

Semiotix Course 2008, The epistemology of Pleistocene archaeology

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## Lecture No. 1. Milestones of Pleistocene archaeology

The most characteristic feature of archaeology is not that it deals with the past; many disciplines do that, including paleontology, palynology, geology, or astronomy—no human has ever seen a present-time star. Nor is it that archaeology conjures up images of mystery and adventure; most disciplines can do that. Nor that it often deals with interesting remote places and countries. Archaeology as we know it is more readily characterized by a collection of rather negative factors. For instance, it is the only ‘scientific’ discipline that seeks to control access to methods, data, sites and knowledge. No other discipline (except medicine, for ethical reasons) endeavors to restrict work in its field to card-carrying members of the relevant academic ‘trade union’. Another distinctive aspect of archaeology is the uneasy relationship it has developed with its two principal client groups: the interested public, which it relegates to the status of spectators, ‘cult archaeologists’ and ‘folk archaeologists’; and the political structures in the struggle of indigenous people around the world who in many cases object to archaeological practices. The tensions are in both cases not only due to excessive curatorial desires of the discipline’s practitioners and the political agendas they serve, but also due to archaeologists’ misunderstandings of the role and capabilities of archaeology, and the ethical fact that archaeological property does not belong to state-appointed ‘experts’. They speak neither for indigenous peoples nor for science, in fact their curatorial demands conflict with principles of academic freedom as well as the aspirations of cultural autonomy of autochthon peoples.

### **Heretics in Pleistocene archeology**

But by far the most characteristic feature of establishment archaeology is its treatment of heretics and iconoclasts: the people who disagree with its established dogmas. It is not so much that heretics may not also be rejected in other disciplines, but in other fields of human endeavor there is a tendency to learn from mistakes made in rejecting heretics. This is not evident in archaeology. That discipline has had to deal with dissent for its entire history, and that history provides ample evidence that archaeology as an academic discipline has learnt nothing from these encounters—or from the great embarrassments they have led to. Today it

uses precisely the same strategies of silencing these people it used almost 200 years ago. This is what I seek to demonstrate here. To see this, and to understand this extreme conservatism it is necessary to examine some case histories.

There are hundreds of cases where non-archaeologists offered important ideas, data or finds to the discipline, only to be rejected—and usually so with great displays of indignation—and where it was subsequently found that the finds were authentic, the data valid or the ideas extremely important in developing archaeology. Often this realization that the discipline had made a great error in rejecting such outsiders only came after the death of the heretical scholar. The most interesting aspect of all of this is that it did not prevent the discipline from repeating the same treatment of iconoclasts, decade after decade, right up to the present time. These are still happening today, and the pattern of reflex-like rejection, and much later grudging acceptance is by far the most characteristic aspect of archaeology as a reactionary discipline. In this sense, orthodox archaeology is very reminiscent of some religions, such as the Roman Catholic version of Christianity of past centuries.

Archaeology does not appreciate being compared with religion, and yet it has strong dogmas, it ‘crucifies’ heretics, it is a belief system (or so I will argue in this series of lectures), and its history is inter-woven with specific religions. ‘Biblical archaeology’ remains a valid subject at Western universities, and the absence of Koranic or other religiously motivated forms of archaeology at these same universities belies their claims of objective scholarship. Such institutions are dedicated to an intellectually corrupt form of scholarship, the misuse of scientific techniques to demonstrate the validity of religious fantasies and mythologies. This state of affairs is reflected in modern archaeology by such aspects as the ‘African Eve’ model, which recently enjoyed great popularity, even though it is severely racist, highly implausible and bereft of any archaeological evidence. But it does offer an escape from the scientific proposition that humans are not qualitatively different from other animals, such as other primates, or only so by a very slim margin. The ‘African Eve’ model is a remolding of evolutionary principles to accommodate Biblical (and other fundamentalist) teachings, and its eager acceptance in archaeology is itself

a fair indication of the intellectual currents within modern Western archaeology.

In order to examine possible historical patterns in the treatment of archaeological heretics it is most instructive to consider the most celebrated cases in the history of the discipline. It is important to appreciate that no truly important archaeological discovery was ever made by a professional archaeologist. The most important finds made in Pleistocene and Pliocene archaeology are perhaps the discoveries of man's antiquity, of fossil man, of Paleolithic cave art, of *Homo erectus*, and of *Australopithecus*. They were all made by non-archaeologists, and these were rejected by archaeologists—in all cases without seriously attempting to examine the evidence fairly.

### The discovery of humanity's great antiquity

One of the first to recognize the immense antiquity of humanity was Jacques Boucher de Crèvecœur de Perthes (1788–1868). He was a French customs official who for decades in his spare time collected Paleolithic stone tools, such



Figure 1. Boucher de Perthes, founder of Pleistocene archaeology.

as handaxes, in the gravels of the River Somme (Fig. 1). In examining finds made by a local medical doctor, Casimir Picard, in the 1820s he recognized these as the handiwork of human beings, and finding them together with the bones of extinct animals he realized that humans must have lived in France during the Pleistocene (the Diluvium, as it was then called). A year after having been seconded to Abbeville in 1825 he began to collect stone implements and he

soon became a regular visitor to the region's quarries, canal diggings and gravel pits. About 1832 he commenced serious excavations, amassing a large collection of flint tools and other material, and by 1838 he presented his theory and evidence to the Société d'Émulation. Undaunted by the skepticism that greeted him, he did the same in the following year before the Paris Institute, where his ideas and finds were thoroughly rejected. He then published his work in five volumes entitled *On the Creation*, again finding it rejected by the 'experts'.

Unfortunately this man also had some other eccentric ideas: he thought that women should have rights, he suggested the raising of the living standards of the working classes, and he advocated universal peace. In short, it was easy to see that the Boucher de Perthes was just a crank. Nevertheless, he proved to be a very persistent crank, and during the late 1840s, Scandinavian archaeologists had begun to turn the tide in his favor, with their Three Age system (Stone, Bronze and Iron Ages). By 1847 he had become so confident that he claimed humans existed many thousands, even hundreds of thousands of years ago. This he deduced from the geological age of the strata he had excavated, and

he quite correctly pointed out that most tools then may have been made from wood, but that in order to work wood the use of a harder material, flint, was essential.

Of particular interest here is Boucher de Perthes' own reaction to the consistent rejection he experienced over some decades: "They employed against me a weapon more potent than objections, than criticism, than satire or even persecution—the weapon of disdain. They did not discuss my facts, they did not even take the trouble to deny them. They disregarded them." This is important, because the same weapon is still widely employed in contemporary archaeology, and in precisely the same way.

The final denouncement came in 1858, at a French archaeology congress, which issued a unanimous declaration according to which all of de Perthes' stone tools from Abbeville were "a worthless collection of randomly picked up pebbles". The archaeologists, who had long objected to the disciplinary trespass of this troublesome amateur, had realized that Boucher de Perthes was not going to give up easily, and that he was even gaining a little support, especially from two more amateur archaeologists, another doctor and a geologist: Marcel-Jérôme Rigollot and Edmond Hébert. So at long last they decided to act decisively against these cranks. This turned out to be a great and rather untimely embarrassment, because in the following year, two British geologists, who had quietly worked away testing Boucher de Perthes' propositions (which is precisely what good scientists do), published their findings, confirming that he had been right all along and the 'worthless pebbles' were the tools of 'Diluvial man'. Hugh Falconer and Joseph Prestwich had themselves become aware that he might be right after taking part in the 1858 supervised excavation of Windmill Hill Cave, Brixton, by another autodidact, William Pengelly (1812–1894). Pengelly, a self-taught geologist, had earlier excavated in Kents Cavern where he had found extinct animal remains together with flint tools, and repeated Boucher de Perthes' claims.

Over the following years, in the wake of Darwin's *Origin of the species* (1859) and Lyell's *The antiquity of man* (1863), public opinion swung around sharply, and it is important to note that archaeological opinion followed suit. As we will see later, this is the usual pattern: archaeology follows public opinion, it is the most populist discipline, always ingratiating itself with the public. Boucher de Perthes lived to see his perseverance of half a lifetime vindicated because he persevered and he addressed the public. Those heretics of archaeology who failed in this were not so fortunate to witness their exoneration.

### The discovery of fossil man

In the very year of another amateur's book, Darwin's 1859 seminal volume and Prestwich's substantiation of de Perthes' claims, an article by an unknown author appeared in a German journal. Johann Carl Fuhlrott (Fig. 2) was a schoolteacher, and he presented a paper about what he claimed to be skeletal remains of a pre-Historic human being that probably was of the Diluvial period. But instead of welcoming the opportunity of publishing the first report ever of fossil man the journal explicitly rejected the interpretation



Figure 2. Johann Fuhlrott, discoverer of the first fossil man.

of the find, publishing with it a footnote expressing its disagreement with Fuhlrott's opinion.

The bones had been excavated in August 1856 by two workers in a limestone quarry in the Neander valley in Germany. In removing the sediment fill of the Kleine Feldhofer Cave, they threw the bones on the slope of waste material, where an owner of the quarry noticed them. Thinking that they were cave bear bones, he collected the larger ones and gave them to Fuhlrott, whose

work as a naturalist was known locally. Fuhlrott realized that the individual represented by the bones differed significantly from modern humans, and he also recognized that the clay deposit in the cave seemed to be of the Ice Ages (Fig. 3). In 1857 he presented these findings to a conference in Bonn where they were rejected, except for the anatomist Hermann Schaaffhausen, who had examined the bones and tentatively agreed with the teacher from Eberfeld.

In 1860, the founder of geology, Charles Lyell, visited Fuhlrott and the Neander valley, taking a plaster cast of the cranium, and Thomas Henry Huxley, Darwin's most outspoken supporter and yet another amateur, commented that it was the most ape-like human skull he had ever seen. His view was shared by Irishman William King, and one would have thought Fuhlrott's views would have been accepted within a few years, particularly in view of the rise of Darwinism at that time. Far from it; over the following years, the remains were variously attributed to a Mongolian Cossack, a Celt, a Dutchman, a Friesian, and an idiot. The bone architecture was attributed to various bone diseases, the curved leg bones to a life of riding horses. The raging controversy was 'resolved' in 1872 when Germany's foremost expert, Professor Rudolf Virchow, entered the fray at long last. As the president of the Society for Anthropology, Ethnology and Prehistory, and an anatomist of great prestige, he determined the health history of the individual since his childhood from the bones available, in a classical demonstration of the value of deductive diagnosis. His authoritative rejection of Fuhlrott's interpretation seemed to be decisive and public perception was guided by it.

That would have been the end of the story for some time if it had not been for the British Darwinists. Interestingly, Virchow was quite supportive of the evolution theory at the time, even though he defined it as not adequately supported by empirical data (while, of course, rejecting the empirical data). However, his position over the following years hardened, and when odd-looking human mandibles were found in two other caves (La Naulette in France and Šipka Cave in Moravia) he rejected them as being typical of a 'race'. By 1877 he warned against Ernst Heinrich Haeckel's proposal to teach evolution theory in schools.

He felt it would "dispossess" the churches, and he became alarmed that socialists had adopted evolutionism into their political agenda. Virchow was politically active, and one of the founders of a political party, the German Progressive Party. He grew progressively concerned about the implications of political Darwinism and eventually also spoke out against biological Darwinism as "limiting academic freedom". Thus the position of Neanderthal man became subordinated to other agendas, such as those of academic prestige and monopolization, political issues and tribal warfare among the tribes of academia. Fuhlrott had become irrelevant, a mere footnote in the discipline's history.

However, in 1886, after thirty years, he was finally vindicated. An excavation in a cave at Spy, near Namur, Belgium, produced two substantially complete skeletons of humans, found together with numerous stone tools and the bones of extinct animal species. The characteristics of the human bones matched those of the Neanderthal find, and the theory of congenital bone deformations collapsed. By now it was widely accepted outside of Germany that these were representatives of fossil humans of the Ice Age, and yet, in Germany it took another fifteen years before a detailed favorable study of the Neander valley remains was published. It was in fact a student of Virchow, Gustav Schwalbe, who published a reassessment of the original Neander valley skeleton in 1901, defining it as the species *Homo neanderthalensis*.

### The discovery of Pleistocene art

The existence of Paleolithic cave art was long known, probably always since the Ice Age. For instance we know that in 1458 Pope Calixtus III decreed that the religious ceremonies held in "the Spanish cave with the horse pictures" had to cease. We cannot know which cave he referred to, but it was almost certainly a cave with Paleolithic art. However, while many people of the ten thousand years after the Ice Age were perfectly familiar with the ancient art, nobody had told the archaeologists about it. This factor should turn out to be of serious consequences for Don Marcelino Santiago Tomás Sanz de Sautuola (1831–1888), a nobleman of the Santander region in northern Spain (Fig. 4). In due course it would destroy his life. A landowner of wealth and diverse interests, he had been one of the first to introduce eucalypts in Spain, he had a magnificent library and a good knowledge of the region's geology and ancient sites. In fact he was appointed vice-president of the monuments commission of his district in 1872, just seven years before the fateful discovery that would ruin him.



Figure 3. The type fossil from the Neander valley.



Figure 4. Marcelino de Sautuola, discoverer of Palaeolithic rock art.

Madrid University. Vilanova recognized the bones as being from extinct species, and that they had been fractured by humans. In 1878, de Sautuola visited the World Exhibition in Paris, which included an exhibit of stone tools and bones recently excavated in caves of the French Périgord. De Sautuola remembered his own cave and, in the spring of the following year, began in earnest to excavate part of the Altamira cave. Mixed with the bones of animals



Figure 5. Maria de Sautuola.

and oyster shells, he found the typical stone blades of the Magdalenian period in large quantity. Deeper in the cave, a complete skeleton of a cave bear was encountered, and the explorer also observed black markings on the cave wall, but gave them no further thought at that time. It was his 12-year-old daughter Maria, who, playing in the cave as he was digging, first noticed that there were animal pictures on the ceiling (Fig. 5). This was in November 1879.

The story begins in 1868, when a hunter, Modesto Cubillas, lost his dog on Altamira, a limestone hill on de Sautuola's property. It had climbed into a cave and found itself unable to come out. The hunter opened up a hole and found a large cavern. This was mentioned to the land's owner years later, in 1875, who decided to explore the cave. He found a large quantity of split bone upon digging in its floor deposit, some of which he took to show a geologist friend, Juan Vilanova y Piera at

Madrid University. Vilanova recognized the bones as being from extinct species, and that they had been fractured by humans. In 1878, de Sautuola visited the World Exhibition in Paris, which included an exhibit of stone tools and bones recently excavated in caves of the French Périgord. De Sautuola remembered his own cave and, in the spring of the following year, began in earnest to excavate part of the Altamira cave. Mixed with the bones of animals and oyster shells, he found the typical stone blades of the Magdalenian period in large quantity. Deeper in the cave, a complete skeleton of a cave bear was encountered, and the explorer also observed black markings on the cave wall, but gave them no further thought at that time. It was his 12-year-old daughter Maria, who, playing in the cave as he was digging, first noticed that there were animal pictures on the ceiling (Fig. 5). This was in November 1879.

It was clear to de Sautuola at once that the incredible gallery of paintings of bison he now began to see was probably the work of the same people whose debris he was digging up, partly

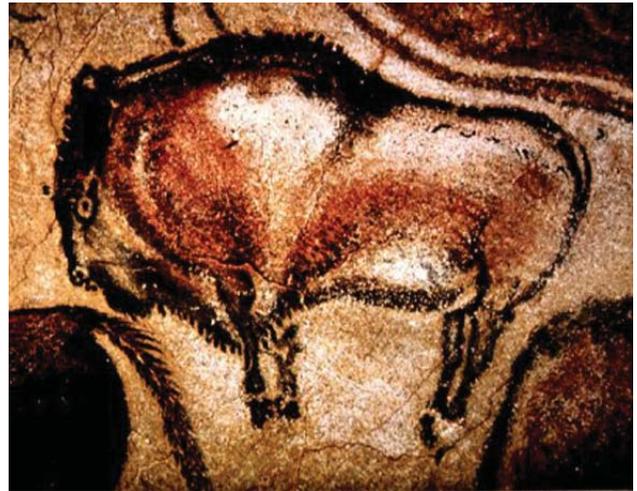


Figure 6. One of Altamira's cave paintings.

the paintings and the occupation evidence, but cautiously avoiding the claim that the two forms of evidence necessarily needed to belong to the same time. It was a sober treatise, entirely lacking in flamboyant claims (Fig. 6). For the required illustrations he employed a destitute and dumb French painter he had befriended earlier, and this turned out to be a fatal mistake.

The publication was greeted with considerable disapproval, which soon built up to ridicule and anger. The discipline decided collectively that de Sautuola was either a charlatan, or at the very least he had been severely duped. At the International Congress of Anthropology and Prehistory in Lisbon, where the elite of Europe's 'prehistorians' gathered, Vilanova presented the discoveries in Altamira, strongly defending de Sautuola. One of the most influential French delegates, Professor Émile Cartailhac, walked out in disgust, and later roundly declared the paintings to be a fraud, without even bothering to see them. In fact all other experts refused to examine the site initially, and the French decided that the whole affair was a plot by Spanish Jesuits to undermine the credibility of pre-History as a discipline. Once again we see the struggle between the discipline and the Church made explicit. Eventually, a railways engineer who had a good knowledge of paleontology, Édouard Harlé, was requested to examine de Sautuola's outrageous claims, and he promptly discovered the involvement of the dumb painter (who in the meantime had disappeared). No further investigation was needed, the case was clear enough to him.

Vilanova tried in vain to use his academic prestige to promote acceptance of the find, he was judged to have been the first to have been duped by the charlatan of Altamira, and unable to concede that. De Sautuola, for his part, did not respond to the accusations. As a Spanish nobleman he felt that he could not enter into a discussion of whether he was honorable or not, but we know that he suffered greatly. He tried to present his case at a French conference in Algiers in 1882 and submitted a self-funded booklet to another conference, in Berlin, but both endeavors were ignored. Six years later he died at the age of fifty-seven, a broken

and bitter man, in the full knowledge that he had made one of the greatest discoveries in the history of archaeology. He also knew that he had failed in effectively conveying this knowledge to a thoroughly hostile academic world. His death weighs heavily on archaeology, particularly as he was judged without trial—but all to no avail. As recently as 1996, this discipline has been responsible for the death of a researcher in Australia, Dr David Rindos. Being an archaeologist certainly is a health risk, and as one practitioner, Paul Bahn, observed, it requires the hide of a rhinoceros.



Figure 7. Émile Cartailhac in 1872.

A French schoolteacher, Léopold Chiron, had found engravings deep in the cave of Chabot already in 1878, and in 1890 in another site, Figuier. In 1883 Francois Daleau excavated engravings on a wall in Pair-non-Pair that had been covered by Ice Age sediments. In 1895, a bison engraving was discovered in the French cave La Mouthe, and Emile Rivière, who had actually seen the Altamira paintings, found more rock art in La Mouthe, and four years later a Paleolithic lamp. Thus the

evidence in favor of Paleolithic rock art mounted. In 1897 Cartailhac (Fig. 7) still refused to publish the note of a new discovery of cave art, but in 1902 he published his famous ‘*Mea culpa d’un sceptique*’, in which he grudgingly accepted that he had been monumentally wrong.

### The discovery of *Homo erectus*

During the last decade of the 19th century, another of the greatest discoveries of Pleistocene archaeology was just in the making. Eugène Dubois (1858–1941) was a Dutch physician who had been bitten by the archaeology bug as a young man (Fig. 8). Haeckel, who had supported the initial identification of Neanderthal Man, predicted the existence of a ‘missing link’ on the fossil record, a creature that would be an intermediate form between extinct apes and human beings. He had given it the name *Pithecanthropus* in 1886, and in the absence of any fossil finds at the time, had sketched out what such a creature might look like. In 1870 Haeckel had lectured in Holland, and Dubois set out quite deliberately to find the remains of *Pithecanthropus*, deciding that the region of today’s Indonesia was the right place to look for them. Bearing in mind the almost complete lack of knowledge about hominin evolution at the time in question, this was certainly a most audacious plan—and not one likely to succeed too readily. A passage in a book by the British naturalist Alfred Russell Wallace, who mentioned South-east Asian caves and apes in connection with the origins of humans, was Dubois’ main clue, apart from the reasoning of both Wallace and Darwin that these origins were to be found in the tropics.

He signed up as military physician to go to Sumatra in 1879, specifically intending to look for the ‘missing link’. His investigations of caves in Sumatra led to no exciting finds, however, and after two years, following a bout of Malaria, he was transferred to the drier Java. Here he secured limited support from the colonial administration, and the use of convict labor for major excavations. He began to dig at several sites, finding the sediments rich in fossils. In 1891, while excavating on the Solo River, he recovered first a tooth, then a cranium, which he judged to be of a large, human-like ape. In the following year, a thighbone was found, clearly of an upright walking primate, and a second molar. In 1893 Dubois claimed to have found an apelike hominid at Trinil, on the basis of these four specimens.

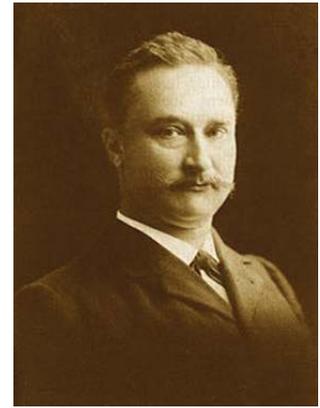


Figure 8. Eugène Dubois, discoverer of *Homo erectus*.

Even the telegraphed reports preceding Dubois’ return to Holland created controversy, and it was claimed he had combined a human femur with the cranium and teeth of an ape. One member of the Dutch Zoological Society asked, if we were to continue searching at the Trinil site and found a second left femur, would that indicate that *Pithecanthropus* had two left legs? Or that he had two different heads, if a human skull were found another 15 m further? Dubois had no idea what awaited him, and when a few weeks after his arrival he addressed a congress in Leiden, the assembled experts began forming opposing camps. Interestingly enough, these were largely divided along national lines, for instance, most Germans saw the creature as an ape with some human features, the British as a human with some simian features, while the Americans shared Dubois’ view.

Over the following years, this debate raged without any agreement in sight. In 1928 Dubois recorded wryly that no less than fifteen different interpretations of his fossil finds had been proposed by as many scholars. He made great efforts to contribute to resolving the controversy, traveling widely, and learning the skills of a dentist, a photographer and a sculptor, creating a life-size statue of his beloved *Pithecanthropus*. He invented a special ‘stereo-orthoscopic’ camera, capable of taking photographs of fossils from all sides without distortion. But all his endeavors seemed to be doomed, which he found increasingly exasperating. The escalation of the controversy, the rejection of his views and the continuing sniping about the circumstances of the recovery and his status as an amateur were hard to bear, and personally hurtful for him. Instead of finding recognition for his incredible success, he found himself in the middle of a controversy that was not of his creation, and that overshadowed his achievement completely. As a result of his personal hurt he became increasingly reclusive, and finally he—who had gone to extreme lengths to promote understanding of his finds, and carried them around with him in



Figure 9. Reconstruction of *Homo erectus* by Franz Weidenreich.

a suitcase for years to show to any researcher who might be interested—refused to receive any further scholars. In fact he is reputed to have hidden the fossils under the floorboards of his house. So deeply was he hurt that for thirty years he turned his back on the scholars. Opponents of evolution rejoiced, saying that this was attributable to his remorse, for the cardinal sin of having aided and abetted such

a sacrilegious teaching with his *Pithecanthropus*.

Aged 74 he relented at last and invited several prominent scholars to see him. A new generation had taken over in the discipline, whose methods and ideas were somewhat more sophisticated, and who were no longer concerned about the issues that had dominated Dubois' thinking. The Javan fossils were now attributed to *Homo erectus*, numerous specimens of whom had in the meantime been discovered on a hill at Zhoukoudian near Beijing (Fig. 9). At 80, Dubois was visited by Franz Weidenreich, who was to become the most significant paleoanthropologist in the discipline's history (and whose most important teaching has to this day been completely misunderstood by practically all Anglophone specialists, in what could be described as the 'palaeoanthropological misunderstanding of the century'). This was shortly before the formulation of the multiregional hypothesis of hominin origins, which has now been disparaged for decades. The issue of the 'missing link' was no longer so pressing, after all, that link had been discovered in England, at Piltdown (which we will examine in the fourth lecture of this series). In fact even a kind of 'missing link' that *was not a fake* had been discovered by that time, in South Africa. The only problem with that was that nobody took any notice of it.

### The discovery of *Australopithecus*

The Piltdown affair had a considerable effect on the discipline, particularly in the rejection of evidence that would tend to contradict Piltdown. Even evidence that might detract from the importance of 'Piltdown Man' was unwelcome for several decades. So when in 1924 a young, Australian-born anatomist in South Africa reported finding skeletal remains of a creature that seemed about half-way between ape and human, his report was greeted with scorn and contempt. Having in the previous decade discovered that humans had evolved in England, European and especially British archaeologists and physical anthropologists were in no mood to seriously consider such a competing counter claim 'from the colonies'. The infant specimen from Taung, in Bophuthatswana, consisted of a brain cast and the facial bones of a creature Raymond Arthur Dart (1893–1988) named *Australopithecus africanus*, the southern ape of Africa (Fig. 10). He had found them in two crates of fossil bones from a limestone quarry. The Taung child

had distinctive human-like features, and yet the experts of the time relegated it to the status of a new fossil ape. After all, Piltdown made it perfectly clear that the brain evolved before the rest of the skull did, and only after it matched that of modern humans did the remaining bone structure develop in this direction. On that basis *Australopithecus*, despite its rather human-like dentition, still had to be an ape.

During the 1920s, tons of *Australopithecus* bones were quarried at another South African site, Makapansgat, and burnt to make lime powder. A local naturalist named Eitzman tried desperately to interest a paleontologist in the study of the incredible wealth of fossils in this former cave's fill material. He made limited observations the best he could, and reported seeing an apparently complete skeleton of *Australopithecus* before it was thrown into a kiln. All his endeavors to interest anyone in this site were in vain, and when he showed the Makapansgat jasper cobble to Dart, who was himself disappointed by the reception *Australopithecus* had received, Dart showed no interest (Fig. 11). This stone is now regarded as the earliest evidence ever recovered that suggests the emerging capacity to perceive figurative properties in a natural form. This important piece of evidence was not properly studied and analyzed for 72 years (i.e. until I did so in 1997). Indeed, many aspects of the discovery of *Australopithecus* indicate an incredible scientific apathy.

A medical doctor, Robert Broom, found further specimens of this very early, human-like creature in the 1930s and 1940s, and by the middle of the century it was becoming glaringly apparent that Piltdown was a fake. It was also becoming clear that its acceptance by the experts had retarded the study of human origins for four decades, and that there was more than one species of *Australopithecus*. Today we distinguish half a dozen of them, and we think that the australopithecines persisted for several million years in Africa. Fortunately for Dart, he was a young man when he discovered them, and he survived the time of the eventual acceptance of his find by many years. He had not been victimized, his reputation was not torn to shreds, he had merely been ignored. As Boucher de Perthes had observed: "They did not discuss my facts, they did not even take the trouble to deny them. They disregarded them."



Figure 10. Raymond Dart, discoverer of *Australopithecus*.



Figure 11. The Makapansgat jasperite cobble.

### **Modern heretics in archaeology**

Having thus examined key examples of the treatment mainstream archaeology has meted out to heretics, two observations may be made. First, certain uniformities are beginning to emerge in the way the discipline deals with troublesome heretics. Secondly, one might ask: is there a decrease in the severity of their treatment as we approach more recent, and supposedly more enlightened times?

We have quite a number of such cases of modern times. One of the most glaring examples in Pleistocene archaeology is that of Alexander Marshack, an American writer who when aged around fifty was assigned to write about Paleolithic art in Europe. His archaeological knowledge at the time was negligible, but as a very original thinker he soon noticed that this body of evidence was studied by antiquated methods and in surprisingly unscientific ways. For instance, he developed a strong interest in the work processes involved in engraved markings on decorated portable plaques, after realizing that they could tell us a great deal about the circumstances of these productions. Until the 1970s, archaeologists had made no consistent use of microscopy in the study of archaeological work traces. The only exceptions were in Russia where S. A. Semenov had developed the microscopic study of used stone tool edges in determining what Upper Paleolithic artifacts had been used for. Marshack introduced this kind of technology to the study of portable art objects and called it 'internal analysis'. For the next thirty years he produced a large series of exceptionally scholarly publications, explaining in some detail how he deduced certain circumstances of the manufacture of early markings from optical microscopy. While it is true that all scientific evidence is presented for the purpose of review, and indeed, for falsification, it is equally true that Marshack's work was subjected to far more critical attention than that of comparable work by a professional archaeologist. Yet no significant part of his hypotheses was ever falsified, and particularly Francesco d'Errico, who had embarked on a sustained campaign to test Marshack's findings, ended up agreeing with them substantially. Still, acceptance of these findings by the mainstream discipline was always grudging, and Marshack remained an outsider and was not accorded formal recognition. This was not because his scholarship was in question, rather the reverse. His mistake was his scholarly and restrained tone of discourse, and that he sought to address the savants rather than the public. Nothing he could do and nothing he could present would ever change their attitudes to him, which were not governed by the merits of his work, but entirely by his status as an amateur. His work and his findings are revolutionary for archaeology, and if they had come from an establishment archaeologist they would be valued and well received. Coming from a member of the archaeologically most despised group, the archaeological amateurs, they had to be greeted with disdain, and ways had to be found to disprove them. After all, professional archaeologists were not in the business of accepting corrections by mere amateurs.

In the mid-1990s we experienced 'Altamira in reverse'. This time around, Pleistocene archaeology was the cham-

pion of the notion that a body of rock art in Iberia, found at a series of sites of open schist exposures, are the open-air version of Pleistocene cave art. This issue came to a head with the announcement, at the end of 1994, of supposedly Paleolithic petroglyphs in the lower Côa valley of northern Portugal. Along the present river course, just a few meters above the water, there is a series of impact petroglyphs and engravings appear on perfectly flat, slate-like vertical panels. They are mostly very well preserved, occurring generally in the close vicinity of the ruins of water mills dating from recent centuries. A wide range of motifs is presented, such as clocks, a truss bridge with a locomotive, assorted fish and plants, crucifixion scenes, and numerous inscriptions and engraved dates from the last three centuries. While those of the mid-20th century are practically unpatinated and unweathered, those of the 18th century have become almost indecipherable. Found among this diversity of obviously historical motifs are also a number of animal pictures, which appear to depict horses (one shown wearing a bridle), Spanish fighting bulls and a few goats or ibex. They are generally no more patinated and weathered than the inscribed dates, in fact the 18th century dates are consistently more weathered than the semi-naturalistic animal images. The sediment and gravel being rafted past as the Côa floods annually consist largely of angular quartz, which has caused extensive wear of the rocks, yet there is almost no such damage visible on the petroglyphs—not even under the microscope. Moreover, many of the 'Paleolithic' engravings were clearly made with metal tools. Extensive excavations yielded no occupation evidence without ceramics, and all sediments near the valley floor are of the second half of the Holocene. Indeed, the only dated terrace residue of the Pleistocene occurs 40 m above the present valley floor, therefore the river has rapidly excavated the soft schist rock since then and all sediments and rock surfaces must be Holocene. Finally, many of the 'Paleolithic' images had been incised by truncating lichen thalli, and thus had to be younger than this rock flora.

When I, as an amateur archaeologist, opposed the unanimous archaeological mantra of the Paleolithic age of this rock art in 1995, I had no anticipation of the consequences. Like de Sautuola, I was attacked with a ferocity that almost defies description. Dozens, even hundreds, of Pleistocene archaeologists ridiculed, defamed and denounced me—the upstart who had dared not only to defy their authority, but also questioned the discipline's competence by writing about its epistemology: the processes by which it acquired its perceived knowledge.

Rather than silencing me, this treatment only prompted me to turn my attention to other blunders of the discipline. Next, I pointed out that the shamans of archaeology had for almost forty years remained ignorant of the fact that a Dutch non-archaeologist, Theodor Verhoeven, had in the late 1950s demonstrated the presence of hominins together with a stegodont-dominated fauna on the Indonesian island of Flores. The age of this human presence on an island that had never been connected to any other landmass was estimated at between 700,000 and 800,000 years, and it had gone unnoticed because the finds had not been published in English until the 1990s. Therefore it had not been appreciated that

the humans concerned, *Homo erectus*, must have had the ability to cross the sea in adequate numbers to render the founding of new island populations possible. This species had not only colonized Flores, and necessarily also Lombok and Sumbawa on the way there, but also, as I demonstrated in 1998, Timor. To determine the minimum technological capability for these, and many other Pleistocene sea crossings demonstrated, I built eight very primitive rafts with stone tools and attempted to sail them. The archaeologists still sought to oppose my evidence, but no longer with quite the same zest as before. They were beginning to realize that I outperformed them in every published debate, that they had been less than knowledgeable, and that I would expose their shortcomings at every opportunity. Indeed, I continued the onslaught relentlessly, tabling example after example of ignorance and failure on the part of Pleistocene archaeologists, year after year. The more models and claims I investigated, the longer the list of my refutations and corrections grew. It began to emerge how often the paradigms of this discipline are based on the ignorance of their promoters, and on a surprisingly sloppy epistemology.

The most recent major example of my falsifications concerns the persistent claims that all extant people derive from a small population in sub-Saharan Africa, which displaced or exterminated all other humans by about 30,000 years ago and took over the world. This is known as the replacement model, or as the African Eve model. I demonstrated that it lacks any genetic, paleoanthropological, cultural or even archaeological support, and that alternative models are very significantly more plausible and better supported by the hard evidence. I replaced the 'replacement model' with the 'domestication theory', and at the time of writing the response of the discipline to this new challenge has yet to be expressed.

Certainly, the many errors, blunders, controversies and shortcomings I have now exposed in Pleistocene archaeology render an examination of this discipline essential. How did it develop, how did it acquire its practices, its dogma? Indeed, if we consider the history of the discipline, outlined in the historical examples I have given above, is it not justified to ask why such an investigation of its epistemology has not long been attempted? If we are to secure a better understanding of the distant human past, of our evolution,

our development as a species, is it not necessary to confront these issues squarely and honestly? What we have seen so far is largely a caricature of Pleistocene archaeology, and the practices of knowledge acquisition, processing and presentation in this field need to be investigated thoroughly. As a first step in such a revisionist program, I present this series of lectures examining the soft underbelly of archaeology's epistemology.

Anyone doubting the need for this, or my claim that nothing has improved in the way the discipline operates, might like to consider just one very recent example. Prompted by me, Indonesian and Australian archaeologists discovered a tiny human creature in 2004. Excavated in the cave Liang Bua in western Flores, the remains were named *Homo floresiensis*, also known as the 'Hobbit'. Only about a meter tall, the creature immediately became the object of a controversy, which I predict will continue for some time. Interpretations of the find now range from gibbon to microcephalic modern human, and include several versions between these two extremes, such as australopithecus, habiline and erectoid. What this extreme spectrum of opinions shows most clearly is that experts lack the ability of identifying human remains reliably at the species level. Any intelligent person can see from the bones that they are of a human-like primate, so if the combined experts of the world cannot find agreement on where in this wide spectrum they rightfully belong, how can one take seriously their claims that modern people and Neanderthals could not breed? The obvious conclusion is that they are always just guessing. But what is particularly relevant is the all too familiar pattern: the rubbishing of opposing views and individuals, the clamoring for attention, the ridicule, the accusations of theft and misconduct, the unscholarly behavior of the protagonists. Indeed, the similarities with the historical precedents are the most incredible aspect of this episode, demonstrating that the discipline has learnt nothing in the last 180 years from its own mistakes. If it is to improve at all, its epistemology must be put under the microscope.

I shall attempt that here.

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