Research News

Myths and Methods in Ice Age Art

The painted caves of Ice Age Europe have always entranced those who study them, but new directions in archeology are showing how some popular interpretations might have gone awry

THE study of European Ice Age art is in the midst of a major conceptual revolution. Until very recently, the most authoritative interpretation of these painted and engraved images of the Upper Paleolithic period, which stretched between 35,000 and 10,000 years ago, implied a certain uniformity of meaning and context for the people who made them. "We are now beginning to see a great deal more diversity and complexity in Upper Paleolithic art," says Randall White of New York University (NYU). "And this affects the way we envisage what was going on during this important stage of human evolution."

The new direction for Upper Paleolithic archeology is not the result of discovery of new material, because the vast majority of art objects and associated stone, bone, and ivory technological implements were unearthed more than three decades ago. "What has happened in the 1980's is that we are giving more emphasis to social and symbolic factors as instigators of change, rather than such factors just tagging along behind environmental and technological change," says White. It is a new way of looking at existing objects and old problems.

"We are just beginning to ask the questions that everyone thought we should have answered by now," says Margaret Conkey of the State University of New York at Binghamton. Conkey was speaking at a symposium entitled "Life in Ice Age Europe," which White recently organized at NYU, in conjunction with the American Museum of Natural History. That meeting brought to this country some of the key French researchers in paleolithic archeology and clearly demonstrated the realignment that is happening in the science on both continents.

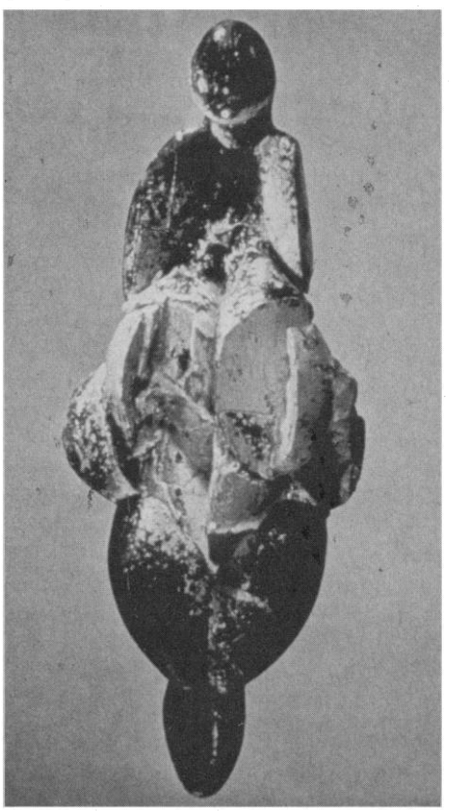
The meeting had been called to coincide with a major new exhibition* at the American Museum, organized by White in conjunction with one of the museum's curators, Ian Tattersall. Like the Ancestors exhibition of 2 years ago, which brought together originals—not replicas—of some of the most important prehuman fossils, this latest event puts on show a collection of original engraved and carved art objects of the Upper Paleolithic. The objects—more than 200 in total—come from museums in the United States, Canada, Germany, Italy, and France, and some of them have never previously been on public view.

If nothing else, the American Museum's exhibit will help adjust the focus of what people think of in terms of Ice Age art. "Most people think of the cave paintings when you talk about Upper Paleolithic art," says White. "And of course they are very dramatic. But the portable art, the little engraved and carved pieces, these are often just as exquisite, but in a different way. They are an important aspect of the complexity of the art of the period."

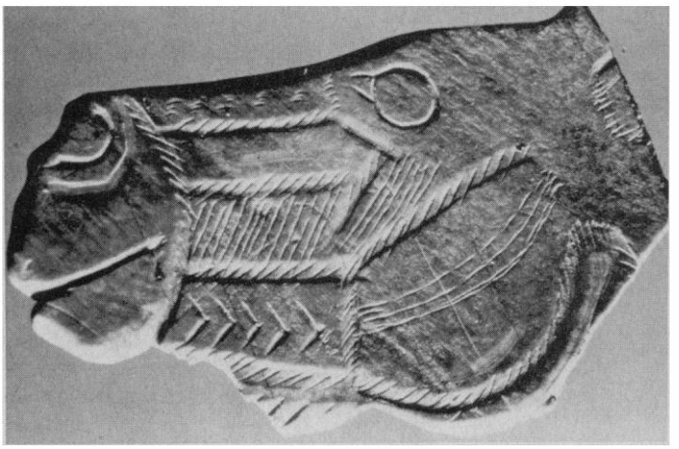
The beginning of the Upper Paleolithic in western Europe, 35,000 years ago, marks the first appearance of fully modern humans, *Homo sapiens sapiens*, in that part of the world. And the fact that this arrival is followed by the elaboration of what is undeniably striking cultural activity has tended to give a Eurocentric bias to the origins of modern man. It was as if the ability and inclination to paint the walls of, for instance, Lascaux cave in southwestern France, was a prerequisite to achieving the status of fully

*"Dark Caves, Bright Visions," at the American Museum of Natural History, New York, open through January 1987.

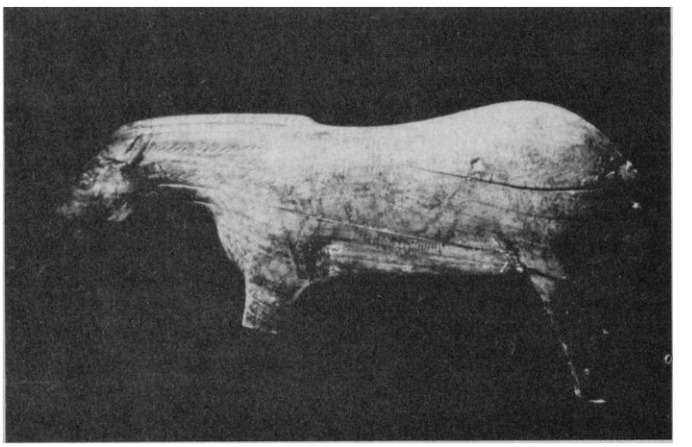
Spear-thrower, *10.5 centimeters long, showing bison licking its flank; reindeer antler.* [*From La Madeleine, Dordogne, France; courtesy of Musée des Antiquités Nationales, near Paris*]



Venus of Lespugue, *14.7 centimeters high, sculpted from mammoth ivory.* [*Courtesy of Musée de l'Homme, Paris*]



Cutaway engraving of a horse's head, *4.6 centimeters long and 0.5 millimeters thick, on a flat piece of bone.* [*From St. Michel d'Arudy, Pyrenees, France; courtesy of Musée des Antiquités*]



Horse sculpted in ivory, *7.3 centimeters long. Details of the coat appear only on one side of the piece.* [*From Lourdes, Pyrenees, France; courtesy Musée des Antiquités Nationales*]

modern man. But, as both fossil and molecular biological evidence is now indicating, *Homo sapiens sapiens* may well have originated in Africa, perhaps as much as 60,000 years before the first caves were painted in western Europe.

It is against this background that the larger meaning of European Ice Age art has to be evaluated. The painting, engraving, and carving in Europe may well represent a cultural explosion of sorts, but it could simply be the local expression of a cognitive capacity that was already more widely spread in human populations throughout much of the Old World. Ice Age art may therefore not be *the* cultural expression of *Homo sapiens sapiens*, but simply *a* cultural expression. In other words, says Conkey, the question archeologists must address is "what is it about a particular society that leads it to produce a material culture such as we see in Europe in the Upper Paleolithic?"

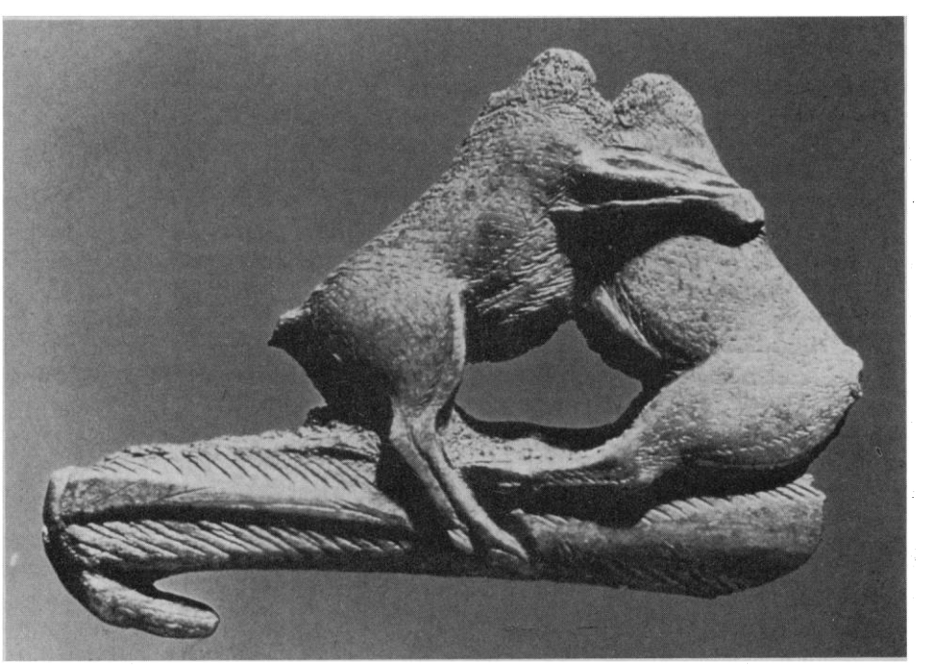
One aspect of society that has often been assumed is that it was very simple, specifically that it was socially and economically unstratified in the way of the idealized model of hunter-gatherers that, until recently, most anthropologists favored. "Fortunately, this model is now leaving us," says Olger Soffer, of the University of Illinois, who works on Upper Paleolithic sites in eastern Europe. It may be that social structure in western European populations was rather simple, she says, but there appears to be evidence of inequalities in 17,000 year old settlements in the Central Russian Plain.

At the site of Mezin, for instance, there is a clearly skewed distribution of food-storage, which can be interpreted as economic inequality. And at another site, Mezhirich, a series of four dwellings that are constructed from mammoth bones show striking similarities in architecture. "The houses conform to a mental template, a social norm of some kind," says Soffer. "It looks as if the act of building itself was somehow very important."

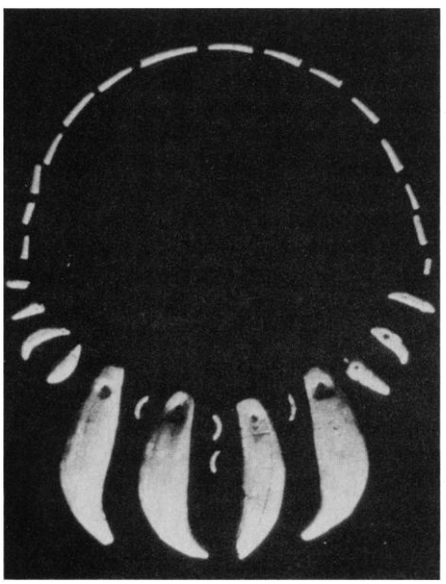
Soffer sees in these structural elements in everyday living indications of a degree of complexity that until recently has been overlooked. If nothing else, the difference between the cultural and utilitarian life on the Central Russian Plain and western Europe speaks for a diversity that is at odds with the long-held notion of uniformity. "Ice Age Europeans were probably as different from each other as are their equivalents today," suggests Soffer.

The Upper Paleolithic of western Europe is divided into various stages as defined by certain elements of the stone and bone tool technology. The art changes to some degree through time too, but there is no direct correlation between artistic and technological stages. It is clear, however, that the paintings, upon which so much interest has been focused, do not become really important until halfway through the Upper Paleolithic. Carved and engraved items, by contrast, occur throughout.

Pierced beads crafted from mammoth ivory, which by White's calculation require about half an hour each to make, are very common early on but quickly fade out. "It looks as though body ornamentation using strung beads was important to these people initially," says White. "Later on you see carved pendants of various sorts, and



Spear-thrower, *9 by 7 centimeters, sculpted from reindeer antler, showing two headless ibex possibly fighting.* [*From Enlène Cave, Ariège, France; courtesy of Musée de l'Homme*]



Necklace *made of shells and pierced bear and lion teeth. [From Rocher de la Peine, Dordogne; courtesy of Beloit College, Wisconsin]*

pierced animal teeth." White believes that the importance that Upper Paleolithic people appeared to have placed on body ornamentation might indicate a degree of symbolism in human relations that is not obvious earlier in the archeological record.

In reconstructing beads and pierced teeth as necklaces White is careful to point out, however, that "we assume that the beads were worn in this way, but they may have been used quite differently." Conkey agrees that caution is necessary. "Once the necklace image is created, it is almost impossible to erase it from your mind. Once you call these things body ornamentation you evoke all kinds of images drawn from your own experience." Art, including body ornamentation, is by its nature so much a part of a particular culture as well as a product of that culture that interpretation of it from a distance, particularly a distance of some 20,000 years or so, is always potentially hazardous.

A good example of this, perhaps, comes from the paintings on rock shelters and caves, which were for a long time interpreted as some kind of hunting magic. It was a "natural" suggestion to make, especially as there are some ethnographic analogies to draw on. But, principally following the influence of the late André Leroi-Gourhan, there developed during the 1960's onward the view that the art in some way encapsulated the artists' world. It was a structured world, divided between maleness and femaleness, which was said to be represented in a common pattern throughout all the caves. However, Denis Vialou of the Musée de l'Homme in Paris has recently been documenting in great detail the distribution of images in some of the most important caves in France and does not see the kind of repeated pattern that Leroi-Gourhan predicted. Where Leroi-Gourhan talked of similarities between caves, Vialou sees differences. Each cave, he says, should be viewed as a separate expression.

Henri Delporte of the Musée des Antiquités Nationales near Paris has come to a similar conclusion but from a different direction. He and his colleagues have been experimentally recreating painted and engraved images as a way of trying to understand something of the technological context of the art. Delporte has also been documenting the Paleolithic images as well as examining more recent representations of animals, in pottery and sculpture, by way of comparison of the sort of subjects artists like to portray. One conclusion is that artists mostly paint or carve what they do not eat, which is a blow to the hunting magic idea. But most important is a sense of diversity, both in the production and the effect of the images. Esthetics, which is often left out of scholarly considerations of Ice Age art, must have been a factor, he says.

Delporte has also documented some fundamental differences between wall art and portable art, in such things as the types of images portayed in each medium and the pairing of the various images. His final conclusion, therefore, is that "there were probably many different reasons why people produced art of different kinds, and we shouldn't just think of single explanations."

Diversity, then, begins to come through as a more realistic interpretive lens for the Upper Paleolithic, a diversity of people, a diversity of cultures, and a diversity of the meaning of the art. And there is a shift from trying to understand what an individual image or set of images might mean to how one might understand the social context in which those images were produced. Most of all, there is an attempt to try to divest modern interpretations of the bias inherent in modern eyes and minds. As Conkey says, "Perhaps we have closed off certain lines of inquiry, simply by using the label 'art.' " ■

ROGER LEWIN

Debate About Epilepsy: What Initiates Seizures?

Theories about what causes nerve cells in the brain to fire in abnormal synchrony during a seizure include changes in synaptic communication or in the ionic environment and abnormalities in specific brain structures and circuits

ONE of the most frustrating aspects of research in epilepsy has been the search for a common mechanism or brain abnormality that initiates seizures. Given the wide variety of seizures, it is not surprising that finding a common denominator has remained an elusive goal. It may turn out that no such common factor exists, but rather that different kinds of seizures are triggered in different ways. But irrespective of their diversity, seizures are similar in one critical aspect—during a seizure neurons in the brain fire together in unusual synchrony.

Participants at a recent meeting, "Mechanisms of Epileptogenesis: From Membranes to Man,"* discussed why neurons spontaneously begin to fire in abnormal synchrony. Neuroscientists agree that at least some of the mechanisms responsible for initiating seizures may also be important during normal brain processes—learning and memory, for example. But there is also clear evidence of abnormal electrical activity in the brain of an epileptic patient.

People with epilepsy have recurrent spontaneous seizures, not just one. But even in chronic epilepsy, which affects about 1% of the population, seizures vary widely in duration, intensity, behavioral manifestations, how much of the brain is involved, and sensitivity to drugs.

Although someone with epilepsy does not have seizures all the time, even between

*"Mechanisms of Epileptogenesis: From Membranes to Man" was held in Philadelphia, Pennsylvania, 25 to 26 September 1986. The meeting was sponsored by the Graduate Hospital in affiliation with the University of Pennsylvania School of Medicine.