coupés*, these forms are not especially common within continental assemblages, but they occur far more frequently in northern France than in the south-west (Soressi 2002; Claud 2008). They also have worked basal cutting edges like *bout coupés* and other British bifaces, in contrast to most cordiform bifaces from MTA sites. In fact the only difference between *bout coupés* and triangular bifaces is that they simply have more vertical straight edges and more rounded tips. Although it is possibly simply a matter of sample size (or even site type, as most northern French sites are open), the lack of hyper-triangular forms in Britain may well reflect a “cultural geography” where artisans within the British Mousterian had broadly different concepts structuring their manipulation of biface form and/or resharpening trajectories, that became most highly crystallized in hyper-shaped bifaces.

**CONCLUDING REMARKS**

A holistic techno-typological approach demonstrates that Mousterian bifaces from Britain are highly mobile, dynamic objects, even in situations of local raw material abundance. They show clear evidence of their conservation by Neanderthals, with extended use-lives, and very dislocated reduction sequences, especially for translucent flint bifaces transported to other regions. However, even in flint-rich regions, bifaces were maintained and repaired, transformed after breaks by re-modelling or recycled as cores, and treated as adaptable supports for other tool forms. These technological practices are common to Mousterian bifaces as a whole, and demonstrate that they were regarded flexibly by Neanderthals, as tools in themselves, useful for a variety of purposes, but also as objects with an inherent adaptability, which could be
successively re-sharpened and moulded to other uses where needed.

British bifaces show many affinities with the MTA-A of France, which also broadly dates to early-mid MIS 3 (Soressi 2002, 9), but there are some characteristics that are distinctive, including the fact that there is a larger average size, and many examples have worked bases. Typologically, most British bifaces are obviously distinguished from Keil-messergruppe forms and appear to be closer to industries from northern France, including those with triangular bifaces, but also others with cordiforms.

That bifaces played a central role in the way Neanderthals organised themselves in the MIS 3 landscapes of Britain is clear, with abundant evidence of knowledgeable use of stone resources and planning for future needs, within a wider coherent technological system. In the context of probable repeated re-occupations of Britain between the colder stadials of MIS 3, the core position of bifaces points to a need for tools that were materially plastic, and maintainable through long use-lives. This could explain why they appear to have been preferred in Britain over Levallois products, and instead occur alongside discoidal and migratory platform core reduction strategies, acknowledged as providing a great degree of adaptability to varying raw material types and morphologies (Peresani 2003): especially valuable when exploring new lands and exploiting the unpredictable resources of MIS 3’s changing environments.

ACKNOWLEDGEMENTS

This paper is based on doctoral research funded by a three-year Research Studentship at the University of Sheffield. I would like to thank the organisers of the Past Lives from Cold Stone conference for their interest in the paper. The large amount of primary research this paper is based on was supported by the ever-present previous work of Roger Jacobi, in the form of manuscript notes at museums, and stimulating discussions in person. I am indebted to his scholarly generosity. I also thank the many museums and curatorial staff who permitted access to the assemblage from Lynford by Bill Boismier, and Mark White’s kindness in consenting to my studying it, and publishing here. Thanks to Karen Ruebens and Erick Robinson for comments on the paper, to two anonymous reviewers for suggesting improvements and to Ana Jorge for assistance with Figure 1. I have enjoyed obsessing about bifaces with Karen, Kate Emery and Matt Pope, although they may not agree with everything here, and all errors and strange notions remain my own.

REFERENCES


White, M.J. forthcoming. The lithic assemblage from Lynford Quarry.


Wragg Sykes, R.M. in prep. b. The lithic assemblage from Picken’s Hole, Compton Bishop.


