

Sifting the evidence for belief in the past

The Ancient Mind: Elements of Cognitive Archaeology

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IN 1990, a conference was held at Lucy Cavendish College, Cambridge, to explore the prospects for a new school of research, cognitive archaeology. The fruits of that conference are now published; they may be uneven in quality but they are provocative. Archaeology at its best is detective work that rivals anything in science or fiction—from Crick and Watson to Holmes and Watson. At its worst, it is imagination run wild, underconstrained speculations which often have the added vice of permanently distorting the data through erroneous “restorations”, or just spuriously authoritative labels that then make alternative interpretations of those objects and sites all but unthinkable.

It is hard to resist the gravitational pull of a good story, apparently, especially when one has just spent a long hot summer and a sizable grant (or a lifetime and a fortune) painstakingly wresting an unprepossessing pile of ancient leftovers from the earth. One has to make something from these fragments—if not the lost city of Atlantis, then at least some exciting conclusions about the exotic habits, beliefs or rituals of the people who made them. So it is not surprising that the early romantic excesses of archaeology—Agamemnon’s tomb and all that—provoked a positivistic reformation movement. Parallel to the behaviourists’ efforts to turn their field of psychology into hard science, the “processual” school of archaeology demanded scrupulous data gathering and forbade all but the most rigorously constructed interpretations, echoing Lloyd Morgan’s Canon of Parsimony: “Thou shalt not impute more Mind than is strictly necessary to account for the data.” One could venture cautious conclusions about the diet, tools and building materials, and the size of the groups, but precious little else—next to nothing about what or how these ancient people thought.

It is not surprising to learn that the killjoy strictures of the processualists have been challenged by several quite different groups. One, the inevitable ghoulish gang of postmodernist relativists, has simply declared that since there aren’t really any facts anyway, you might as well tell whatever stories move you. Members of the other, I am relieved to say, are even more opposed to that devil-may-care nonsense

than they are to the extreme puritanism of the processualists, and hope to bring the pendulum to a halt in an intermediate position. They are the would-be founders of cognitive archaeology, claiming that new methods and insights from cognitive science make it possible to deduce more facts about ancient minds than the processualists would allow, without falling into humanistic fantasy.

Of course, even the most severe processualist was always ready to draw some inferences about ancient minds. The identification of an object as a figurine (eschewing such grander questions as whether

trash. So how does cognitive science help to clarify these debates—or move their midpoint mindwards?)

Very little, on the showing of this volume. In spite of a great deal of throat-clearing and loin-girding by the various authors, the only substantive message from cognitive science that I could see is the valuable but vague caveat that cognitive competence is not always general-purpose but may instead be strongly restricted to specific topics, or specialised “modules”. No archaeological evidence of specific modules (pot-making modules, agricultural modules, copper smelting modules?) has been



it is a toy or a totem or a token in a counting system) already ascribes considerable mental activity to the people who made the object. This can be readily gauged by considering how much it would take to persuade us that some roughly ape-shaped object found among apes was a figurine of their making.

The archaeologists’ debates have always been about thresholds or standards—not about whether, but about when and why one can claim that a stone is an artefactual blade, or a pile of bones is a ritual burial site and not just a pile of

uncovered, but it is indeed wise for archaeologists to beware of over-generalising about the minds of their subjects; a brilliant fish-hook maker might be a dunce in almost every other regard.

What does get a salutary workout is not anything specific to cognitive science, but just good old-fashioned logic—in particular, the exercise of reverse engineering to make deductions about the likely uses to which things have been put in the past, and why. A paradigm case discussed by several authors is Colin Renfrew’s deduction that the carefully crafted cubes found at

Mohenjo-Daro were calibrated weights used in a system of measurement of enough importance to the society to warrant the specialisation of labour that must have created them. Another is Charles Frake's level-headed reinterpretation of the "wind" dials of ancient navigators, illuminating both the Pacific islanders' oft-misinterpreted system of celestial navigation and the naming of the Mediterranean winds by different cultures.

What is crucial to any such interpretation of human behaviour based on artefacts is the assumption that the person who crafted the object would not have gone to such lengths to make these things if they didn't strongly believe that they worked. People have long valued nonfunctional decoration for its own sake, but if people have devoted the bulk of their lives to making doodads (are they weapons? calculating devices? culinary tools?) or a single great thingumabob (a fort? a temple? a storehouse?), they presumably thought, rightly or wrongly, that there was a pressing requirement to make such a thing. So if one cannot show that the artefacts did perform some valuable function, one is left having to explain how their makers could have been so convinced of a falsehood.

At this point I detect serious confusion on the part of at least some of the contributors to this volume. They have a tendency to

reserve "cognition" for such elevated or "cultural" topics as religion, ritual and style of government, as opposed to such mundane practicalities as agriculture and self-defence—as if one could farm or hunt or build a shelter without cognition, but needed cognition to engage in ritual when burying the dead.

Allied with this is the surely anachronistic tendency to contrast religious practices with "functional" practices. To our eyes, the systematic placement of carefully conserved seeds into the ground in the spring is not a ritual, while the systematic placement of ancestors bones into the ground on some other occasion is. But this is only because we know the former "works" and the latter, presumably, does not.

The people who engaged in both practices made no such distinction. For them a sacrificial altar and a dry storehouse were equally functional,

equally essential protections against the vicissitudes of nature. Presumably these people really believed in the efficacy of what they were doing; they were not, like many of today's masters of ceremony, just "keeping a tradition alive".

Arena of the intellect? Tarxien temple in Malta dates from 2400 BC. In spite of excavation, we still do not know why it was built



As the anthropologist Dan Sperber has noted, it is the false beliefs of any culture that are of most interest to social scientists, for unlike a true belief, a false belief requires a special genealogy: how did this error continue to be propagated so

securely? Here, perhaps, a behaviourist, not a cognitive scientist, has provided the best clue. In a classic series of experiments, Richard Herrnstein put pigeons in Skinner boxes on random reinforcement schedules. Soon the pigeons were

obsessively producing bizarre ritualistic bobbing and weaving sequences, which in time were reinforced by random bits of food reward. "It's working!" we can imagine the pigeons exulting; "I knew if I just twisted my neck a little more to the left this time, I'd induce the pellet-god to give me another one!" Herrnstein aptly called these pigeon dances "superstitious behaviour", but he eschewed putting any such imagined thoughts in the pigeons' heads.

Random reinforcement is still the best explanation we have for how elaborate and costly (and completely inefficacious) rituals could get started in the first place, but of course once they do get started, they become highly efficacious—for the group of priests or kings or others who make a handsome living keeping the rituals going, and elaborating on them.

The processualists shunned deductions about ideology, while welcoming deductions about practical life; if cognitive archaeology has a future, it will be by showing how, under the right conditions, one can extrapolate facts about "ideological" features of ancient cultures by showing how they are the likely or even obligatory extensions of the practical concerns that shape all cognition. □

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