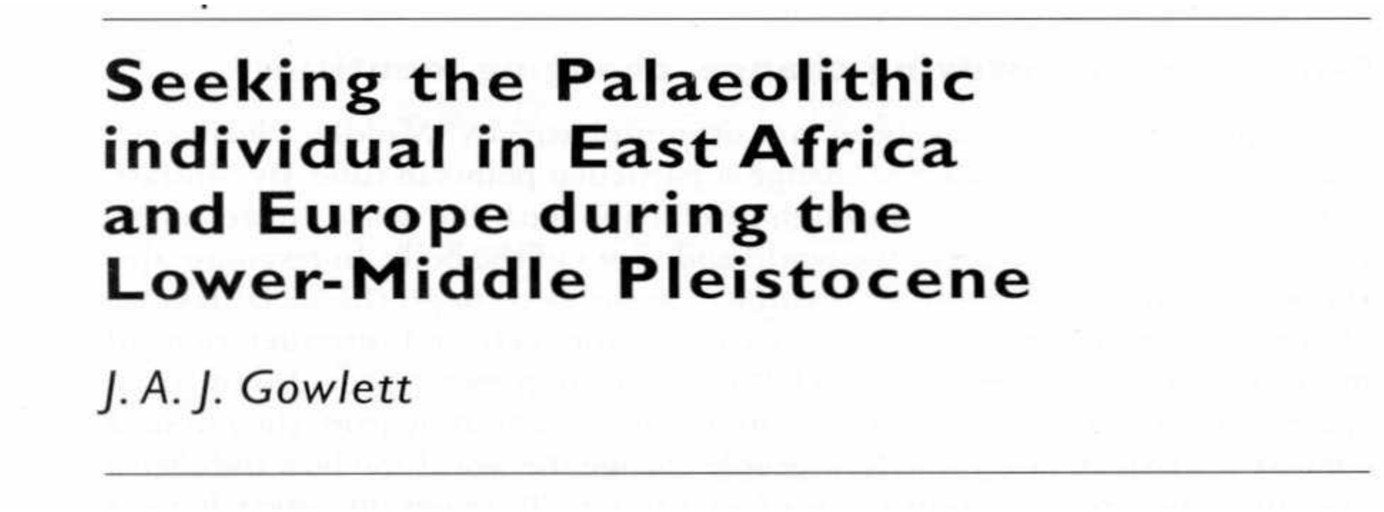

Seeking the Palaeolithic individual in East Africa and Europe during the Lower-Middle Pleistocene

J. A. J. Gowlett

In:
The Hominid Individual
in Context

Archaeological investigations
of Lower and Middle Palaeolithic
Landscapes, locales and artefacts

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Chapter 4

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This chapter aims to look for the individual by considering and comparing data from the Acheulean, concentrating on evidence from Africa, about one million years ago, and extending themes to Europe about 0.5 million years ago. Both of these zones fall within the domain of *Homo erectus* as commonly conceived, though towards the time when more progressive hominids appear.

Both are zones of concentration of archaeological effort, because of good local preservation. Their palaeoanthropology tends to be conducted by different communities, but similarities in the basic data are evident, and present challenges to us. Both areas sometimes offer data at very high resolution. In stone technology, this comes predominantly in two forms – as refit sets that trace an individual's action through time; and as shaped artefacts which record some events in an individual's pathway towards producing the final object.

In general now refits grab the attention, with their many pieces and spatial spread – here is the appeal of visible dynamics, and the compelling perfection of jigsaws. Yet shaped artefacts may preserve much of the same information, and sometimes more, about design goals, final stages of production and use of tools.

Refits stand out as something rare in the record, as a complex of related finds. The idea of the single piece tends to be lost in our perception of a whole assemblage of similar artefacts – almost automatically we reduce the individual specimen into the averaged host. We see the mass rather than the individual hominid.

Curiously, though, when it comes to interpretation, the refit set is also often used not to show the individual, but to illustrate the general – the aim seems to be to find 'social habit' (Leroi-Gourhan 1993; Roche *et al.* 1999). Conversely, I aim here to turn things round – to use the case of the tools or end-products to illustrate the individual.

But given the similarities in the two situations, we can ask across the board 'how far do we hang onto the individual' whose actions have been illuminated? The problem is a Palaeolithic example of a more general case, in archaeology and life: where archaeology has a little data, it is hard to see or demonstrate a pattern. Where we have a lot of data (and it can be a vast amount), our strong need is to standardise, summarise or abbreviate it statistically – thus losing most of the high resolution which we have tried so hard to acquire (cf. Gowlett 1997).

In this chapter, I aim to use examples from the two areas so as to explore repertoires of behaviour, and to find modes of retaining more of the individuality which we uncover.

Issues

There are times when we can trace individual actions in the past with brilliant precision, as when a knapper strikes a single flake, and we find core and flake side by side. This evidence seems to provide historicity, in the same way as history labels an individual – for example, Q. Laberius Durus, a Roman officer who fell in Caesar's second campaign in Britain, the first named person to die in British history (Caesar, *Gallic War V, 15*).

There is a view then, given our confidence in his reality and the date, that this is 'historicity'. Perhaps archaeology, which used to be interested in classification and technology, can now similarly reach towards the individual, achieving a similar sort of historicity – Proctor (2003) cites evidence that this is the trend. Certainly history can reference the individual by name, whereas prehistory by definition cannot. Beyond that, there is far more similarity in the cases than meets the eye.

Archaeology actually shares this difficulty with history – the problem of 'averaging' data – taking the exceptional back to the median. Thus Bertrand Russell (1921), contrasts the full human 'impersonal' history with the richness and value of individual experience. James (2003) in considering conscious selves develops a similar point about the relationship between individual experience and social pattern. The relationship between individual and wider structures has also been explored over a long period (Boulding 1956; Hinde 1976), and explicated in terms of the Palaeolithic (Gamble 1998b). Here the focus is not so much on the relationship itself, as on finding time and space to discuss both individual and group or set.

The individual in early East Africa

East Africa is rich in Lower Palaeolithic assemblages, but they extend through a huge span of time, from 2.5 million years to about 250,000. East Africa is the key territory for examining the Oldowan and early Acheulean. The sampling density is nevertheless very low. Each is known from less than a dozen major studied sites, although some of the 'sites' such as Olduvai or Lake Turkana embrace many localities. Among all these, refitting evidence that allows us to see sequences of actions blow by blow comes from just a few sites:

East Turkana (e.g. FxJj50)	(Bunn *et al.* 1980; Isaac 1981a)
West Turkana (Lokalalei)	(Roche *et al.* 1999)
Chesowanja (very few)	(Gowlett 1999)
Isenya	(Roche *et al.* 1988)
Peninj	(de la Torre *et al.* 2003)

When such refits were first searched out (e.g. Isaac 1981), it was with the aim of investigating patterns in early hominid behaviour, and alongside that to help explain taphonomic contexts, charting the extent of secondary disturbance, as at FxJj50 at East Turkana (Bunn *et al.* 1980). The involvement of French scholars led to a greater emphasis on shared social practice of tool-making (Leroi-Gourhan 1993; Roche *et al.* 1999). Those at Lokalalei at West Turkana, for example, represent the earliest set of Palaeolithic refits, in more than sixty groups (Roche *et al.* 1999). They show a complexity of production routines that was largely unexpected for such an early period. They also help to document imports and exports of raw materials (Schick and Toth 1993). Similar evidence has come recently from Peninj, where de la Torre and colleagues argue for elaborate patterns of core-reduction which are socially standardised (de la Torre *et al.* 2003; Domínguez-Rodrigo *et al.* 2002).

At Chesowanja, of similar age, the very small number of refits is simply enough to give some idea of the level of disturbance on GnJi 1/6E site (Gowlett 1999). This occurrence illustrates our lack of confidence about structure, on early sites. The possible 'hut base' structure at Olduvai DK has never been corroborated by other features (Leakey 1971). The only possible structured model for examining Chesowanja is that of features surrounding a hearth. Although these are well developed by various methodologies (Binford 1978a; Stapert and Street 1997), the potential for nature to mimic a pattern cannot easily be discounted, nor can probabilities of this be calculated.

In general, although the refits demonstrate much about production, in East Africa they show very little about formal tools (Isenya being an exception illustrating modes of biface production).

In contrast to this enigmatic picture presented by refits, we have large assemblages of formal tools on land surfaces, in such numbers that they must represent most of the local repertoire of stone tools in use.

Kilombe, an Acheulean site complex in Kenya, offers a prime example of this. The site is aged about 800,000–1 million years. The bifaces are scattered across a vast area, largely on a single visible surface (Bishop 1978; Gowlett 1978, 1988, 1991, 1993; Figure 4.1). Gowlett (1996b) argued that we had scarcely begun to look at the issue of 'who made what?' in the sense of asking why each specimen deviated from the norm, and by what allowable amount.

It was argued that each time an individual makes a specimen, they are in effect moving a 'personal pointer' to a particular point within the zone of all allowable permutations made by the group. But generally, we did not (and do not) know whether one individual might move the pointer to far separate regions; or whether the individual would operate within a very restricted zone of the total. Would large individuals make the larger tools? Would it matter whether the use was by a male or a female, single-handed or double-handed?

In general, archaeologists portray such fields of variation either graphically as a scatter plot, or by the use of means and standard deviations (e.g. Isaac 1977). These 'ideal' statistical measures fit surprisingly well in many cases, although skewed distributions are likely to occur, and barcharts of frequency distributions should offer a fuller picture than summary statistics.

To look at the individual, we need to escape these standard procedures. Two attempts at providing an insight are offered here:

1. Variations of cluster analysis
   Perhaps where bifaces are clustered on surfaces, on rarest occasions it may be possible to isolate a group which is the select production of one individual in a limited area. One can ask how this output compares with the overall production, and how it compares with the modern production of an individual within a group.
2. Selection and examination of 'extreme cases' from the range of various assemblages
   How much latitude was there for an individual to stretch norms at the margins? This investigation is conducted from a set of African Acheulean assemblages (Kalambo Falls, Kilombe, Kariandusi, Sidi Abderrahman).

Cluster analysis

The purpose of the cluster analysis is to find similar specimens, or to isolate groups of artefacts which demonstrate some particular coherence. When it is applied we also have to ask why we might expect some patterning in the particular context. At Kilombe, where artefacts are strewn across an extensive surface (Figure 4.1), there is a chance that for one reason or another there may be groups that are locally distinctive. One approach – Wishart's mode analysis – was used by Gowlett (1988) at Kilombe, in order to test for Developed Oldowan-like phenomena, by seeking out 'natural' clusters of artefacts. The Mode analysis looked at the total production in two areas at Kilombe. In each area it produced two groups at the highest level (the 'large' and 'small' groups, surmised to correspond with 'Acheulean' and 'Developed Oldowan': Gowlett 1988).

The data produced another distinctive feature – a small group of highly similar bifaces which clustered within the large set at the highest level. This was a group of six handaxes distinguished by their particular thinness. They can be plotted both in figures and graphics against the 'parent' population (Table 4.1; Figure 4.2 indicates the measurements taken).

Overall, this limited set of 'thin' specimens shows half to two-thirds of the variability of the entire AC/AH main group.

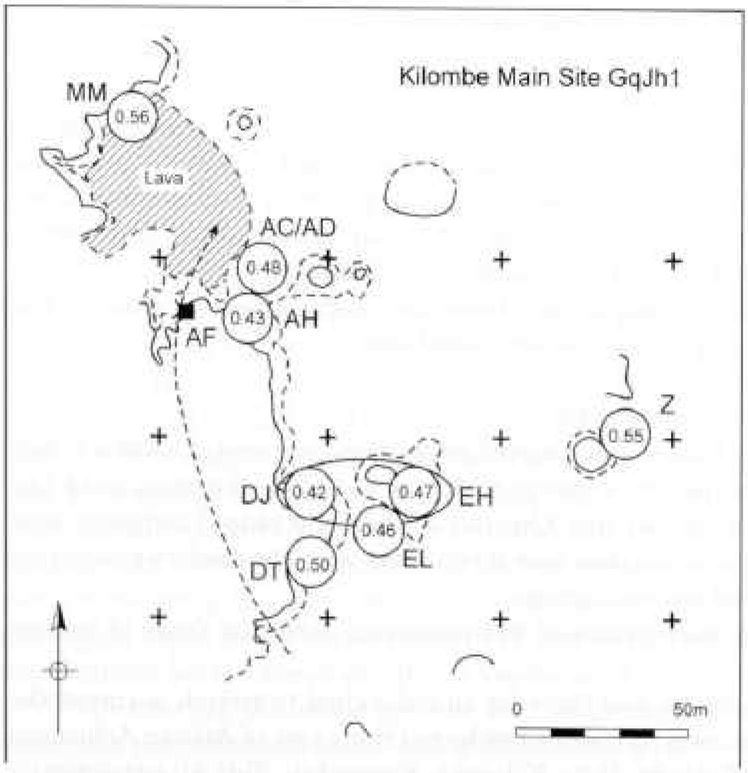

Figure 4.1 The Kilombe main surface, showing the localities of studied biface samples.

Its breadth and thickness as absolute measures vary much less than in the general assemblage, showing the tightness of the grouping. Length is also constrained. The group also stands out from both the large group and the small group in being far thinner than either (reflected in the T/B ratio), and being much more oval rather than pointed (reflected in the BA/BB ratio). As the group is intermediate in general size between the large and small group, it is the more notable that these differences buck any allometric trends along a gradient from small to large hand-axes, such as those subsequently isolated by Crompton and Gowlett (1993).

Just possibly, here is the output of one individual working through an hour or two. Or perhaps, here are the efforts of two individuals carrying in specimens together. At any rate the cluster separation itself is an objective reality: the coherence of this subgroup stood out clearly.

The 'small bifaces' also form a small cluster group – could they similarly be the output of an individual? The original analysis found corresponding 'small' groups both here, and on EH excavation at the other end of the site. On EH the small series was dispersed across the excavation, perhaps suggesting that various individuals were involved over a longer period. It will be shown below that in general there is more variation among small than larger specimens.

Table 4.1 Kilombe bifaces, measurements and mode analysis

	EH Large group (n=80)	*EH Small group (n=15)*
L	163 +/– 22	108 +/– 12
B	100 +/– 13	68 +/– 9
T	45 +/– 9	31 +/– 6
T/B	0.46 +/– 0.10	0.46 +/– 0.14
B/L	0.62 +/– 0.07	0.64 +/– 0.08
BA/BB	0.90 +/– 0.23	0.69 +/– 0.14
TA/L	0.15 +/– 0.03	0.16 +/– 0.04
PMB/L	0.45 +/– 0.10	0.37 +/– 0.14

	AC/AH Large group (n=70)	*AC/AH Small group (n=6)*
L	154 +/– 30	88 +/– 10
B	91 +/– 12	57 +/– 7
T	40 +/– 8	33 +/– 4
T/B	0.45 +/– 0.09	0.58 +/– 0.05
B/L	0.60 +/– 0.08	0.64 +/– 0.05
BA/BB	0.81 +/– 0.17	0.73 +/– 0.17
TA/L		
PMB/L	0.44 +/– 0.09	0.44 +/– 0.13

	AC/AH Thin group (n=6, subset of 'Large' group)
L	134 +/– 19
B	84 +/– 5
T	24 +/– 5
T/B	0.29 +/– 0.06
B/L	0.63 +/– 0.06
BA/BB	0.91 +/– 0.09
TA/L	
PMB/L	0.45 +/– 0.08

How do the discrete groups mentioned above compare with other clustering, such as we might see in an ethnographic record? The most useful comparative series comes from a recent study by Stout (2002) working with the Langda in New Guinea. The research is notable for concentrating on individual production, and investigating how the output of individuals relates to the group norms. Plainly the influence of master-craftsmen is such that only they can produce the best and largest specimens. Apprentices are also unable to reproduce some features of the best specimens, such as a dorsal ridge (Stout 2002: 708).

The adzes have a different plan shape from classic bifaces (relatively far narrower, although lengths are in the same range), and doubtless are produced with different considerations. But is the relation of individual to population in any way similar? Stout's set of specimens is relatively small, twenty-five

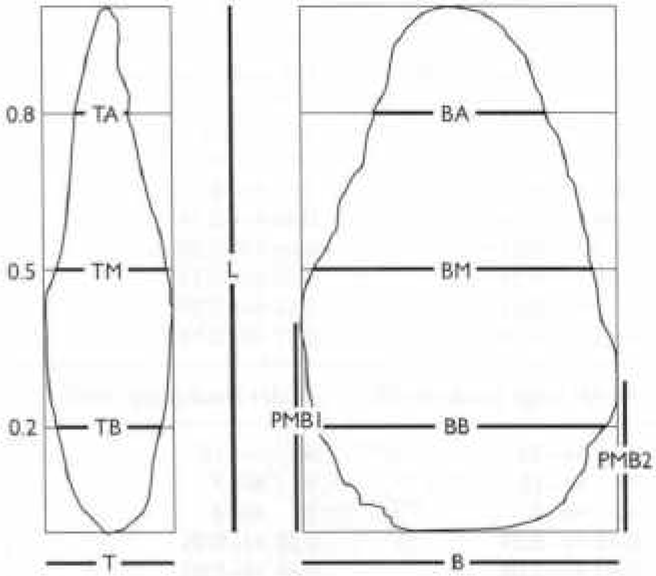

Figure 4.2 Measurements taken on bifaces, labelled following Isaac 1977.

adzes. Individuals produced up to six specimens. Most prolific were individuals 1 and 5. In terms of length and breadth their results were as follows:

Table 4.2 Langda adzes

	Number	*Length*	*Breadth*	*B/L*
Maker 1	5	160 +/– 14	33.5 +/– 1.5	0.18 +/– 0.012
Maker 5	6	192 +/– 40	33.9 +/– 2.1	0.18 +/– 0.033
All	25	187 +/– 40	35.9 +/– 3.2	0.20 +/– 0.042

Source: Data after Stout 2002.

There is a contrast: both Maker 1 and Maker 5 achieve a 'tighter' breadth and breadth/length ratio than the whole group of *c.* 9 knappers. But Maker 1 produces a very focused standardised group by length (160–198 mm), whereas Maker 5 samples most of the length variation in the whole assemblage (min 136–max 245 mm, compared with 122 and 272 for the whole group).

Overall, the comparison throws out these hints: that the output of a competent worker may reflect about half the shape variation in a whole assemblage, and differing percentages of the size variation according to context. Apart from Stout's work few other comparisons are available – Wiessner (1983) was working with individuals who could not always identify their own production. The Kilombe 'thin group' is certainly compatible with individual production, though we can never be certain in the distant past.

Density analysis

The next point is to ask whether such groups might be recognised by other techniques. A further cluster analysis has been used to look for natural groups in the whole Kilombe series, initially with the particular aim of 'comparing cluster centres for small and large bifaces'. This aim, though, was written down before the analysis took place.

It was carried out with Density analysis, now recommended by Wishart (1999) as a successor to the Mode analysis used in Gowlett (1988). A fascinating and completely unexpected finding was that the technique recognises a different grain of natural clustering from the earlier Mode analysis – and that each of these is in a sense relevant to its archaeological *Zeitgeist* – one to 'hominid tradition' questions of the 1980s, the other to the topical issue of 'individual interest'.

Whereas Mode analysis picked out the largest natural clusters, it was found that Density analysis tended to pick out small tight groups. These generally contained between two and ten specimens. The question naturally arises 'could these be the output of one or two individuals operating in very short periods of time?'

Exciting as that possibility is, it needs to be seen in a deeper context. A first question was 'how valid are the groups?' Different approaches to cluster analysis will yield different results, so a robust approach is needed. A particular issue is whether to standardise the raw measurements, so as to give equal mean and variance to each measured variable. This is often the best approach in multivariate analysis, as it gives equal importance to each variable. Yet, in a two-variable example, plotted as a scattergram, it is evident that 'stretching' the scale on one or other axis can alter the cluster groups (Wishart 1999). Arguably, shaped artefacts, in their geometric reality, offer the one case where it is worthwhile to preserve actual dimensional relationships (example: say, length ranges from 80 to 240 mm; breadth from 50 to 150 mm; equalising these two scales may alter some cluster relationships).

There is a further question of whether a logarithmic transformation would be useful. Possibly a 2 mm difference between two specimens about 80 mm long should be scaled to be equivalent to a 4 mm difference between two specimens about 160 mm long – but we do not know this. It happens, though, that most of the distributions conform closely with a normal distribution, and again this argues for not making transformations. A practical way to resolve these issues was to run analyses on transformed and untransformed data. The groups which emerged were very similar.

One way to test the results was to compare two similar analyses. The first was run on specimens from within a single excavation (EH). The second used specimens from several areas of the site (EH, AH, DJ, MM, Z). If groups had a highly local significance, they might tend to come from one locality. If they were randomly made-up, a group of (say) six specimens might be divided across several areas. Empirically, to have the results would be useful, but the relation to hypotheses need not be exclusive. Individuals who made six similar bifaces in one area might well have dropped one or two elsewhere, for example. In any case, the bifaces from some different parts of the Kilombe site are so similar in measured spectra that even a discriminant analysis is poor at classifying specimens back to their own 'home' area.

The density analysis is presented in Table 4.3.

Although it would be very good to apply a significance test to this distribution, the number of specimens expected in each cell is unfortunately too low to justify a chi-square test. Even when EH is compared with 'the rest' (that gives 96 EH specimens vs. 84 others, but distributed between twenty-two clusters) the expected frequencies are low. Nevertheless, it is possible to plot the ratio of bifaces between EH and other localities (Table 4.4)

Table 4.3 Kilombe bifaces: results of Density analysis

Cluster No.	*EH*	*AH*	*MM*	*DJ*	*KZ*
1	5		1		(1)
3	1	2	1		
4	2	1	1		
5	5	3	1	1	1
7	1		1		1
8	2	3	1		
12	4				1
16	5			1	
17	8		3		
21	2			1	1
22	6	2	1	5	2 (1)
23		3	2		
26	6	1	3	1	
29	6			1	
30	2		1		
37	2		1		(1)
58	2				1
Totals of bifaces in analysis	96	23	33	12	16 (3)

Table 4.4 Ratio of EH bifaces to all other bifaces in Density clusters

Ratio in cluster of EH bifaces to all other bifaces	<0.25	0.25 – 0.5	0.5 – 1.0	1.0 – 2.0	2.0 – 4.0	>4
Number of clusters	0	1	5	3	3	4

In seven out of the twenty-two clusters, EH specimens outnumber all others by at least 2:1; in contrast, they are outnumbered in similar proportion in only one out of twenty-two – whereas the distribution ought to be roughly symmetrical around the value 96:84 (~ 1:1).

Further inspection of the Table 4.3 shows that Cluster 22 mops up in addition to EH specimens, as many as five (50 per cent) of the DJ specimens; moreover, each of the remaining DJ specimens clusters with group dominated heavily by EH.

This tends to signal a very close relationship of similarity between DJ and EH, which makes sense in terms of the site plan (Figure 4.1). It contrasts with AH, which although a small set tends to dominate each of its own clusters.

Overall, these results can be taken to indicate that the cluster segregation is quite highly structured, and certainly non-random. From that we could proceed to look at selected clusters, to see what might be specific and individual(ised) about them.

The clusters do show some distinctive features. First, cluster 1 picks out a small, fairly thick-pointed group. This seems quite similar to the group in AC/AH isolated by Gowlett (1988) (see Table 4.1).

Then groups 12 and 16 share a very similar footprint, very close to the Kilombe mean, but they have quite different thicknesses. Cluster 12 is about the 'normal' average thickness for Kilombe, but sixteen (and clusters 22 and 29) are all about 20 per cent thinner than the average. This idea of a 'footprint' sometimes being much more stable than the associated thickness bears out previous studies, which distinguished AH from Z mainly by the latter's much greater thickness (Crompton and Gowlett 1993).

Certainly something other than allometric weight-saving is involved here, as Cluster 16 is far thinner than the similarly-sized Cluster 12. Cluster groups 22 and 29 seem to pick out larger and smaller versions of the 'fairly thin biface'.

Lastly, if the cluster groups are valid, would they stand out on the excavation surface? Figure 4.3 shows the plots of the group members within the EH excavation. This is merely preliminary work. Only 'pairs' and 'trios' are plotted. There are approximately 100 bifaces from the 25 m^2 excavation, yielding an expected nearest neighbour mean distance of 0.25 metres, if the pieces are randomly distributed (Clark and Evans 1954). The actual mean nearest neighbour distance for cluster pairs is 3.25 metres, and for trios, 1.85 metres. This result may indicate that very similar bifaces have a strong tendency not to occur together. On the other hand, if the whole 25 m^2 contained two bifaces set at random, the mean expected distance between them would be 2.25 metres; and between three specimens, 1.75 metres. The results are inconclusive, but on average the second member of a pair is more than ten times more distant than the nearest biface.

Table 4.5 Mean measurements (cluster centres) of selected Kilombe clusters

Cluster No.	*T*	*L*	*B*	*BM*	*BA*	*BB*	*V7*	*V8*	*TA*	*T/B*	*TA/L*	*BA/BB*
Cluster 1*	33	104	69	61	36	65	29	33	15	0.48	0.14	0.55
Cluster 12*	45	151	101	97	74	86	54	65	24	0.45	0.16	0.86
Cluster 16*	34	153	95	90	64	81	61	66	18	0.36	0.12	0.79
Cluster 22*	27	119	76	72	50	66	40	47	16	0.36	0.13	0.76
Cluster 29*	36	165	102	100	70	83	71	85	19	0.35	0.12	0.84

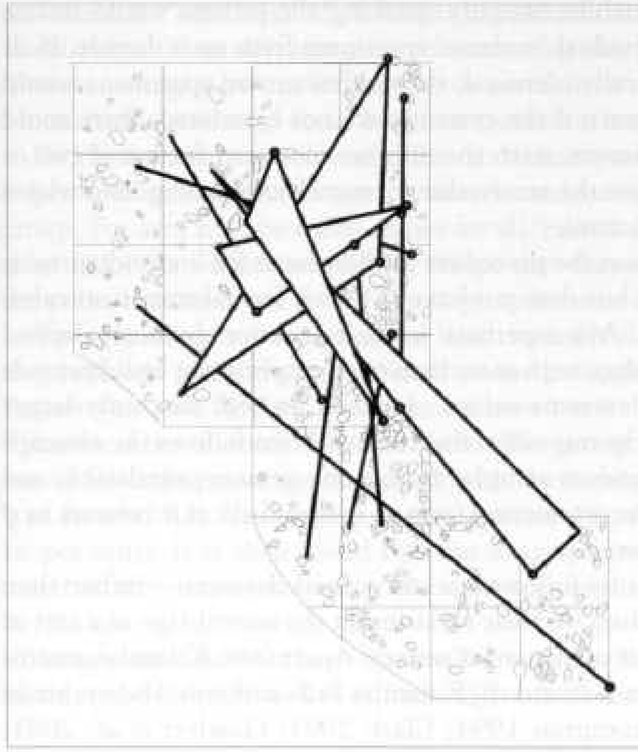

Figure 4.3 Clusters of bifaces within Area EH isolated by Density analysis: pairs and trios are shown linked.

'Extreme cases'

A separate approach to seeking the individual in these biface assemblages is to study *idiosyncracy*. Here the idea was to isolate specimens from the extremes of the range, and examine their characteristics. Which biface is the most extreme in this or that character, perhaps such as to be on the edge of usability? In this study bifaces had been measured by eight and ten variables: suppose we selected the specimens that were more than two standard deviations from the mean (plus or minus) for any variable – would they be equally far from the mean in other variables? Where there are systematic high correlations between a set of variables, this would be expected – so for Breadth and Length, the shortest might also be the narrowest. But how far would the principle hold? In bifaces, correlations range from about 0.90 to about 0.10, depending on the variable pair selected (Gowlett 1996b), so the outcome could not really be predicted.

In order to come up with a methodology which concentrates on the individual case, and rather than deal in standard deviations (and hence fractions of artefacts!) I have adopted an approach of selecting specimens representing the minimum and maximum values for each measured variable in a dataset. Thus for Length, we select the longest and the shortest cases. As this is done for an average of nine variables, roughly speaking the process would isolate from two to eighteen individual 'extreme' specimens from each dataset. If all the bifaces were geometrically identical, then as few as two specimens would emerge (smallest and largest); if the extremes are not correlated, there could be as many as 9 × 2 specimens, with the number increased further if two or more specimens should have the same value for some variable (e.g. two with a maximum thickness of 55 mm).

An important point about the procedure in this search for 'individuality' is that it needs to be robust, but does not have to follow formal statistical rules. The approach is empirical. At a superficial level, it does not obviously depend on sample size: any assemblage with more than twenty specimens could provide the necessary number of 'extreme values'. It could be held that only larger assemblages will provide the rare cases. But that assertion follows the assumption that we are taking random samples from some greater population, and at best we can only take the production from an area and ask if it behaves *as if* such assumptions were true.

Thus the approach can be followed across varied datasets – rather than concentrating on mean values we treat variation in the assemblage as a sort of hollow globe, and study the points on its surface. Apart from Kilombe, assemblages used here came from Kariandusi, Kalambo Falls and Sidi Abderrahman Cunette (Gowlett and Crompton 1994; Clark 2001; Gowlett *et al.* 2001; Biberson 1961; Crompton and Gowlett 1997; Raynal and Texier 1989).

The first interesting result is that in most datasets the selection tends to produce about ten to fifteen specimens. In other words, most of the extreme specimens reach their extremeness in only one or two variables. It is very rare for an individual specimen to reach its extremeness in as many as four of the nine measured variables.

This observation holds for each of these datasets (Table 4.6)

Even in the highly standardised Sidi Abderrahman Cunette series, the most 'extreme' biface is extreme in only five out of nine variables. In that particular

Table 4.6 Extreme cases among bifaces

	Extreme cases	*Small extremes*	*Large extremes*	*Out of total*	*Max. individual extremeness*
Kilombe EH	13	8	5	95	3
Kilombe AC/AD	10	5	5	121	4
Kariandusi Lava	19	11	8	73	3
Kalambo Falls A6	13	6	7	45	4
Cunette	5	3	2	122	5
Kariandusi obsidian	15	10	5	60	3

case the utter 'smallness' of a biface is so marked that it carries across numbers of variables. Generally, however, remembering that between two and twenty specimens might be marked by one or extreme or other, it is notable that in five assemblages out of six at least ten specimens are involved.

Do these extreme specimens differ from their parent group in more general respects? Here one could examine the selected specimens against their parent group. For area EH the mean values for all 'extreme' specimens are much the same as for the whole assemblage, except that they are smaller. This bears out the point that there are fewer very large specimens making a contribution.

The results give the impression that the individual making a large biface may have less possibility of choice than the individual making a short biface. To test this idea further, these results have been checked against the whole Kilombe series of about 400 specimens. The group of specimens shorter than one sd from the mean was compared with the corresponding group more than 1 sd longer than the mean (i.e. the shortest 16 per cent versus the longest 16 per cent). It is then found that the long specimens have not much more than half the shape variation of the short specimens:

57 longest bifaces Mean L = 199 mm B/L = 0.56 +/– 0.05 T/B = 0.46 +/– 0.07
56 shortest bifaces Mean L = 101 mm B/L = 0.67 +/– 0.08 T/B = 0.51 +/– 0.14

The standard deviations on the breadth/length and thickness/breadth ratios make this point clearly. The figures also demonstrate both the extraordinary symmetry of the length distribution around its mean, and the shape-shifts which prevent bifaces from becoming disproportionately heavy as they double in length from *c.* 10 to *c.* 20 cm.

Hence, the individual making a long (?impressive) biface does indeed have far less shape choice than the individual making a short biface.

Is the underlying cause of this restriction more function or appearance? The question touches on issues previously raised in allometry studies, where Crompton and Gowlett (1993) concluded that the largest bifaces were relatively narrow and relatively thin mainly through an effort to limit weight. The causes of allometric adjustment in small specimens were less plain, and it may indeed be that the allometry measures in small specimens are simply giving the average of a variable set.

Extending the search. . . .

One of the puzzles of the Acheulean is to know how far comparisons can be extended. Europe does not in general preserve extended surfaces covered in bifaces, like Africa, or India. Nevertheless, up to 1,000 bifaces can come from the various localities of important sites such as Boxgrove, or the Somme (Roberts and Parfitt 1999; Tuffreau *et al.* 1997). For the Acheulean, European datasets can be very like African ones, but some differences can be expected.

Here Beeches Pit offers an example, a site where the individuality of the bifaces is the first thing that impresses itself. Beeches Pit is a Middle Pleistocene site in Suffolk, England, dated to about 0.4 Ma (Andresen *et al.* 1997; Gowlett *et al.* 1998; Gowlett and Hallos 2000). Springs and the availability of flint drew humans to occupy the north bank of a watercourse. Although flint-knapping activities by a creek were obviously prolonged, relatively few bifaces were discarded. Each one therefore appears distinctive.

Nevertheless, there is also a clear difference between the two site localities at Beeches Pit. Differences between small and large biface specimens are so pronounced that one would assume different functions were envisaged.

The biface finds are summarised in Tables 4.7 and 4.8. In the upper part of AH excavation two small bifaces were found almost side by side. Nearby were pieces of flint which could have made suitable blanks for further similar specimens. These two artefacts, less than 100 g in weight, are considerably different from one another, although of similar length.

In AH, 20 metres to the east, and at a lower level, several biface specimens were found scattered in the flint concentrations that lie just to the north of a set of hearths (Figure 4.4). One biface blank is linked to these through refits. It would be hard to determine whether the others are contemporaneous or not. Each specimen, however, is distinctive – they show a set of different approaches to manufacture, and different design targets. It could be said perhaps that the seven Beeches Pit bifaces include more variation in some respects than the entire Kilombe set (Table 4.8).

The measurements do however combine to show rather similar variation to that on early African sites (compare with Table 4.1). At Kilombe, it seems natural to combine, to look at distributions and the whole pattern. At Beeches Pit it seems almost an offence to combine measurements for artefacts that are so clearly individual and distinctive (Figure 4.5).

Yet, one can argue that both approaches are valid. The rationale is summarised well in James' point (2003) of the individual and the pattern. Even among its host, each Kilombe specimen is an individual expression, as has been shown. Equally, each Beeches Pit specimen so distinctively made is made by an individual working *within* a group norm and collective cultural memory – the statistics 'ghost in' the thousands of other bifaces made by those people on that landscape and never to be found by us.

Conclusion

In this study I have tried to seek out and appreciate individuality even within the supposed sameness of the Acheulean. The approach has been exploratory – some elements or patterns are convincing; others could be artefacts of randomness, and require further testing.

Two things seem at least to be strong likelihoods. First, that modern human individuals making tools and working within group norms operate within a

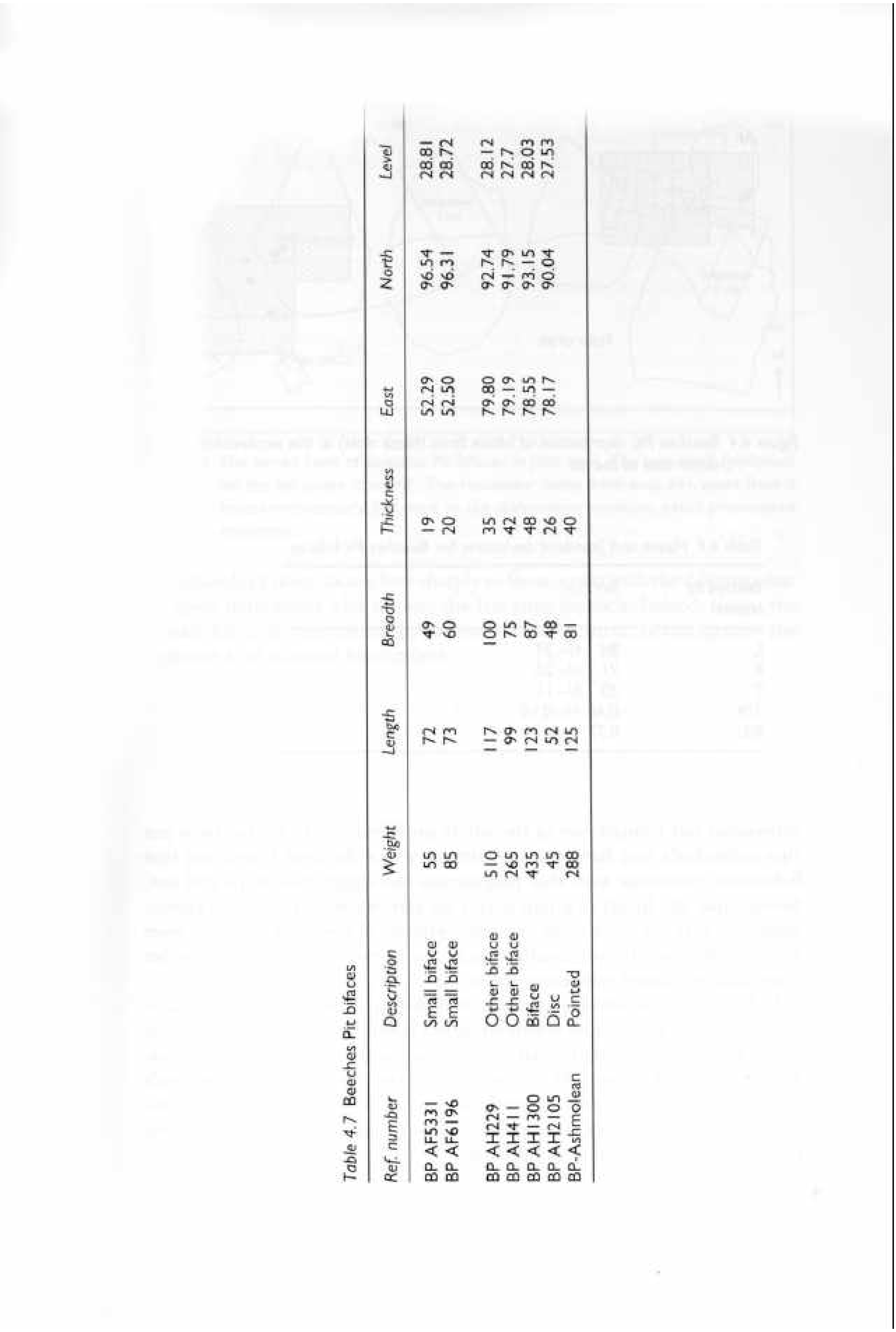

Table 4.7 Beeches Pit bifaces

Ref. number	*Description*	*Weight*	*Length*	*Breadth*	*Thickness*	*East*	*North*	*Level*
BP AF5331	Small biface	55	72	49	19	52.29	96.54	28.81
BP AF6196	Small biface	85	73	60	20	52.50	96.31	28.72
BP AH229	Other biface	510	117	100	35	79.80	92.74	28.12
BP AH411	Other biface	265	99	75	42	79.19	91.79	27.7
BP AH1300	Biface	435	123	87	48	78.55	93.15	28.03
BP AH2105	Disc	45	52	48	26	78.17	90.04	27.53
BP-Ashmolean	Pointed	288	125	81	40			

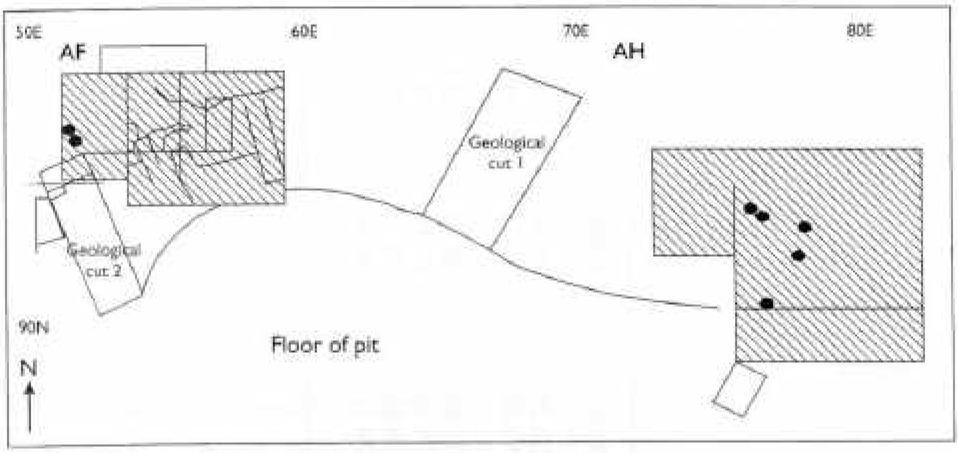

Figure 4.4 Beeches Pit: distribution of biface finds (black dots) in the excavations on the north side of the pit.

Table 4.8 Means and Standard deviations for Beeches Pit bifaces

Beeches Pit bifaces	*(n=7)*
L	94 +/– 29
B	71 +/– 20
T	33 +/– 11
T/B	0.46 +/– 0.10
B/L	0.77 +/– 0.10

substantial but limited part of the whole group range. A case has been put that individuals may have operated similarly in Acheulean times, and that behaviour consistent with this proposition can sometimes be picked out. Second, that the limits of group norms are somewhat, but not very, elastic. Somebody making a biface can go to the extremes of the range in one or more variables, but not all; and usually in only one or two. It is not clear whether functional or cultural constraints cut in first.

In Palaeolithic archaeology there is no difficulty in seeing the individual – the comparison with history is something of a false one. The initial assumption is that history sees the individual clearly, whereas archaeology is anonymous. This is only so if we require a name. The better comparison is rather with tombstones – in history many individuals feature as a name, not for any actions. They have historicity, but one that is then lost in any manipulation that seeks to extract more meaning from the data.

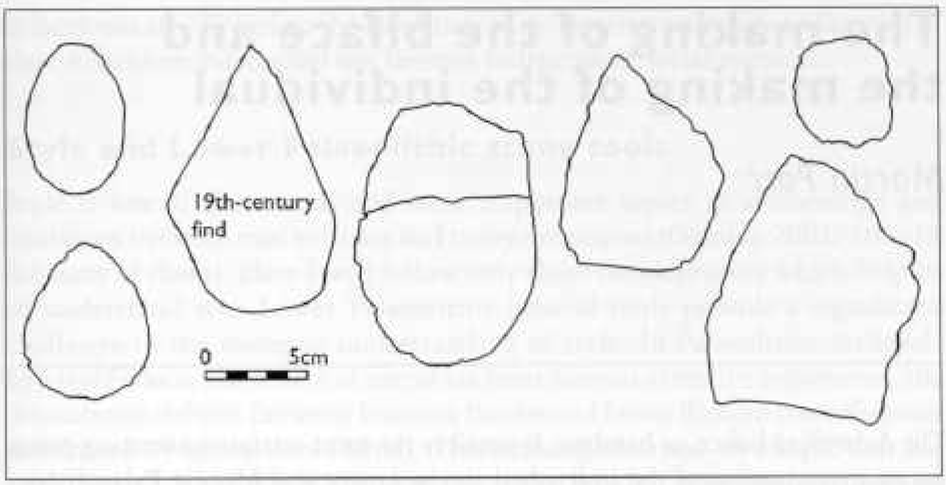

Figure 4.5 The varied form of Beeches Pit bifaces in plan view. The two small specimens on the left come from AF. The remainder come from area AH, apart from a nineteenth-century find now in the Ashmolean museum, exact provenance unknown.

Archaeology must choose how sharply to focus, again with the dilemma that the more individuals who feature, the less time for each. Indeed, this is the human dilemma highlighted by the social brain – we all labour against the cognitive load imposed by numbers.

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(The bibliography does not appear separately in the printed volume and is reconstructed below).

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