

Palaeolithic Pioneers

Behaviour, abilities, and activity of early *Homo* in European landscapes around the western Mediterranean basin ~1.3-0.05 Ma.

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I dedicate this book to the memory of the late Professor Derek A. Roe (1937-2014), who was Professor of Palaeolithic Archaeology in the University of Oxford and enthusiastically supported my field-work in Spain at Cueva Negra del Estrecho del Río Quípar (Caravaca, Murcia) and Sima de las Palomas del Cabezo Gordo (Torre Pacheco, Murcia).

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1. Introduction

In western Mediterranean Europe there is convincing evidence for some human presence during the late Early Pleistocene (~1.3-0.98 Ma), especially from the final, or latest, Early Pleistocene (0.98-0.78 Ma) onwards. An important epistemological matter is that of how we should interpret the findings. It touches on complex problems of how to define characteristically human behaviour within the framework of the Quaternary record and how to chronicle its evolutionary trajectory from its australopithecine roots. How appropriate are those interpretations of some archaeologists or anthropologists which appeal mainly to studies of later stone-age human behaviour? How far are models appropriate that appeal mainly to studies of animal behaviour? How far might early presence in Europe of humans around 1 Ma (1 million years ago) reflect some lessening of pressure to which the biology of early *Homo* was subjected by natural selection? Might behavioural adaptation to environmental and geographical circumstances have begun to apply a brake on biological adaptation to these in *Homo*?

Whilst Darwinian evolution of *Homo* by natural selection cannot be gainsaid, care must be taken before paying so much obligatory attention, to the impingement on Palaeolithic site-formation of diverse biological agents and physical processes, that the earliest human actors get taken for granted, as having played no more than ephemeral rôles of hapless walk-on bit-parts in a much larger, multifactorial, dynamic, spatio-temporal, palaeoecological process.

A fundamental scientific epistemological problem is that the activities of early *Homo* were unlike the behaviour of modern great apes, on the one hand, and, on the other, unlike that of recent or modern hunter-gatherers. Before assuming that an appropriate analogy for those activities might be inferred from consideration of relationships between coetaneous Pleistocene mammals and their environments, it is a scientific requirement that rigorous inquiry should be able to demonstrate, on a substantive basis of commensurable data from the past, that Early Pleistocene human behaviour developed in a manner analogous to that in which the behaviour of coetaneous mammals was evolving.

Nor is that the only epistemological problem. As long as a short chronology for the European Palaeolithic was regarded as the least unlikely working hypothesis, some considerations were put on one side that had been elaborated by thoughtful students of the Palaeolithic, such as Bailey (1983), Binford (1989), and Gamble (1993). Among concerns that it is worth revisiting were matters

of temporal (Bailey) and behavioural (Binford) commensurability with later stone-age archaeology, as well as plausible biological analogies (Gamble) for early human ranges undergoing expansion.

The past twenty years have witnessed major palaeoanthropological discoveries in Europe, as well as significant insights from palaeogenetics. Matters of phylogeny have been to the fore. There have been well-known efforts to put signatures of particular lineages of *Homo* on particular European Palaeolithic complexes. At the same time, remarkable advances have taken place at all technical levels, from dating to taphonomy, from lithic analysis to palaeoclimatology, from microtomography of fossil bone to virtual reconstruction of archaeological sites or human skeletons thanks to application of advanced computer programs.

Considerable results have been attained by bottom-up development of empirical research procedures, directed often to elucidate phenomena that themselves were detected in fortuitous circumstances. To the extent that working hypotheses, albeit testable only within restricted conditions, have enabled some artificial provisional models to be put forward, the degree of compatibility or commensurability of the latter may enable some elaboration of middle-range interpretations, albeit constrained. Constraints, though, can be a timely restraint on those self-serving middle-range theories that are immune to refutability through analysis of the mute prehistoric heritage. All too often, time-honoured considerations of social studies may regard them as self-evident deductions from supposedly axiomatic explanatory theories about behaviour.

These can have a disconcertingly anti-evolutionary flavour. Their explicit actualism can have a baleful influence on students of human evolution and Palaeolithic archaeology. They may be tempted to interpret the Pleistocene as, so to speak, 'telescoped' backwards onto a logarithmic time-frame, and to do so, especially, when thinking about the possibility of detecting signs of supposed human progress towards Holocene behaviours in the early Palaeolithic record. The single species conjecture, namely that always the savviest lineages have swept the board (post hoc ergo propter hoc), smacks more of Spencerian winner-takes-all than of gradual Darwinian natural selection within a vast spatio-temporal range of variation. It has tinged some biological proposals: witness the kerfuffle over our alleged African fore-mother, mitochondrial Eve. Here, fortunately, febrile conjectures have been tempered by rigorous analysis of the genetic variation they purported to interpret.

Among substantive grounds for interest in the question is clear evidence of human presence and activity from as early as the final Early Pleistocene (not to mention abundant evidence from the Middle and early Late Pleistocene).

Moreover, there is a wealth of Quaternary palaeoenvironmental information from Italy, France and Spain, including palaeobotanical indicators of Arctotertiary relicts and perhaps locally circumscribed refugia. The extreme paucity of human bone at palaeontological sites of animal carnivory implies that early humans were far thinner on the ground in Mediterranean Europe than were most of the larger herbivorous mammals, even if they were better prepared to evade or avoid large felid predators. Most Palaeolithic traces of early human behaviour seem ephemeral when set against a back-drop of millennial periods of Quaternary climatic oscillation, even when they have been well excavated in closed stratigraphical layers that are reasonably well dated and offer a variety of palaeoenvironmental data. Assemblages from such sites are relatively few and form the principal object of this review, which definitely will not attempt to be a gazetteer of the many hundreds of recorded sites and assemblages that do not meet those criteria.

Two boundary considerations are worth keeping in mind. First, early *Homo* was able to move into southwestern European regions from which Hominoidea had disappeared ten million years before, where the environment and vegetation had undergone enormous change and hominoid biotopes had vanished. Nevertheless, early *Homo* could survive, at least for a while and from time to time, in their new surroundings notwithstanding big differences from those circumstances in which their African ancestors had evolved.

Secondly, before fifty-thousand years ago (0.05 Ma) there is no evidence for presence in southwestern Europe of either skeletally-'modern' *Homo sapiens* or Upper Palaeolithic assemblages. In other words, the palaeoanthropological matters of interest in our region during the time-span ~1.3-0.05 Ma reflect archaic humans and activities without clear-cut analogies in the subsequent archaeological record of southwestern Europe. What can be inferred about them? Our aim is to scrutinize them on their own terms, without involving considerations of skeletally-'modern' humans and their behaviour. Can there be detected in the spatio-temporal record during ~1.3-0.05 Ma in southwestern Europe regular irregularities or irregular regularities? Here, careful attention must be paid to the significance of southwestern European caves and rock-shelters in the early Palaeolithic record which could be biased on account of the wealth of archaeological and anthropological remains they have provided, often in deep stratigraphical sequences.

The review offered in this short book is neither concerned with where, how, or when Early Pleistocene *Homo* entered southwestern Europe, nor yet with which, nor with how many, species were present. It will not deal with the appearance in western Europe of anatomically-'modern' *Homo sapiens* and

Upper Palaeolithic tool-kits in the second half of the Late Pleistocene (i.e., after 0.05 Ma). Its concern is with much earlier periods of Pleistocene time, and with how to relate small-scale palaeoanthropological findings, localized in time and space, to larger-scale spatio-temporal inferences drawn from other scientific disciplines about geographical and palaeoenvironmental variability in western Europe around the Mediterranean basin. The focus of attention is the question of commensurability, or maybe lack of it, between the former and the latter. It behoves scientists to maintain a sceptical attitude infused with critical realism. It is inappropriate to assume beforehand that which it should be the task of inquiry to demonstrate. It is more prudent glumly to view the glass as being half-empty than to enthuse about it being half-full.

In scientific inquiry it is usually appropriate to start out with a sceptical attitude to the possibility that allegedly realistic models are likely to be adequate if they are built up from working hypotheses expressed as biconditional propositions (e.g., if x, and only if x, then y) that are not open to refutation within the selfsame universe of data that the model purports to interpret. Because the testing of such working hypotheses usually is inspired by a researcher's suspicion that, for an intriguing new instance, a previously acceptable proposition may not hold up, bottom-up tweaking of models is an unending methodological and epistemological adventure into trying to understand the nature and interactions of material phenomena. Human bones, stone artifacts, and palaeoenvironmental remains are material phenomena.

A counsel of perfection may be unattainable for several reasons. First and foremost is the matter of continual dynamic change which underpins biological evolution, climatic and environmental evolution, and technological and cultural evolution, and which, moreover, may have been non-linear and irregular, and much palaeoanthropological and prehistoric archaeological research is concerned with trying to discern patterns in time or space of regular irregularities or irregular regularities.

Furthermore, neither modern great apes nor modern stone-tool using communities are commensurable with *Homo* in the Early and Middle Pleistocene, or even the early Late Pleistocene; at most, a few aspects of modern observations sometimes may offer tantalizing analogies, albeit hardly exact parallels, let alone simple explanatory models drawn top-down from overarching theories whether derived from Primate biology or humane social studies. Indeed, when applied to behaviour, 'modernity' is a metaphor, and it is more appropriate to refer to behavioural variability rather than behavioural modernity (Shea, 2017, 108-109). Quaternary palaeoenvironmental oscillations, palaeo-biogeographical fluctuations, and paleoanthropological demographical

instability, perhaps sometimes including disappearances and reappearances, complicate any attempt to interpret the deep past, if only because of the frequent chronological difficulty of intercorrelating those with sufficient accuracy and precision. Prudence counsels giving pride of place to discourses about how survival by early humans could have developed, instead of giving it to dissecting matters of who did what, where, and when.

Among biological adaptations in *Homo* that may be envisaged in the gradual evolution of typically human behaviour are neurophysiological changes in the brain which involved cognition; in particular, the evolutionary development of long-term procedural memory, and the likely part played by haptic memory that has bequeathed us hard evidence in the Palaeolithic record. A possibility that rudimentary language had evolved and facilitated complex activities cannot be ignored. Particular consideration must be given to strategies for survival and extraction of natural resources in long-vanished environments, especially those with noteworthy biodiversity, and to the modification of raw material by techniques ranging from making a variety of tools to the use of fire for protection and preparing food.