A SKULL OF NEOLITHIC SHAPE FROM NEWPORT PAGNELL, BUCKINGHAMSHIRE

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Introduction

The anthropologist who is asked to identify an isolated skull knows that unargued pronouncements about cranial affinities are no longer acceptable. A back-lash of this healthy scepticism is so to qualify one's identification as to make it meaningless – 'it *could* be anything from Upper Palaeolithic to modern'. Here, of course, I parody: but the state of British craniology is not good.

An essential reason for being cautious about identification is that there is not a corpus of published statistics, of central tendency and dispersion, for groups of skulls from various parts of Britain and various archaeological periods. Since Morant's *Biometrika* 'school' left the task uncompleted in the early 1940's, no-one has systematically published the descriptive statistics of British crania.

So it is not possible to calculate reliably the probabilities of being correct if, let us say, an individual skull is identified as Iron Age rather than Anglo-Saxon.

Nevertheless some of the parameters of variation, albeit imprecisely calculated, should allow the tentative identification of a really distinctive skull. Fortunately, the skull from Newport Pagnell has measureable qualities of distinctiveness.

Discovery and Appearance

In April 1978 the Newport Pagnell Police told the Buckinghamshire County Museum in Aylesbury of the discovery of a skull on disturbed ground near Newport Pagnell.[1] Mr. Farley of the Museum visited the site and found nothing else but the unassociated fragments of parts of a human femur.

The skull is that of a male who died in advanced middle-age. Such teeth as have survived show marked attrition. Most striking are the anterior teeth on which attrition has caused convex, rolled over edges on the labial side. The femur is of a male, apparently of tall stature.

Identification by Three Variables.

In Fig. 1 the distinctiveness of the Newport Pagnell skull is well shown. My diagram is strongly condensed from Brothwell (1960) and I have added some extra information. We can see that by the criteria of cephalic index and cranial height the Newport Pagnell skull is hyper-Neolithic in shape, meaning that it is very narrow and with a high vault.

It is the averages of samples which are plotted on Fig. 1. In each sample there is of course a range of variation and I show this dispersion for one (the Winchester Medieval) by means of the crosses on Fig. 1. Newport Pagnell falls outside the range of variation of the Winchester Medieval sample; however it is most unlikely to be outside a similar plot of samples closer to it, for example of the Anglo-Saxons.

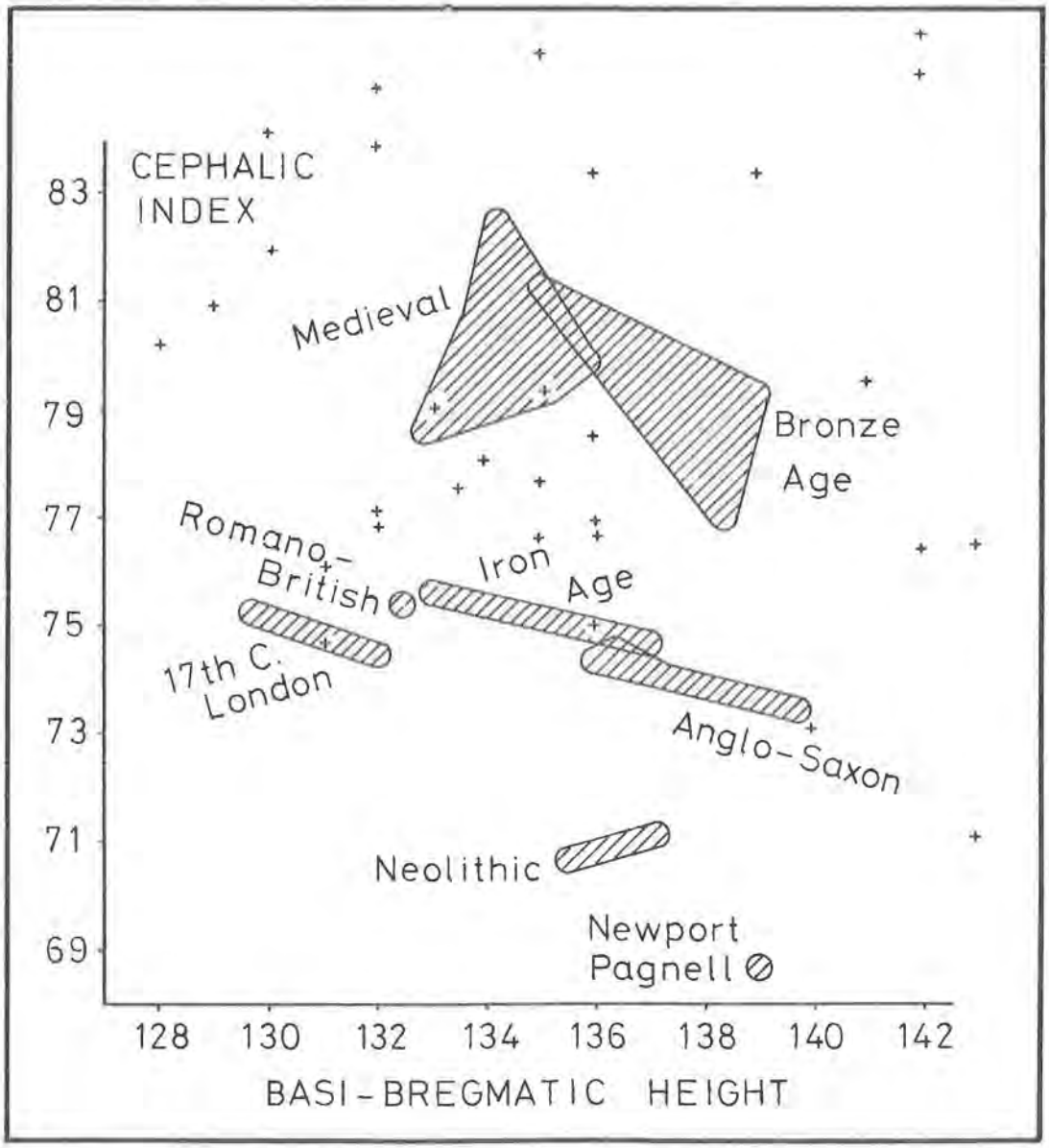

Fig. 1. The affinities of the Newport Pagnell skull when using Brothwell's (1960) method of cephalic index and cranial height. Included in the shaded area are the means of the following samples of male skulls: Neolithic, Morant (1928) & Brothwell (1960): Bronze Age, Brothwell (1960): Iron Age, Morant (1928) & Brothwell (1960): Romano-British, Brothwell (1960): Anglo-Saxon, Layard and Young (1935) & Brothwell (1960): Medieval, Little (1943), Brothwell (1960) & Tattersall (1968): 17th C. London, Morant (1928) & Brothwell (1960).

The Medieval area includes the mean of a sample from Winchester taken by myself from the BM (NH) data sheets. The individual Winchester specimens are marked as crosses.

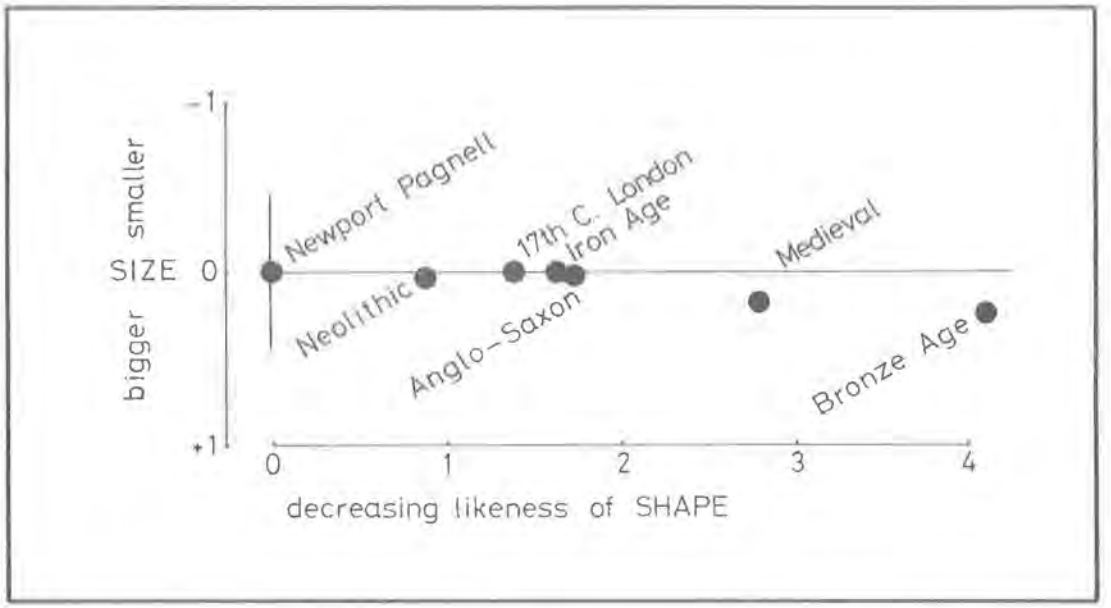

Fig. 2. Penrose distances of size and shape using six variables of cranium and face. The samples are: Neolithic, Morant (1928): Bronze Age, Morant (1928): Iron Age, Morant (1928): Anglo-Saxon, *Burwell* in Layard and Young (1935): Medieval, *Winchester:* 17th C., *London* in Morant (1928).

So an unqualified identification is not possible. Nevertheless this caution about variation does not alter the justifiable conclusion that by far the best match for the cranial part of the Newport Pagnell skull is with the general form of the Neolithic cranium.

Identification by Six Variables

In Fig. 2 I have extended the comparison to an analysis of six variables which describe the basic geometry of the cranium and face.[2] The variables are:

L Maximum cranial length
B Maximum breadth (breadth across parietals)
H' Basi-bregmatic height (height of the cranium)
J Bizygomatic breadth (breadth across the zygomatic arches)
GL Basi-alveolar length (projection of face)
G'H Upper facial height (height of face from root of nose)

In the case of Newport Pagnell the values in mm are: L = 191, B = 131, H' = 139, J = ?127, GL = 96, and G'H = 76.

The multivariate technique I have used is the well-tried Penrose method of size and shape coefficients.[3] For insufficiency of readily available data I have had to leave out some important groups included in Fig. 1, for instance the Romano-British of Frilford.

Using Newport Pagnell as the point of reference we can see that it is still closest to the Neolithic.[4] On the size axis Newport Pagnell's mean size distance from all the other samples is about the same, that is close to zero. Thus the differences between Newport Pagnell and the rest are overwhelmingly those of shape.

Conclusion

The best match for the shape of the Newport Pagnell skull is Neolithic. Of course, a decision on whether it is Neolithic in age and not merely an unusual skull of another period depends on the more decisive evidence of archaeological method, but this is at present not available.

What is shown by this brief anatomical analysis is that the Newport Pagnell skull has the general shape of a Neolithic skull, even though it may some day be shown to be of another archaeological period.

1. On Kickles Farm, on the river bank at SP 863 453.
2. See Brothwell (1972) for description.
3. The units of analysis are standard deviation units, calculated by the standard deviations for analogous measurements given by Howells (1973) for *Homo sapiens sapiens.*
4. Distances have meaning only as distances from Newport Pagnell. Because the Iron Age and Whitechapel samples are next to each other on Fig. 2 does not necessarily indicate that they are that distance apart *from each other.* To estimate that would require the calculation of a new pair of coefficients using one or the other as the point of reference.
5. The author's address is Department of Anthropology, University of Sydney, Sydney, 2006, Australia. I am grateful to two staff members of the British Museum (Natural History), namely Rosemary Powers for discussion about the Newport Pagnell skull and Theya Molleson for letting me incorporate some information from the Winchester data sheets into this report.

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