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THE ART AND SYMBOLS OF ICE AGE MAN

Alexander Marshack

From his base at the Peabody Museum of Archaeology and Ethnology at Harvard University, the late Alexander Marshack initiated an important rethinking of the art and artifacts of prehistory. He published a major book, The Roots of Civilization, and numerous articles on the subject.

Prehistory is mute. We have no record of the languages, the myths, or the lore of the scattered hunting cultures that existed for tens of thousands of years before the rise of farming and the development of the early agricultural civilizations. History, according to the accepted definition, began with writing, with recorded languages written on clay, stone, and papyrus, languages we have learned to decipher and to read, if not to speak. These ancient writings gave us the names and dates of kings, priests, dynasties, cities, battles, gods, and goddesses, as well as a record of the sale of sheep, cows, land, grain, and labor. History, by this definition, began only about 5,000 years ago with the development in Mesopotamia, Egypt, and Asia of early forms of pictographic writing.

But man began making images and keeping symbolic records more than 25,000 years before the invention of true writing. He began during the last Ice Age, not long after modern man, or *Homo sapiens*, appeared in Europe, about 35,000 B.C. The steps from these prehistoric images and symbol systems to writing and history are only now beginning to be scientifically explored and discussed.

Equally important, the efforts by still earlier forms of man toward the making of images are beginning to be tentatively discussed. It is now clear, for instance, that long before modern man appeared in Europe, Neanderthal man was making and using symbols and images. The artifacts from this earlier period are still few and our understanding of them is tenuous. But they are there, and the study of them has begun.

In 1964, the Hungarian archaeologist Laszlo Vertés published a photograph of an unusual small oval object that had been carved by a Neanderthal man about 45,000 years ago from a section of

woolly-mammoth tooth. After carefully carving the object and beveling one edge for easier handling, the artist painted the shiny surface with red ocher.

The Neanderthal plaque was found near Tata, Hungary, almost 100 years after the carved and engraved animal images made by later Cro-Magnon hunters began to be excavated in rock shelters of France. These Cro-Magnon images, illustrating extinct species like the mammoth and woolly rhinoceros, were hard for 19th Century Europeans to accept as valid and they were difficult to understand, in much the same way that the Neanderthal Tata plaque is hard to accept or to understand today. When a skeleton of Cro-Magnon man was found in 1868, researchers realized that, physically, the hunter of animals during the Ice Age was exactly like modern *Homo sapiens*. At that time the animal images were interpreted as hunting magic, and it was suggested that they were used by our apparently crude ancestors in primitive ritual to ensure the supply of food. Since the images were considered to be either magic or art or merely decoration, they were not systematically studied by archaeologists.

When I examined the Neanderthal Tata plaque and the animal images of Cro-Magnon man under a low-power microscope to see how they were carved and how the artifacts had been used, I was startled by the many new facts I found. The Neanderthal plaque had been carefully carved and beveled, but the microscope revealed that all marks of carving and scraping were missing. Instead, the edges of the plaque had been polished and worn by repeated handling. The microscope showed that the bone was not a tool, which would have shown most wear at the points of friction and use. Actually, it was an intentionally carved and painted symbolic object, an artifact apparently manufactured



Neanderthal plaque, carved mammoth tooth. Tata, Hungary, c. 45,000 B.C. Reprinted by permission of the author.

for nonutilitarian ritual use, and it had been kept and used for a long period. How was it used and for what purpose? We do not know.

For more than a century archaeologists believed that Cro-Magnon man had invented symbolic artifacts. It was known that Neanderthal man used red ocher, that he used animal bones, antlers, and skulls as symbols, and that he buried his dead with grave goods—in one case even with flowers. But there was a tendency among archaeologists to consider Neanderthal man as not yet fully human, though he had a brain volume as large or larger than that of modern man and he made exquisite tools of stone. There was even a dispute as to

whether he had any form of language, the belief being that the making of symbolic images and the development of modern language belonged only to fully modern human types.

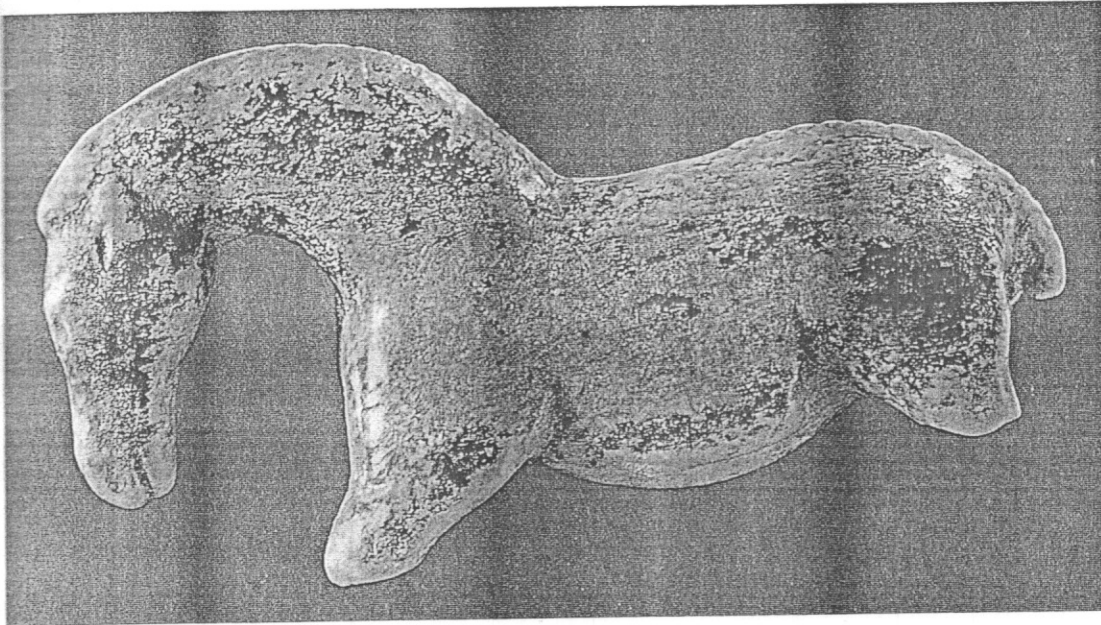
When I put the earliest animal carvings of Cro-Magnon man under the microscope, I found that they had also been used for long periods of time, much like the symbolic plaque from Tata. The beautiful two-and-a-half-inch-long horse of mammoth ivory from the site of Vogelherd, Germany, is the earliest known example of animal sculpture, dating from about 30,000 B.C. The carefully carved ear, nose, mouth, and mane had been worn down by persistent handling. At some point during this use, a fresh angle or "dart" had been engraved in its flank, apparently representing an act of specialized or ritual killing.

The plaque and horse are among the earliest known intentionally manufactured symbolic human artifacts. The analysis of the two artifacts provides us with a new kind of data for the perpetual debate on the possible reasons for the emergence of art and symbol. There have been many theories about their origins. One, proposed by the Abbé Henri Breuil, the man who began the scientific study of Ice Age art early in the 20th Century and who has been called "the father of prehistory," is that art began as doodling. On the soft clay walls of limestone caves in France and Spain are panels of interlacing finger scrawls that look like random "macaronis." Occasionally such macaronis form an image that looks like an animal. According to Breuil, it was by the occasional recognition of an animal form among such random doodlings that art was born. Unfortunately the sophisticated Vogelherd horse, which is carved of ivory, is at least 5,000 or 10,000 years older than the oldest cave macaronis. The symbolic Neanderthal plaque from Tata, which is not an animal image, was certainly not derived from doodling. Besides, the limestone caves of France and Spain are geographic phenomena limited to that part of Europe. Images and symbols were made during the Ice Age wherever the hunters lived, from Spain to Siberia, in areas where there are no caves and therefore no cave macaronis or cave art.

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Mammoth ivory horse, earliest known animal carving. Vogelherd, Germany, c. 30,000 B.C. *Reprinted by permission of the author.*

Psychologists working with chimpanzees have made suggestions similar to those of Breuil. A chimpanzee can scribble and doodle lines and forms on a piece of paper. A female chimpanzee, Mojo, once made an image that she and the researchers who were training her, Allen and Beatrice Gardner, recognized as a bird. The problem with such data concerning the capacity of the chimpanzee to make, name, or use images is that the chimpanzees are being encouraged to make and are being taught to recognize and name images. Naming and the use of named images in communication is an evolved aspect of human culture and behavior and is not a normal aspect of chimpanzee culture and behavior. The chimpanzee capacity for such near-human behavior is apparently present, but since it is neither functional nor adaptive for chimpanzees in the wild, it has not been selected for evolutionary genetic development.

Many animals show capacities under human training and testing that are non-functional in their normal environments and that therefore remain as mere potential capacities in the species.

The use of the chimpanzee capacity for visual abstraction and symbol recognition does not produce chimpanzee art. It produces an essentially learned and human-type image based on human naming. The naming of objects is a form of classification, differentiation, and consequently of description. This is possible only in a human context where such differentiations have become cultural and functional. A baby can babble, but the babbling does not lead to speech unless it develops in a culture that uses speech. Similarly, without a cultural context, doodling does not lead to art.

This is important for discussing the possible origins of art and symbol. If we go back to the Tata plaque and the Vogelherd horse, we find that we are not dealing with objects or images but with symbolic artifacts that were made to be *used*, and apparently to be used at the proper time and in the proper way. Such use implies a cultural tradition, and it was this tradition that made the artifacts possible, meaningful, and useful. I assume, then, that Neanderthal man had a human-type culture. The plaque was not the result of an idiosyncratic,

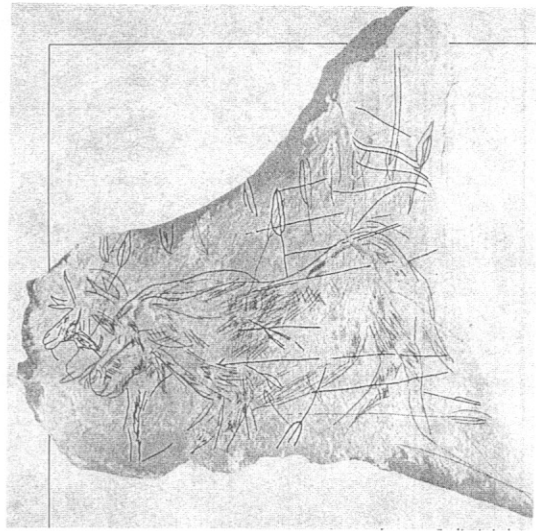
individual effort at carving or aesthetic expression, that is, an instance of doodling. In some form or another, the plaque had a name and a cultural use.

If we consider the Vogelherd horse as a late example in a slowly developing human tradition of making and using symbols, then the difference between the plaque, which we cannot name or explain, and the horse, which we can name but cannot explain, is not so great. It was not the shape of the artifact but the creation and use of artificial images and symbols as part of the cultural process that was truly human and revolutionary.

What Cro-Magnon man had apparently achieved was a more complex symbolic culture and social organization than Neanderthal man. Cro-Magnon marked or noted social and cultural processes with a greater range of symbols and images, each of which had some special meaning in the culture. These images and symbols were apparently used as we use images and symbols today—to mark rituals and ceremonies, to indicate differences in age, sex, and rank, to signify important processes, and to stand for parts of myths and stories. Images, in other words, were made to be used. It was this form of image use that, in a sense, erupted in the efflorescence of Ice Age art. But it was not an artistic revolution; it was a cultural revolution.

From the terminal period of the Ice Age cultures of Europe at the Italian site of Paglicci comes the image of a horse engraved on a horse pelvis. Microscopic examination of the image indicates that the horse had been symbolically killed 27 times. This was signified by the engraving in and around the horse of feathered darts and spears, each made by a different engraving point and in a different style, apparently over a considerable period of time. Clearly, the horse never died. Like the Vogelherd horse, this horse was a symbol that could be used at the proper time and in the proper way.

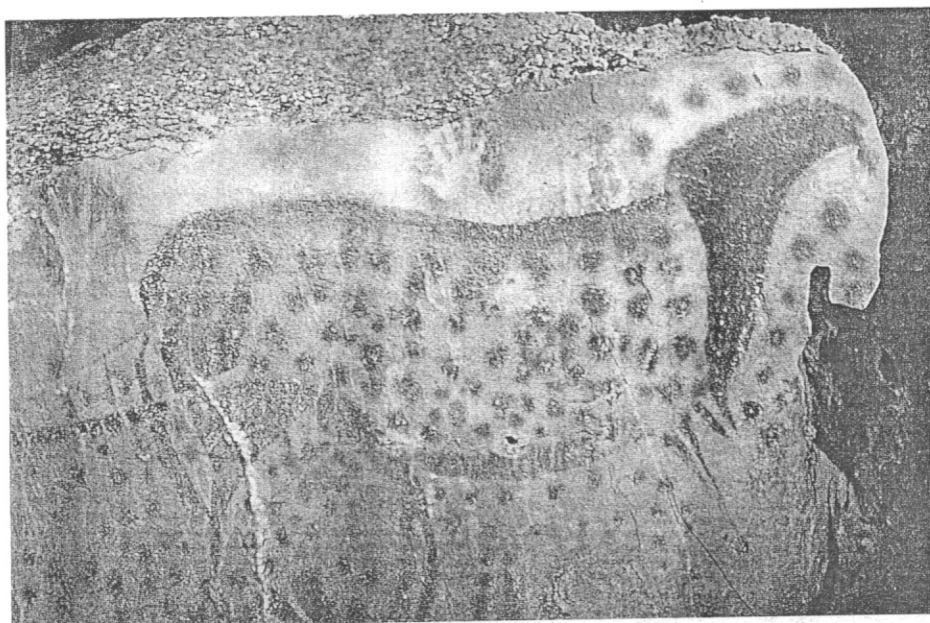
Archaeologists first interpreted such images of killed animals as products of magic intended to ensure success in the hunt. In simple hunting magic an animal image is made and then "killed." Its "death" usually terminates the use of the image that had been made for that hunt. Here, however, the image continues to be used. It has become a symbol, not of



Horse engraved on pelvis. The 27 darts and spears depicted were each incised by a different point and in a different style, indicating ritual reuse of the engraving. Paglicci, Italy, end of the Ice Age. Reprinted by permission of the author.

one horse or of one hunt and meal, but of all horses and perhaps of a horse myth as well. As in many hunting cultures that kill animals for diverse ritual purposes, the Paglicci horse may have had nothing to do with hunting. An important spirit animal could, for instance, have been symbolically sacrificed, even by the act of killing the image, for a curing, a birth, an initiation ceremony, or even a death.

Analyses of Ice Age animal images have shown that they were used for many different purposes. The analysis of two painted horses in the cave of Pech-Merle, France, painted about 5,000 years before the end of the Ice Age, clearly demonstrates these periodic multiple uses of the animal image. There are no darts that signify killing in the Pech-Merle horses. The artist outlined a horse in black paint on a rock that was shaped like a horse. Infrared analysis indicates that over a period of time this empty horse outline was filled with red and black spots made of many different pigments and ochers. The horse was used, but not necessarily "killed." When the horse was filled, additional spots, along with hand prints, were placed around it, again



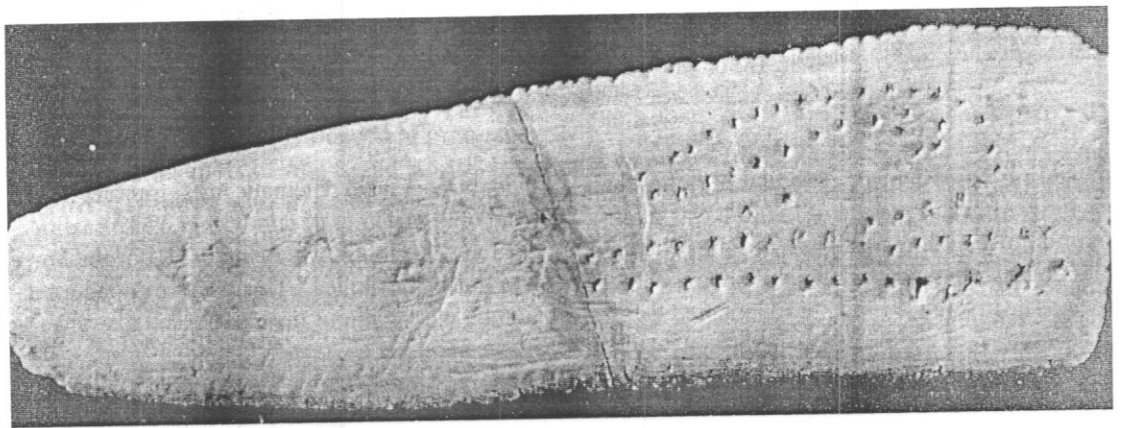
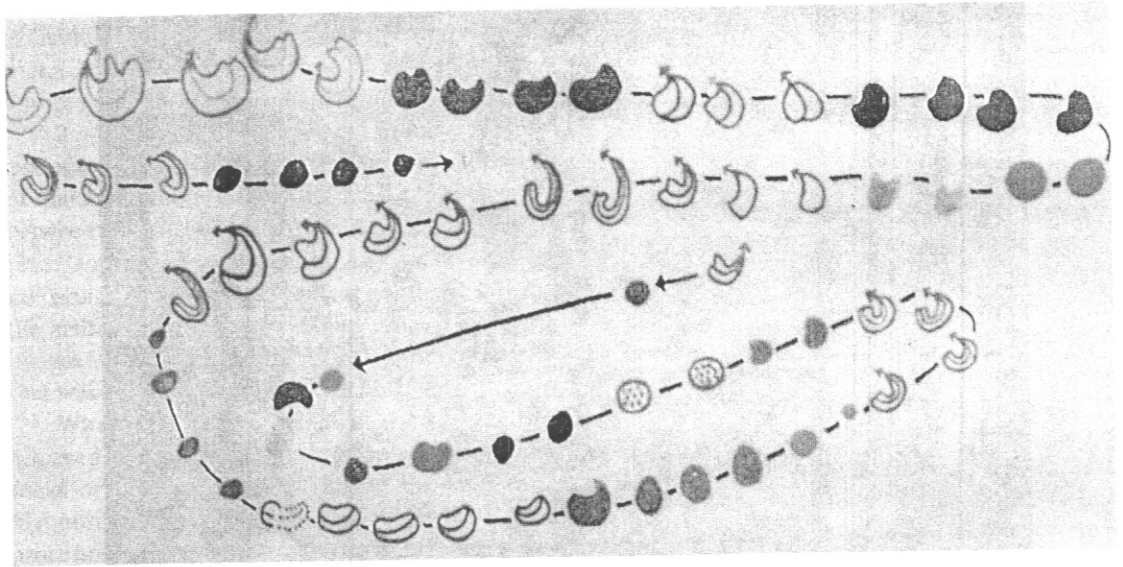
Pech-Merle spotted horse. The outline was filled with spots over a period of time, and hand prints and more spots were added later. France, c. 14,500 B.C. *Reprinted by permission of the author.*

suggesting a use of the image and wall rather than a killing. After this section of the wall was filled, a second horse outline was made and the process of marking it with spots was begun again. In addition, within the first horse is painted a large red fish—a pike—and on its chest is a huge perfect circle made with a different ocher. Neither of these images is related to a killing of the horse. They could be symbolically related to the horse in some context involving the seasons or the sun. We do not know what these uses and symbols (darts, hand prints, signs, and fish) entailed, but they do *not* seem to have been involved in simple hunting magic.

This use of the horse image without any indication of a killing of the animal is documented throughout Ice Age art. A simple example will show why such usage escaped archaeological attention. A broken fragment of reindeer antler from the Ice Age site of Kesslerloch, in Switzerland, is engraved with a horse head. Since the fragment was neither a tool nor a costume piece, the horse head cannot be considered decoration. Microscopic examination of the image shows that the head had been renewed

twice by engraving schematic horse muzzles on the front of it, each muzzle faintly engraved by a different tool. The image was being used, but the horse was not being “killed.” This usage escaped attention because, without the aid of a microscope, the image appeared to be merely a horse head.

There is another class of Ice Age marking and symbol that is completely different from the recognizable animal image. From the same early Ice Age period as the Vogelherd horse, comes a small shaped bone reminiscent of the Tata plaque. It is about the same size as the Tata plaque and was found in a Cro-Magnon rock shelter at Blanchard, France. Microscopic analysis indicated that the plaque, unlike the one from Tata, had in fact been used as a tool. The front end was broken by persistent pressure and the back is highly polished where it sat in the palm of the hand while being used. The plaque was a pressure flaker that had been used, apparently for a long time, to sharpen the point or edge of stone tools. It was probably made for that purpose and may have been carried about in a pouch or pocket.



Cro-Magnon bone tool and magnified sketch of engraving, earliest known form of notation, may mark phases of the moon. Blanchard, France, c. 28,000 B.C. *Reprinted by permission of the author.*

The microscope showed that during its use the plaque had been engraved with 29 sets of marks, each set made at a different time with a different point and in a different style. The accumulation had slowly formed a serpentine image. It was almost as though someone, 25,000 years before the development of writing and arithmetic, was keeping a record of some process or series of events and was structuring it in a manner that he could "read." After some arithmetic tests, I found that the twists and turns corresponded to the changing phases of the moon, all the full moons falling at the left, all

the half moons in the middle, and all the crescents at the right. The fit was perfect for an observational lunar notation. There is no proof, of course, that it was a lunar notation, but clearly it was some form of notation. There is no evidence of arithmetic counting in the sequence, but many primitive people without a knowledge of arithmetic notice the changing periods of the moon and sun and stars.

If the cultural origins of art were based not on doodling or an aesthetic expression but on the manufacture of meaningful images that were intended to be made and used at the right time and in the right

way, perhaps the origins of notation or record keeping were also related to the developing complexity of man's symbolic and economic life. If the economic and ritual activities of prehistoric man had to be performed at the right time, then images, symbols, and notations together may have served as a means of structuring these periodic cultural activities.

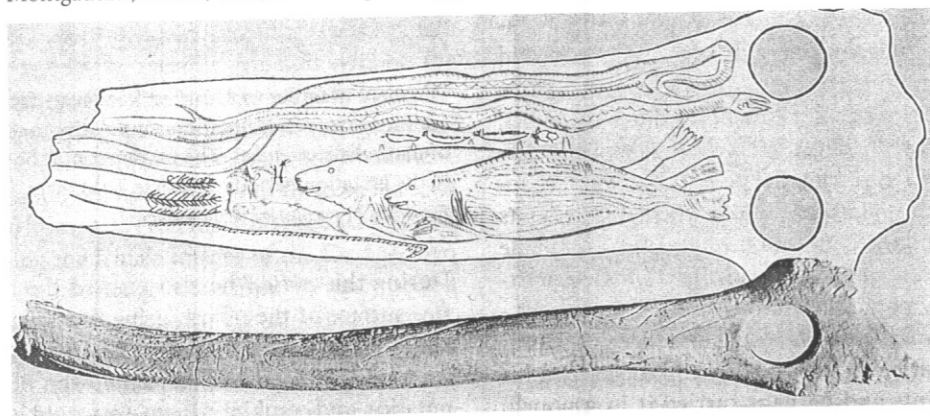
An example of how the tradition of accumulating meaningful images developed comes from the end of the Ice Age, about 11,000 to 10,000 B.C. A decorated shaft straightener or "pierced bâton," as they are sometimes called, was found in the 19th Century at the French shelter of Montgaudier. (A shaft straightener is a long bone with a hole at one end. A spear is put through the holes of two such straighteners, which are then used as handles to bend the shaft, often over a fire.) It was only when I examined it by microscope a few years ago that it became clear that it had engraved on one face a bull and cow seal, a male salmon with a hook on the lower jaw that it develops only after leaving the Atlantic and beginning its spawning run upriver, a flower in full bloom, and three plants in full leaf. The bull seal collects his harem of cows in the early spring, at the same time that the salmon arrive for their spawning run. On the reverse face of the bâton there are two serpents that mate in the spring. The full composition contained related images of spring. Into this composition was engraved one small, crude, schematic

ibex or wild goat head with an "X" on its head as though it had been symbolically killed in a ritual related to the coming of spring. None of the other animals had killing marks, though salmon and seal were surely hunted.

Images and symbols, according to this theory, were markers of periodic and continuous cultural processes, of rites, and of repetitive myths and stories, whereas notations of whatever sort were apparently means of recording the passage of time in terms of culturally significant events. In the case of the Blanchard pressure flaker, the notation had apparently been used to mark the days or nights and the different phases of the moon. But a lunar notation could also have been achieved by marking a sequence of images illustrating the crescent, half, full, half, and crescent moons. That too would have been a non-arithmetical lunar notation.

In the early period of the Ice Age, images like the Vogelherd horse and notations like the serpentine Blanchard image occurred separately. They were distinct symbol systems and they were made separately, much as we may have writing on one page, an image on another, and a column of numbers on yet another. Toward the last stages of the Ice Age, however, one begins to find complex accumulations and compositions in which many different systems are combined and used together: images, signs, symbols, and notations. The spotted horses in the cave of Pech-Merle are an indication

Engraved antler bâton; the seal, salmon, serpent, and plants suggest the spring season. Montgaudier, France, c. 10,000 B.C. *Reprinted by permission of the author.*



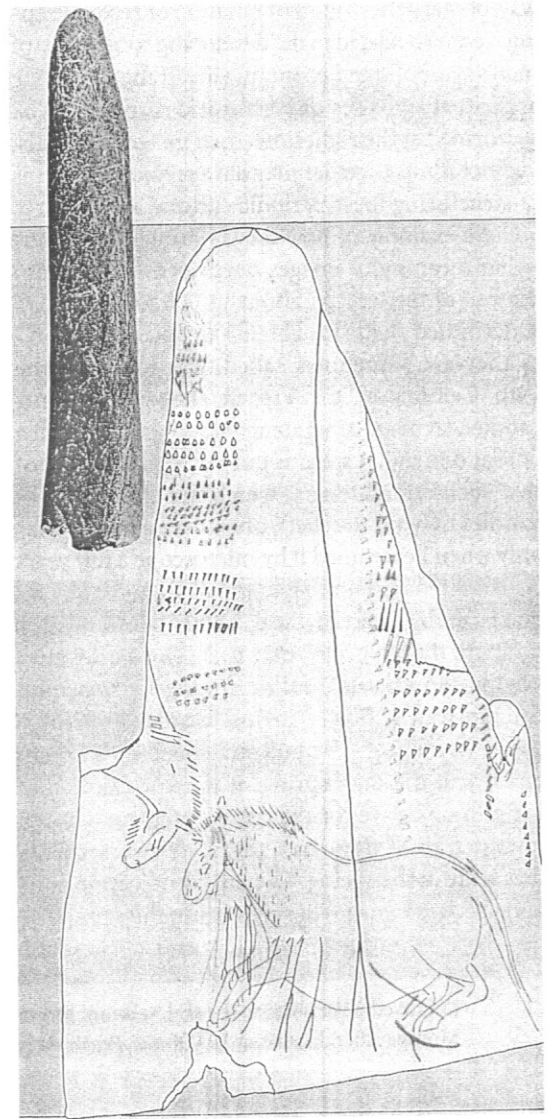
of this trend. But a similar process had begun to appear on artifacts found in the habitation shelter.

Some years after I had studied the Vogelherd horse and the Blanchard bone, which were from the early Cro-Magnon period and about 30,000 years old, I came upon a fragment of engraved reindeer antler, which was about 15,000 years old, from the French rock shelter of La Marche. It had been a practical tool, a pressure retoucher and flaker like the Blanchard bone, and its front end was rounded and broken back from use. A microscopic study of the piece of antler showed that it had once been a different type of tool, perhaps a shaft straightener with a hole at one end, but that the original tool had snapped during use and the fragment had been reshaped to its present form.

When it had been a shaft straightener, the La Marche antler fragment was engraved on one face with an accumulation of notations and with a horse image. The remnants of the horse and the notation were still visible. After it became a pressure flaker it was again engraved with one horse and an accumulation of notations, this time on the other face. What was fascinating was that the notations were accumulated in horizontal rows that proceeded downward from the tip. Each set or group of rows had been engraved by a different point. Usually the sets were made with a changed direction of engraving by reversing the antler for the marking of each set. The microscope suggested that the notations had been accumulated for a long time, perhaps over many months. Arithmetic tests indicated that the total came to seven-and-a-half lunar months.

The horse, which is located below the notations, is a pregnant mare that had been used and reused a number of times. It has three ears, three eyes, and two backs, all made by different points, which suggests that it had been renewed periodically, probably during the period of notational accumulation and use of the tool. There were also sets of darts engraved around the horse, each set made by a different point, suggesting that it had been ritually or symbolically killed a number of times.

The man using this piece of antler as a practical tool probably kept it with him to sharpen his stone points and perhaps carried it in a pouch.



Fragment of antler tool, earliest known artifact containing two types of notation: cumulative markings of naturalistic sketches. The markings may be related to the gestation period of a horse. La Marche, France. Reprinted by permission of the author.

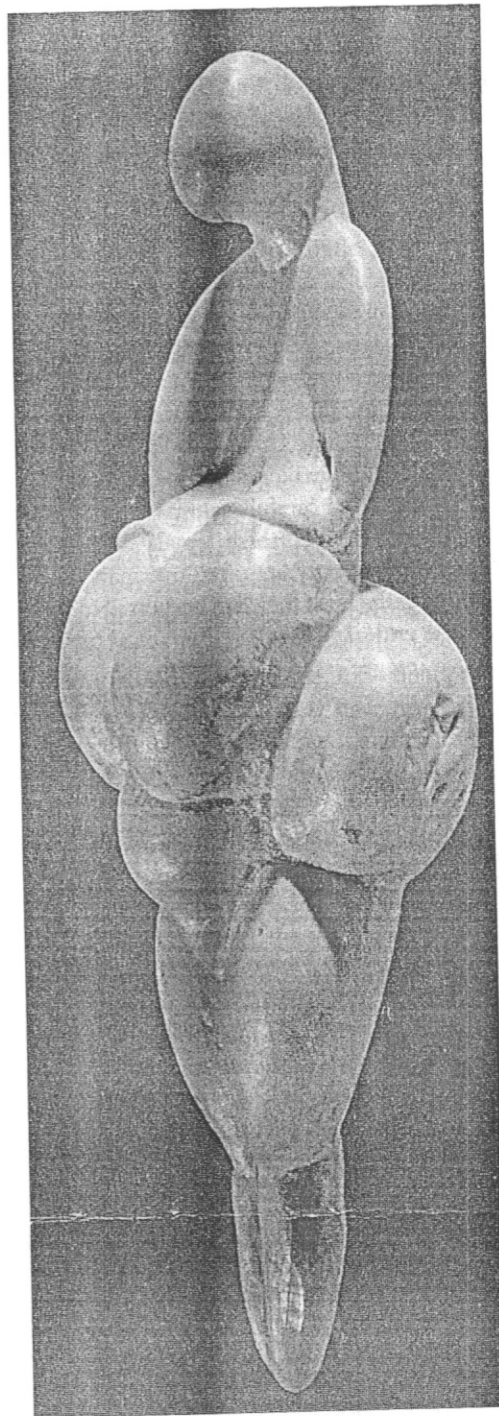
During this period he also marked the available free surface of the object, using two separate but culturally related symbol systems. Conceptually, if we took the Vogelherd horse and the Blanchard notation and combined them, we would have a re-

peatedly used horse and a periodically accumulated notation that looked like the La Marche antler. This combining of separate symbol systems as the Ice Age developed was one of the great intellectual achievements of man. Separate symbol systems and different types of imagery, each of which had a different specialized meaning and each of which was used differently, could be combined or associated. We do this when we use writing and numbers under a chart and then provide an image or graph to which the writing and numbers refer: These are three separate symbol systems within a single context. Ice Age man was apparently doing the same.

A test of the notations on the antler suggested that they might be nonarithmetic, observational lunar notations. The pregnancy period of a horse is 11 months. Whether the notations were related to the duration of a mare's pregnancy, we cannot tell; but we do know that for the engraver the notational accumulation and the renewal and "killing" of the horse image were somehow related.

The concept of symbols, images, and notations serving functionally as markers for periodic and continuous cultural processes and recognitions is new in the field of prehistoric archaeology. If it is a valid concept, we may have found one of the intellectual and cultural threads that leads eventually to true writing and to history. But these Ice Age symbol and image systems were not writing and arithmetic: We do not have history. We cannot decipher these Ice Age systems precisely and accurately and thus learn the dates, names, myths, or rituals to which they refer. Despite this we are able to state that the intelligence involved in the development and use of these images and symbols for cultural purposes is the same as we have today.

One can perhaps assume that the images of animals, the shaft straighteners, the tool retouchers, and the notations associated with them were made and used by men. We can make no such assumption concerning the female images of the Ice Age. Two types of female image come from the early period in France. The best known are the often magnificent "Venus" figurines, such as the famous Venus of Lespugue, carved of mammoth ivory. These Venus figurines have exaggerated hips and breasts, tiny



Carved mammoth ivory "Venus," Lespugue, France, c. 25,000 B.C. Reprinted by permission of the author.

feet, bent knees, and no faces. Similar images that date from the Ice Age have been found in Italy, Austria, Czechoslovakia, and the Ukraine. Images of naked females in a somewhat different style have been found at Ice Age sites in Siberia. These images often show the polish of long use and, at times, the remains of red ocher, which indicates that they were often symbolically painted. They have been called fertility images, but their actual meaning and use have not been discovered.

A second type of female image from the early period is the carved vulva image. Vulva shapes of this type are today found in rock engravings from Africa and Australia to South America. In France they are found carved on large blocks of limestone in an Ice Age habitation site. A careful analysis has shown that, like the animal images, these female images were made to be used. They are often overmarked with strokes and gashes as if they had been used in ritual.

By the end of the Ice Age the Venus figurines and vulva images essentially disappeared, but the

tradition of making female images on stones in the habitation site continued. In this late period it is not the vulva shape but schematic female outlines, with no head or feet and with exaggerated buttocks, that have accumulated on limestone and slate slabs in the habitation site. Like the earlier vulva carvings, these female images were repeatedly marked and overmarked and sometimes overengraved. Were these accumulations of female images made by women? Were they related to female processes and phases? We do not know. But these studies are beginning to give us new kinds of data and to make such questions possible. Whatever their meaning, we have evidence once again of a ritual use of image and symbol in the Ice Age that could have helped prepare the way for the development of true record keeping.

The prehistoric past may be silent, but the silent images are, ever so tentatively, beginning to speak.

2

THE EARLIEST PRECURSOR OF WRITING

Denise Schmandt-Besserat

Denise Schmandt-Besserat is an archaeologist working at the University of Texas at Austin. Her work on early symbol systems leading to the origin of writing is currently influencing students in a wide range of disciplines.

Individuals applied their minds to symbols rather than things and went beyond the world of concrete experience into the world of conceptual relations created within an enlarged time and space universe. The time world was extended beyond the range of remembered things and the space world beyond the range of known places.

—HAROLD A. INNIS¹

It is the nature of archaeological research to deal with data and their interpretation. . . . I use the facts as well as the hypotheses I have presented on the token system to reflect more broadly on the significance of tokens with respect to communication, social structures, and cognitive skills.

[This reading] deals with the place of tokens among other prehistoric symbolic systems. After presenting relevant aspects of symbolism from the