
Introduction

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Ideas are the most powerful inspiration of human behaviour. Once conceived and launched they can take flight and soar on, far beyond the temporal bounds of the person who inspired them. This is of the very essence of culture, and a subject near to the heart of Glynn Isaac, who devoted many years to studying human origins and evolution. But ideas can become buried, like an artefact covered by sediments. Hence the importance of republishing this collection of Isaac's papers, which bring together in a series many of the most penetrating thoughts conceived within the domain of human evolution.

A principal purpose of this introduction must be to stress that this is not just a collection for Palaeolithic archaeologists. Isaac's ideas about the variation of archaeological evidence in time and space have a far wider relevance, and should be made readily available to others – to archaeologists of all periods. Many recognized Glynn's pre-eminence in his particular area, but were perhaps less inclined to study a field so far from their own, and to reapply his thoughts toward their own work. His work, indeed, has a relevance beyond archaeology – in the life sciences, earth sciences, and anthropology in its broadest sense. As he wrote, 'In the study of human evolution, the distinctions between archaeology, human palaeontology and evolutionary biology are steadily breaking down' (chapter 3). Separate as these fields tend to remain in the nature of their primary data, Glynn's mind was able to embrace them all, and scientists of the various disciplines in their turn recognized this wide-ranging contribution.

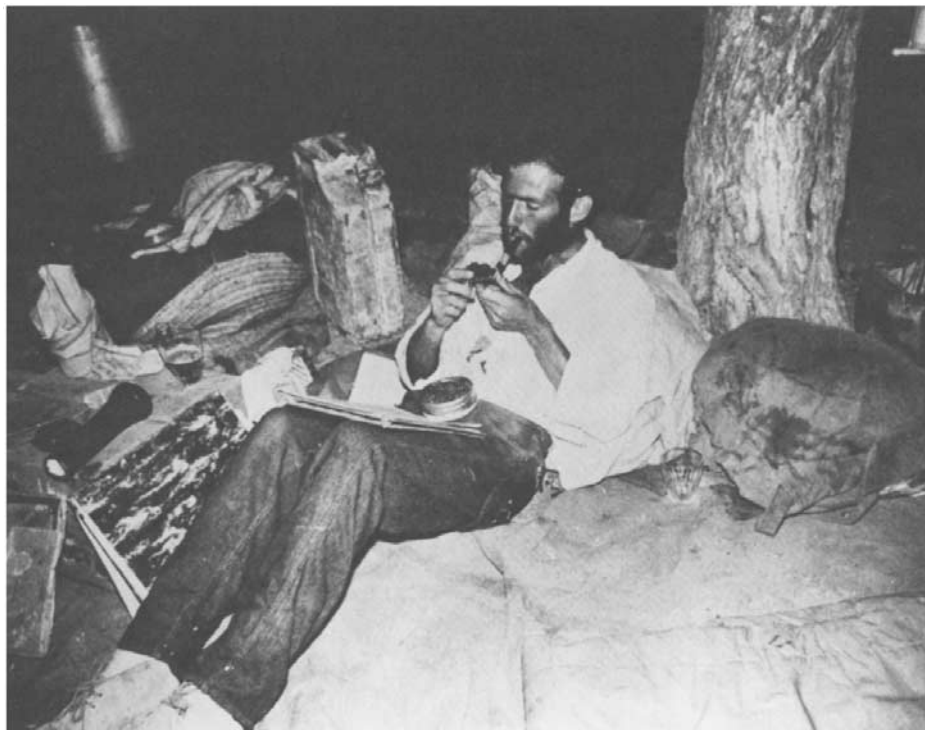
To a larger extent, then, the chapters can speak for themselves; but the truism is not quite true. Each represents a careful formulation of thoughts and facts over a limited period. Here are eighteen such capsules of thoughts scattered along 25 years of a career. The articles are a selection of a particular genre; mainstream scientific archaeological papers, of various levels of formality. As such they cannot provide their own complete context; although they are very suitable for general reading, they are addressed to particular problems. In some areas, particularly those concerned with model-building in early hominid evolution, there is a clear evolution of ideas in the successive chapters. Other chapters represent views which

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Glynn would scarcely have changed, if at all. Wide-ranging as his themes are, we must remember too, that limited space restricts this volume to include less than half of his published papers. These were ably selected by Barbara Isaac for their special interest – a daunting task since the material omitted would itself be the basis for a considerable career.

Inevitably there are overlaps in the chapters, but it is hardly necessary to make much of the conventional explanation, that the subjects are treated from different angles; the differences of substance in the chapters far outweigh any similarities. More pertinent, and leading in to the following point, is that there are gaps – papers covering some aspects of Isaac's work that could not be included here, for example, detailed stratigraphic studies and site reports.

The chapters, indeed, represent just one strand in a career which, like many others in archaeology, was ultimately based on the inspiration derived from a few major pieces of fieldwork. Carried out over periods of years, these contributed the kind and quantity of data which it is logical to publish eventually in the form of monographs. In the twenty-five years of his career Glynn Isaac undertook and carried through three such major projects, all based in East Africa: the excavations at Olorgesailie, the subject of his doctoral dissertation, and which he published as a monograph (Isaac, 1977b); East Turkana, the monograph of which was largely complete in manuscript when he died (Isaac, in prep.); and Peninj, west of Lake Natron, where he carried out fieldwork in the early 1960s, and where he had begun to return in recent years.

Without labouring the point, it is worthwhile to bear in mind the context of the

selected chapters in terms of their broader relationships – with the major pieces of fieldwork, and with Glynn's other works, larger and smaller, such as introductions to edited volumes, and book reviews. It is equally important, at the same time, to trace some of the external factors, of chance, luck and personality which helped to shape the thoughts of a most able and kind man in the course of his journey through life.

When Glynn Isaac began work at Olorgesailie in 1961, shortly after graduating from Cambridge, concepts of the Pleistocene world were changing rapidly. The discoveries made by Louis and Mary Leakey at Olduvai Gorge were central in this change. In 1959 and 1960 for the first time artefacts and early hominid remains were found together, and the results of potassium-argon dating gave a far longer time scale for Pleistocene man than had been conceived – about 1.8 million years (Evernden and Curtis, 1965).

Merely by being in East Africa, Isaac was in the right place at the right time. He was able to assimilate the currents of thought, and test ideas in active excavation, at a time when all was in a state of flux. His background and character, however, made him uniquely well suited to take on board this new state of affairs and its many implications. He had grown up in South Africa, and had the great benefit of a first degree with a broadly based training in the natural sciences, zoology, geology and archaeology; from Cape Town he had gone to Cambridge. There he studied Palaeolithic archaeology at a time before the 'New Archaeology' as we now know it had taken shape, but nevertheless at a time of rapid changes in view. Statistical approaches to artefact studies were in vogue; the radical approaches to economic archaeology favoured by Eric Higgs were in gestation. In his writing Glynn acknowledges Charles McBurney as a mentor, but it is also fair to note that he came to Cambridge with his experience sufficiently broad to make a critical appraisal; and that much of the benefit which he derived was in interchange of ideas and methods with fellow undergraduates, for example with Derek Roe in artefact measurements; with David Clarke especially in the realms of archaeological theory; and with many others in morning breaks at the now-vanished Hawkins' coffee house.

Glynn had the opportunity to take on the work at Olorgesailie partly because Louis and Mary Leakey were fully occupied elsewhere; the Acheulean had become overshadowed by the new importance of the Oldowan. In comparison, the Acheulean was late in time, difficult to date, and lacking in hominid remains. This shade, however, gave him space to work. It seems certain that the Olorgesailie phase not only laid the foundations for his later theoretical work and research strategies, but also allowed some of his most signal contributions to Palaeolithic research in general, in particular those concerned with the theory of typology, studies of artefact form, and pioneering work in taphonomy.

The Olorgesailie results were presented in his doctoral thesis (1968b), by which time he had already published around ten papers, several of them on Olorgesailie; and then in a condensed and partly revised form in the Olorgesailie monograph (Isaac, 1977b). Four of the papers reprinted here go back to the Olorgesailie stage of his work, and are entirely or largely antecedent to the influence of East Turkana.

The Kroeber paper (Isaac, 1967b) is a document whose implications should be

signalled loudly in the late 1980s. It shows how deeply concerned Glynn was with factors of taphonomy, at a time before the word was even in use. Experimental work was going on elsewhere, concerned with the factors affecting the preservation of bone (e.g. Brain, 1967a), but studies of artefact transport had hardly started. Perhaps, following its republication here, this paper will be cited more often as one of the outstanding pioneering works in its field.

Similar concerns with taphonomy, here mentioned by name, can be seen in the 'diet' paper of 1971 (chapter 10). It is clearly recognized that 'dispersal and destruction by scavengers may obscure or bias the record'. The paper is perhaps the first to treat densities of stone artefacts and bones as separate variables, and forward-looking in its appreciation that, in warmer parts of the world at least, 'hunting has seldom if ever been in any exclusive sense the staff of hominid life'.

Another early paper, the 'models' paper of 1972 (chapter 1), reads as freshly and crisply now as when it first appeared. The debate about recurrent artefact variation, which contrasts the possibilities of 'different cultural traditions' and 'different activities', is treated in a masterly fashion. Isaac argues that '*stochastic models* may provide an important alternative to phylogenetic or activity difference models' (p. 22). His ideas of the 1970s are every bit as relevant for the 1990s.

Much the same can be said for the review paper on 'chronology' (chapter 2), but here of course more has changed, and one can only be amazed by how much he got right. There are of course revised dates and new sites: the reader has the opportunity to compare the site appendices of this and Isaac's 1984 paper (chapter 5). Brief mention should be made alongside these early articles, of the *World Archaeology* paper of 1969, a review now clearly dated, but one of the first examples of clear and balanced adjustment to the new long time-scale (Isaac, 1969).

A major turning point of Glynn Isaac's career came with his move to Berkeley, and the start four years later of investigations at Lake Rudolf (now Turkana) in Kenya. At Berkeley Isaac joined J. Desmond Clark in the Department of Anthropology. There followed a long and warm association, highly profitable to studies of African prehistory. This was a relationship of common aims and sympathies, rather than of shared fieldwork, but it was no less useful on that count for studies of human origins. Exploration work at East Turkana (formerly East Rudolf), 600 km north of Olgorgesailie, was begun by Richard Leakey in the late 1960s. The discovery of artefacts in a tuff dated, as it then seemed, to 2.6 million years was of first importance. Dr Mary Leakey initially examined the finds, but her commitments at Olduvai were too great to allow her to take on the new site. Glynn Isaac was the obvious person to collaborate in the new archaeological research programme. His fruitful co-leadership with Richard Leakey was to last for more than ten years. By 1972, the year when the famous '1470' hominid cranium was found by Richard Leakey's team, archaeological investigations were also well established. Isaac stood at the centre of a team, not only of excavators, but of research students who were able to pursue as specialists the research questions which he had played a large part in formulating.

Once more, the new finds opened up a new vista of time, a world for conceptualiz-

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ing: that of pre-Olduvai hominids. Here there appeared to be an extra three-quarters of a million years of tool-using creatures, who could not be assumed to have even the basic attributes of humanlike behaviour observed at Olduvai. The lower density of finds, and the somewhat simpler artefacts, strengthened this appearance.

Hence, it was possible to start thinking afresh about the archaeological evidence for earliest man. The first fruits of this thinking appear in the two essays published in 1971 and 1972 (chapters 1 and 2), reaching their developed form soon afterwards (chapter 11). The ideas were expressed at two levels: the nature of the archaeological record now uncovered; and the models of earlier human evolution that can be built upon it. Key features of the latter are the concepts of 'home-bases' and the importance of 'food-sharing'.

In the meantime the East Turkana dating had gradually become open to question. The first doubts were expressed because of apparent discrepancies in faunal dating with the Omo series. The issues were fully aired at a conference held in Nairobi in September 1973. Glynn Isaac was a co-editor of the proceedings (published as Coppens *et al.*, 1976), and it fell to him to edit and introduce the Geology and Geochronology section. His introduction (Isaac, 1976c) shows once more his ideal of an objective scientific approach; he frames several crucial questions, including the pertinent inquiry, 'What has caused the great scatter of apparent K/Ar ages determined for several of the East Rudolf tuffs?' Characteristically he plotted out all the results in a readily comprehensible diagram.

By 1976 the early dates had been revised, and it had been established that the early East Turkana sites, like those of Olduvai, are about 1.8 to 1.9 million years old. There is a certain irony in this redating; in particular the appreciation that the actual date is almost irrelevant to the archaeology. The important point is that early in the 1970s, freed from an excessive dependence on Olduvai, a new style of thinking had been liberated.

The size of the exposures and the remoteness of East Turkana contributed to this revised view. They gave the space for new approaches, and a vision of the early hominids not dependent on Olduvai and its overpowering wealth of data. The new dimensions of thought are echoed in the section headings of this book. Questions of diet, function of artefacts, non-random distribution of sites in the landscape, all these presaged in the work at Olorgesailie were now developed.

Turning over in Glynn's mind, hinted at in the earlier papers, were questions about artefact transport; questions about association and the distortion of evidence; questions about how landscape was used. His approach to these problems was formally scientific. Amid the welter of potential evidence, one had to select questions that were capable of definite treatment, that might be made to yield answers. A partial list of the completed research topics of Berkeley graduate students supervised by Isaac speaks volumes for what was achieved:

S. *Ambrose* Holocene environments and human adaptations in the Central Rift Valley, Kenya (1984)

J. W. *Barthelme* Later Stone Age archaeology of the region east of Lake Turkana, Kenya (1980; published revised as Barthelme 1985)

R. J. *Blumenschine* Early hominid scavenging opportunities: insights from the ecology of carcass availability in the Serengeti and Ngorongoro Crater, Tanzania (1985)

H. T. *Bunn* Meat-eating and human evolution: studies on the diet and subsistence patterns of Plio-Pleistocene hominids in East Africa (1982)

T. *Cerling* Palaeochemistry of Plio-Pleistocene Lake Turkana (1977)

D. P. *Gifford* Observations of modern human settlements as an aid to archaeological interpretation (1975)

J. W. K. *Harris* The Karari Industry: its place in African prehistory (1978)

Z. M. *Kaufulu* The geological context of some early archaeological sites in Kenya, Malawi and Tanzania; microstratigraphy, site formation and interpretation (1983)

H. V. *Merrick* Change in later Pleistocene lithic industries in eastern Africa (1975)

K. *Schick* Processes of Palaeolithic site formation: an experimental study (1984)

J. *Sept* Plants and early hominids in East Africa: a study of vegetation in situations comparable to early archaeological site locations (1984)

C. *Sussman* Microscopic analysis of use-wear and polish formation on experimental quartz tools (1985)

N. *Toth* The stone technologies of early hominids at Koobi Fora, Kenya: a technological approach (1982)

A. *Vincent* The underground storage organs of plants as potential foods for tool-using early hominids (1984)

The two joint papers included in this book, Bunn *et al.* and Isaac *et al.* (chapters 8 and 9) are just two of the many products of the collaborative approach fostered at East Turkana.

The new perspective formed through this work itself helped to raise the doubts about archaeological interpretation that others have since harnessed as the basis for criticizing 'established' theory – ironically sometimes in fields where Glynn

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himself had laid the foundations of critical (but not destructive) analysis. His surveys and analyses were objective enough to pinpoint weaknesses in theory and practice. On occasion opportunistic critics would then comment upon these, as if they had been the first to notice the problem.

Eminence inevitably attracts some criticism, but in this case there were undoubtedly other factors at work. Glynn Isaac's fieldwork and his interpretations were so central to knowledge of human evolution that they attracted enormous interest. As the field opened up, the greater American involvement in it led to more publications, more cross-fertilization, more involvement. All this happened at a time of great general change in archaeology as well as human palaeontology. There were rivalries in the search for hominids; the development of the New Archaeology, ethnoarchaeology, taphonomy... all engendered a more critical view of archaeological data. When specialists in several disciplines work in the same area, material that at one time might have seemed exclusively archaeological will inevitably become just as much their concern.

Very little in the critical interchanges was directed at Glynn Isaac in any personal sense, but the range of his ideas was so great that any novel viewpoint would be almost bound to disagree with him in some way. Mary Leakey (1971) doubted the likelihood that sandy channels were foci of occupation; Richard Gould (1980) was disinclined to accept the validity of home-bases. Amid the generally enhanced debate on human origins and the status of early archaeological material, the most directed of the criticisms were those of Lewis Binford. Binford himself traces these

back to his review of the Olorgesailie monograph 'Olorgesailie deserves more than an ordinary book review' (the title itself a testimonial), though he followed up with several later forays (Binford 1977b, 1981, 1984, 1985).

It is right to mention these, not because they necessarily carry any great weight, but because they are now part of the history of the subject, and because of Glynn's own attitude towards critical examination. It is plain even from his earliest papers that he felt an obligation to operate at the highest levels of scientific thought – those in which partisan emotion is discarded as a vehicle of judgement. He believed in the competition of scientific ideas, and their evaluation under test over as long a period as necessary. In this, no doubt, he followed T. H. Huxley, Karl Popper and Thomas Kuhn, but more than many of us he was willing to live up to the implications of the doctrine. Glynn Isaac's frequent citations of Binford, and his reviews of the Binford books, show that he held many of his (unchosen) combatant's views in high regard, and was keen to see them further disseminated.

Binford's criticisms may be summarized here, since some of Isaac's later papers clearly refer to them. The critique was made at two levels (broadly corresponding with the two levels of Glynn's own writing, mentioned earlier):

- (1) that Glynn, pioneering archaeologist as he was, had ignored the question of 'association'; that he could not justifiably go on to higher levels of interpretation, until, for example, it was conclusively demonstrated that assemblages of stone artefacts and bones were related as a result of hominid activity, rather than through subsequent natural rearrangement.
- (2) that Glynn's general model of hominization lacked any theoretical basis, and was a 'just-so' story.

Here is not the place to embark on detailed justification or refutation, nor is it necessary. The critique was shaped from 1977 to 1981, giving Glynn plenty of time to formulate his responses, which appear implicitly or explicitly in his later papers (e.g. chapter 5). Then again, if in doubt, the reader is urged to examine carefully the earlier Isaac papers, to see whether or not the finer issues were appreciated.

The criticism, ironically, was started off by a piece of 1960s work, published in final form in the 1970s. The word 'association' scarcely appears in the Olorgesailie monograph, as Glynn had largely been concerned with the other side of the turning coin: 'rearrangement'. Nothing can hide the fact that questions of association were weighed most carefully at East Turkana from the beginning. As a privileged observer in the field, I recall plainly how the question of association was made central by the work of Diane Gifford (Gonzalez) in 1971–2, in the field of ethnoarchaeology. She noted spurious apparent associations of recent hearths and animal bones – observations which were fully appreciated by Glynn Isaac. Hence, Isaac's suggestion that the points argued by Binford (1981) had largely been anticipated, and the fullness of his answers in Isaac (1984–chapter 5). Glynn Isaac's reviews of Binford's books give an insight, in return, to his feelings (Isaac, 1983b, 1984).

On the second major issue, models for the earlier stages of human evolution, Glynn had the advantage of being a moving target. Undoubtedly the prime mover in the evolution of his ideas was his own intelligence and experience, coupled with

the steady acquisition of new facts from his own excavations and many other sources. Thus he came to reshape his ideas, and along with them the terminology of home-bases and food-sharing, which he felt had come to evoke the wrong images (see chapter 4). It is unlikely that he was troubled by the notion that his models lacked theoretical justification; he was very well aware of both their strengths and limitations.

There is no need to dwell further on the cut-and-thrust of archaeological debate. Nevertheless, we can descry benefits in the challenges, which probably led to fuller statements of particular evidence than might otherwise have been the case. This goes especially for demonstrations of refitting of stone artefacts, and work concerned with cut-marks on bone.

Isaac's determination to build up a corpus of clearly recorded information stands out. As he said early on (Isaac, 1971 – chapter 17), 'It seems undeniable that the prime responsibility of any scholarly discipline must be to maintain its factual basis in good order.' We owe him this debt to his responsibility – to ensure that no new myth shall emerge, that Glynn Isaac and his students were there in East Africa, working away industriously towards amassing facts from sites, without considering a research strategy. These chapters show clearly that the research strategy was all-important, equally in their content and in their dates of conception and writing. Indeed, the original grant proposals preceding the investigations would make the same point.

The full account of the East Turkana work will appear elsewhere (Isaac, in prep.). The papers reprinted here include a wealth of related ideas and data, in total presenting a vivid picture of modern archaeology in action. After East Turkana, and moving to Harvard, Glynn Isaac had begun to organize new research at Peninj, where he had first worked with Richard Leakey twenty years before, and had discovered very early Acheulean sites (Isaac, 1967a). Just a hint of the possible importance of the new work appears here in a modest summary (chapter 5), and a diagram (chapter 15). He had intended to carry out further studies of early hominid land-exploitation, developing earlier work (cf. chapter 7).

The subject of human evolution is perhaps the broadest of archaeology, since it is broader than archaeology itself. It is appropriate, then, that the collected papers are completed by two on the broadest of issues: the future of archaeology, and the need for wider international participation in palaeoanthropological research. Though it appears almost last (chapter 17), 'Whither Archaeology?' is an early paper. Again, it is astonishingly fresh and topical. The last chapter (18) reflects Glynn's awareness of his own educational privilege, and his desire for a greater equality.

If the reader possesses just this book as knowledge of its author, he or she cannot fail to be struck by the power of human culture – which allowed this one person in such a relatively short life to build up and carry with him such a complex wealth of information. But this was no ordinary man. It is one thing to make comments on his academic breadth, quite another to talk about the man. He gave unstintingly

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to his wife, family and friends of all races. Many of them, I know, knew him far better than I did; the mark of their esteem is well enough shown in the numbers of books and papers dedicated to his memory.

The beauty, and most poignant quality, of culture is that, once recorded, a man's output is not lost with him; it does not lose its value. Here, then, is immense food for thought. Glynn would have been the first to admit that he could not have completed so much without Barbara Isaac beside him. The coherent arrangement and editing of these papers is her effort. In them his vigour lives on.