Our Heritage- Stone Tools and Rock Art

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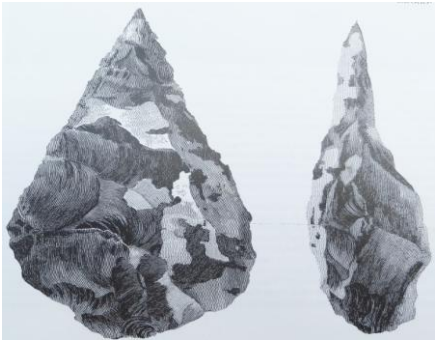
This lecture followed earlier talks to this society and the Harrow Natural History Society http://www.hhgs.org.uk/monthly_meetings/previous_meetings/african_art/african_art.htm and http://harrownaturalhistory.org.uk/Challenging_current_wisdom_that_modern_man_migrated_out_of_Africa.htm, which concentrated on migratory patterns between ice age Eurasia and North Africa during the African Humid Period (AHP), when North Africa was a lush green savannah teeming with wild life and imported domestic bovids.

It examined the development of the cognitive ability of modern *Homo sapiens* via stone tool manufacture over the past 2 million years, pre-historic cave art both in Africa and Europe, rock carvings in the Libyan Desert and 40,000 year old ivory tusk carvings and musical instruments that survived the ice age. Earlier evidence is sadly missing. It was stated that cognisance must be taken of proven climate changes where possible over these periods in which to packet and age the different aspects of *Homo sapiens* development.

Stone-tool technology

The progression of stone-tool technology over the past 2 million years from a rounded stone with a point (Oldwan Industry) to the iconic knapped, bifacial, pear-drop shaped hand axe was briefly outlined as was the reconstructed associated hominid images. This technology reached its apex c250,000 years ago with the introduction of a core from which knapped, symmetrical, bi-face hand axes were produced. This is referred to as the Levallois method and Professor Stringer of the Natural History Museum used this innovative intelligent approach to define the start of the Middle Palaeolithic Era**.** The speaker considered that the hand axe is incorrectly named in that it could be demonstrated that that this stone tool is ergonomically perfect for the removal of the limb extremities of an animal and the removal of the hide in one piece without damage. The axe is certainly not suitable for forest clearance for agricultural purposes.

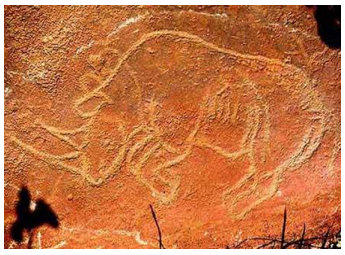


Flint hand axe

He also considered that this tool shape with its serrated edges may not be a marker at all of the migration ‘Out of Africa’ as current wisdom dictates but that it would, in all probability, be invented by hominids wherever meat was a staple diet and where warm clothing and shelter was a necessity. As there is plenty of evidence of almost identical inventions, both ancient and modern, taking place in total isolation there is every reason to believe that this was also the case of the ‘stone axe’. Despite the innovative Levallois approach, future stone tool development was basically limited to hand weapons such as spears and arrow heads. Later tools included fishing hooks made from bone or ivory.

Communication through art

Domestic bovid, Libya



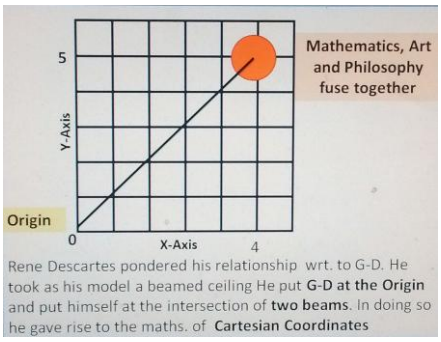
Charging rhino, South Africa

Altamira cave painting – 35,000 years

The speaker presented the case to demonstrate that communication via diagrammatic art rather than stone-tool technology was the major contributor to the development of our cognitive abilities. Evidence for this thesis is based on the art trail from Eurasia to Africa, which shows very similar levels of artistic style and attainment between the rock carvings in the Akkakus area of Libya and the cave art at Lascaux, France, and Altamira, Spain. The Rock Carvings of elephant, rhinoceros, giraffe etc. in the present Sahara Desert, demonstrated an amazing level of detail, perspective and a full understanding of motion.

One AHP carving in particular was singled out as it showed the hind quarters of two distinct animals (bovid and antelope) scaled to the same size and joined at the middle. This demonstrated the use of art to depict the abstract thoughts of the artist. It compares with Picasso's iconic drawing of 2 aspects of a female head displayed by surrounding the profile so as to also depict a full face. It can be argued that Picasso asked himself the same question the rock carver did some 12-17000 years ago ie 'I wonder what the result will look like'. An extreme example of our cognitive development is the now everyday use of mathematically derived art (graphs) to display the relationship between any two variables – eg £sterling vs. US$. This system was developed by the 17th Century philosopher Rene Descartes to describe his position in life relative to God, whom he placed at the origin. In doing so, he set out the concept which we now refer to as Cartesian co-ordinates. At this point art, philosophy and mathematics come together in one pictorial diagram.

Joined bovid

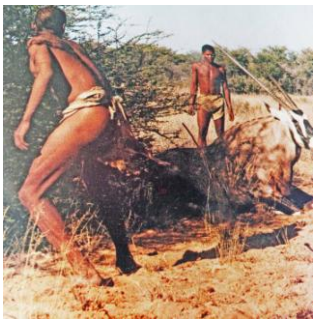


Cartesian coordinates as set out by Descartes

Powered bows and arrows v hand spears

In contrast to the very detailed Eurasian art format, African-based cave art from South to North Africa is very graphic in its depiction of communal activities such as dancing, hunting, herding and battles using stylised 'matchstick men'. These cave paintings, which could easily be in excess of 50,000 years old, compared very favourably to LS Lowry's paintings of stylised match-stick people going about their business in the 1920s. The idea of having a technical advantage over an enemy ie the bow and arrow v the hand spear was graphically shown in both North and South African Cave paintings. These could well be between 30-50,000 years old and possibly very much earlier.

The speaker then described the method by which hunter-gatherers hunted wild bovids. The animal was wounded and pursued until it dropped from exhaustion. The jugular vein was cut to allow the blood to be pumped out and used for liquid refreshment by the hunters. This removal of blood delayed putrefaction, allowing the edible parts to be taken to the home-base. At the end of the AHP, these people would have migrated to the fertile Nile delta area and this practice would eventually find its way into the religion as kosher and halal meat. It continues in present-day Somalia, as well as in the Kalahari Desert.



Hunting to exhaustion - Kalahari

This thesis of ancient conceptual art was further demonstrated by the speaker's suggestion that the 40,00 year old Venus figurine were not primarily symbols of female fertility but are, in fact, a conceptual interpretation of the human reproductive system. The absence of facial features on the heads of these figures suggested they are a stylised representation of the male phallus, with the breasts doubling up as testes. If this is the case, then the thought processes behind these figurines stand alongside Picasso's 'Guernica' for sheer brilliance.

Venus figurines

Further evidence of cognitive development was presented via the evidence of 40,000 year old multi-holed flutes made from the hollowed bone of a griffon vulture, whose notes closely resemble the present day octave sounds. This would have enabled the clear understanding of different tones of similar sound level to denote activities such as a cry for help or a command for action.

The role of Neanderthal man in the development of 'modern man' should also be investigated as they lived contemporaneously with early modern humans and modern humans. The speaker considered that there is insufficient evidence to support this demarcation between early modern and modern humans. As computer simulation has demonstrated that the Neanderthal hypoid bone is functionally the same as that of modern man, speech communication must have also been similar. Neanderthal man was intelligent and compassionate and certainly not a brute. Skeletal remains show healed broken bones and provisions for the afterlife. It is unreasonable to believe that over the time-span of their existence they had zero input to cave art and our cognitive development. In view of shared DNA, albeit on a small scale, the total absence of some common facial features and brain layout, it is possible that the Neanderthal genes needed for survival in ice age Eurasia were in fact latent in some of the incoming migrant population. The latent genes could well have been further developed by evolution within the migrant population and not necessarily be a function of interbreeding. Despite this matter being very contentious, an expert geneticist has suggested that this line of thought should not be ruled out.

The question remains of when and where dwarfism of bovids took place to allow their domestication for use as motive power for farming during the AHP. A carving in Libya, alongside other evidence, shows 'cotton clothed' Caucasian looking females holding saddled domesticated bovid. It is thus possible that cotton was cultivated and spun in what is now present-day Egypt some 20,000 or even more years ago. Once again dating of human development and activity as well as the Mesolithic/Neolithic boundary is difficult to determine without prior knowledge of the then climatic conditions.

Domestic farming scene with saddled bovid

Conclusion

It is obvious that the passing on of hunting, storytelling and general survival knowledge from one generation to the next must have been illustrative. Over extended time periods the illustrations used to depict thought processes resulted in the written word. In so doing our cognitive development is still very much in evidence and still growing. **Stone tool technology however sophisticated is not capable of yielding this development.**