

6 Language Symbols

In the preceding chapter we discussed the development of technoeconomic organization and the establishment of social machinery closely connected with the evolution of techniques. Here I propose to consider the evolution of a fact that emerged together with *Homo sapiens* in the development of anthropoids: the capacity to express thought in material symbols. Countless studies have been devoted to, respectively, figurative art and writing, but the links between them are often ill defined. It has therefore occurred to me that there might be some profit in attempting to analyze those links within a general perspective. In part III we shall consider the aesthetic aspects of rhythms and values, but here, as we near the end of a long reflection principally concerned with the material essence of humans, it may be useful to consider how the system that provides human society with the means of permanently preserving the fruits of individual and collective thought came slowly into being.

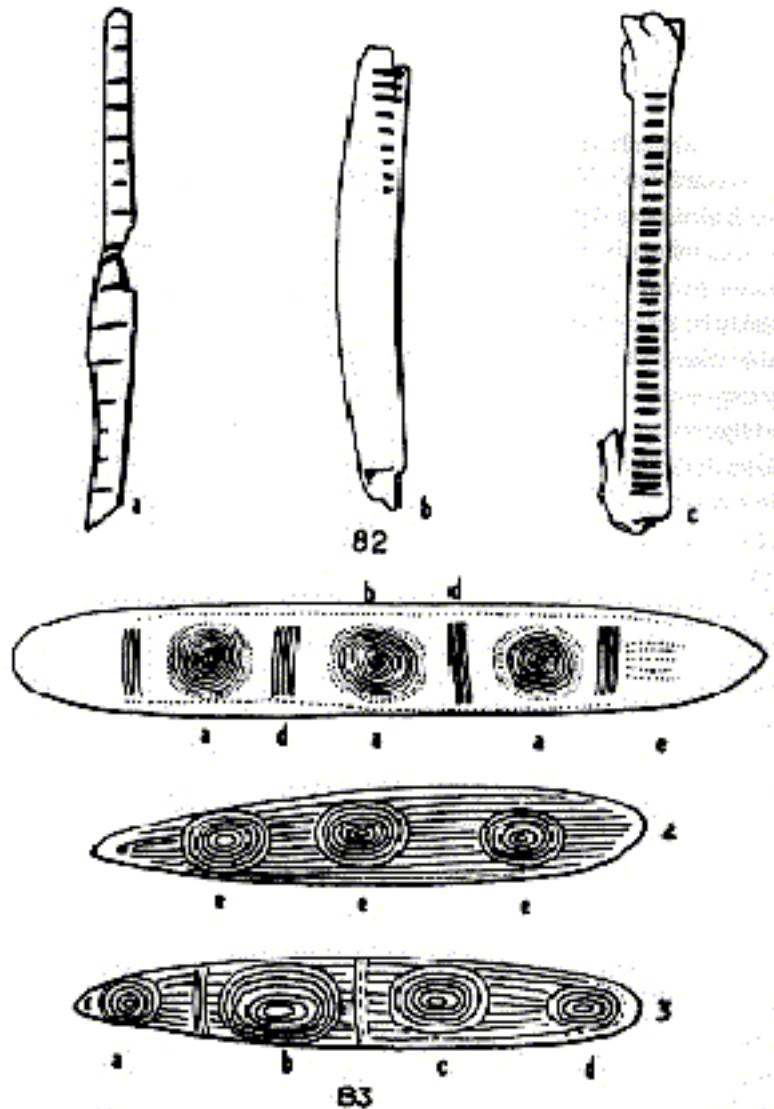
The Birth of Graphism

There is a most important fact to be learned from the very earliest graphic signs. In chapters 2 and 3 we saw that the bipolar technicity of many vertebrates culminated in anthropoids in the forming of two functional pairs (hand/tools, face/ language), making the motor function of the hand and of the face the decisive factor in the process of modeling of thought into instruments of material action, on the one hand, and into sound symbols, on the other. The emergence of graphic signs at the end of the Palaeoanthropians' reign presupposes the establishment of a new relationship between the two operating poles--a relationship exclusively characteristic of humanity in the narrow sense, that is to say, one that meets the requirements of mental symbolization to the same extent as today. In this new relationship the sense

188

of vision holds the dominant place in the pairs "face/reading" and "hand/graphic sign." This relationship is indeed exclusively human: While it can at a pinch be claimed that tools are not unknown to some animal species and that language merely represents the step after the vocal signals of the animal world, nothing comparable to the writing and reading of symbols existed before the dawn of *Homo sapiens*. We can therefore say that while motor function determines expression in the techniques and language of all anthropoids, in the figurative language of the most recent anthropoids reflection determines graphism.

The earliest traces date back to the end of the Mousterian period and become plentiful in the Chatelperronian, toward 35,000 B.C. They appear simultaneously with dyes (ocher and manganese) and with objects of adornment. They take the form of tight curves or series of lines engraved in bone or stone, small equidistant incisions that provide evidence of figurative representation moving away from the concretely figurative and proof of the earliest rhythmic manifestations. No meaning can be attached to the very flimsy pieces of evidence available



82. Paleolithic incisions on bone, known as "hunting tallies." (a) Châteauperronien, (b) Aurignacien, (c) Solutrean.

83. Australian churingas (after B. Spencer and F. J. Gillen). (1) Circles represent trees, and dotted circles represent the dancers' steps; lines d represent rhythmically struck sticks, and e the dancers' movements. (2, 3) Churingas of a chief of the honey-ant totem: (a) the eye, (b) the intestines, (c) the paint on the ant's chest, (d) the back, (e) a small bird, connected with the honey ant. Figure 82 supports the evidence supplied by this figure that representations relating to a verbal and gestural context, like those of the churingas, may be completely lacking in realistic figurative content.

to us (figure 82).

They have been interpreted as "hunt tallies," a form of account keeping, but there is no substantial proof in the past or present to support this hypothesis. The only comparison that might possibly be drawn is with the Australian churingas, stone or wood tablets engraved with abstract designs (spirals, straight lines, and clusters of dots) and representing the body of the mystic ancestor or the places where the myth unfolds (figure 83). Two aspects of the churinga seem relevant to the interpretation of Paleolithic "hunting tallies": first, the abstract nature of the representation, which, as we shall see, is also characteristic of the oldest known art, and, second, the fact that the churinga concretizes an incantatory recitation and serves as its supporting medium, the officiating priest touching the figures with the tips of his fingers as he recites the words. Thus the churinga draws upon two sources of expression, that of verbal (rhythmic) motricity and that of graphism swept along by the same rhythmic process. Of course my argument is not that Upper Paleolithic incisions and Australian churingas are

one and the same thing, but only that among the possible interpretations, that of a rhythmic system of an incantatory or declamatory nature may be envisaged.

If there is one point of which we may be absolutely sure, it is that graphism did not begin with naive representations of reality but with abstraction. The discovery of prehistoric art in the late nineteenth century raised the issue of a "naive" state, an art by which humans supposedly represented what they saw as a result of a kind of aesthetic triggering effect. It was soon realized near the beginning of this century that this view was mistaken and that magical-religious concerns were responsible for the figurative art of the Cenozoic Era, as indeed they are for all art except in a few rare

189

83

82. Paleolithic inscriptions on bone, known as "hunting tallies." (a) Chatelperronian, (b) Aurignacian, (c) Solutrean. 83.. Australian churingas (after B. Spencer and F. J. Gillen). (1) Circles represent trees, and dotted circles represent the dancers' steps; lines d represent rhythmically struck sticks, and e the dancers' movements. (2, 3) Churinga of a chief of the honey-ant totem: (a) the eye, (b) the intestines, (c) the paint on the ant's chest, (d) the back, (e) a small bird, connected with the honey ant. Figure 82 supports the evidence supplied by this figure that representations relating to a verbal and gestural context, like those of the churingas, may be completely lacking in realistic figurative content.

190

periods of advanced cultural maturity. However, it was discovered more recently that the Magdalenian records on which the idea of Paleolithic realism is based were produced at what was already a very late stage of figurative art: They date to between 11,000 and 8000 B.C., whereas the true beginning belongs to before 30,000. A fact of particular relevance in our present context is that graphism certainly did not start by reproducing reality in a slavishly photographic manner. On the contrary, we see it develop over the space of some ten thousand years from signs which, it would appear, initially expressed rhythms rather than forms. The first forms, confined to a few stereotyped figures in which only a few conventional details allow us to hazard to identify an animal, did not appear until around 30,000 B.C. All this suggests that in its origins figurative art was directly linked with language and was much closer to writing (in the broadest sense) than to what we understand by a work of art. It was symbolic transposition, not copying of reality; in other words, the distance that lies between a drawing in which a group agrees to recognize a bison and the bison itself is the same as the distance between a word and a tool. In both signs and words, abstraction reflects a gradual adaptation of the motor system of expression to more and more subtly differentiated promptings of the brain. The earliest known paintings do not represent a hunt, a dying animal, or a touching family scene, they are graphic building blocks without any descriptive binder, the support medium of an irretrievably lost oral context.

Prehistoric art records are very numerous, and statistical processing of a large mass of data whose chronological order is more or less definitely established enables us to unravel, if not to decipher, the general meaning of what is represented. The thousand variations of prehistoric art revolve round what is probably a mythological scene in which images of animals and representations of men and women confront and complement each other. The animals appear to form a couple in which the bison is contrasted with the horse, while the human beings are identified by symbols that are highly abstract figurative representations of sexual characteristics (figure 91 and part II, figure 143). Having arrived at such a definition of the content of prehistoric art, we are in a far better position to understand the connection between abstraction and the earliest graphic symbols.

The Early Development of Graphism

Rhythmic series of lines or dots continued to be produced until the end of the Upper Paleolithic. Parallel with these, the first figures begin to appear in the Aurignacian period about 30,000 B.C. They are, to date, the oldest works of art in the whole

191

of human history, and we are surprised to discover that their content implies a conventionality inconceivable without concepts already highly organized by language. The content then is already very complex, but the execution is skill rudimentary: In the best samples, animal heads and sexual symbols-already highly stylized-are superimposed on one another pell-mell.

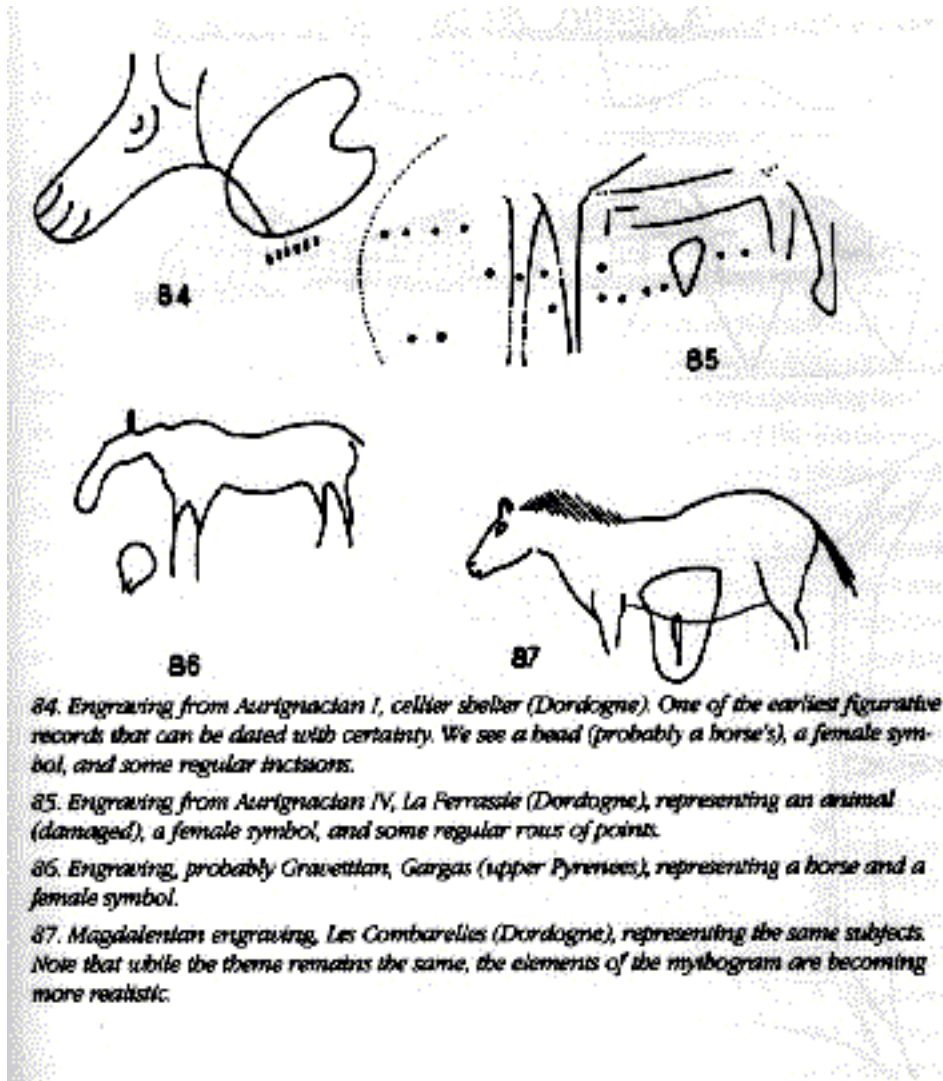
During the next (Gravettian) stage, toward 20,000 B.C., the figures become more deliberately organized. Animals are rendered by the outline of their cervicodorsal curve with the addition of details characteristic of particular species (bison's horns, mammoth's trunk, horse's mane, etc.). The content of the groups of figures remains the same as before, but it is more skillfully expressed. In the Solutrean period, toward 15,000 B.C., engravers or painters are in full possession of their technical resources, which barely differ from those of engravers or painters of today. The meaning of the figures has not changed, and the walls or decorated slabs show countless variations on the theme of two animals and of a man and a woman. However, a curious development has taken place: The representations of human beings seem to have lost all their realist/c character and are now oriented toward the triangles, rectangles, and rows of lines or dots with which the walls of Lascaux, for example, are covered. The animals, on the other hand, are developing little by little toward realism of form and movement, although-for all that may have been said and written about the realism of the animals of Lascaux-in the Solutrean they are still far from achieving such realism. In technical skill and mythological content these figures are indeed products of the "Paleolithic Middle Ages," but it would be an error to compare these groups of works to the frescoes of our medieval basilicas or to easel paintings. They are really "mythograms," closer to ideograms than to pictograms and closer to pictograms than to descriptive art.

So far as human figures are concerned, the Magdalenian between 11,000 and 8000 B.C.-the period of the great series of cave paintings of Altamira and Niaux- sometimes exhibits a still closer connection with the ideogram and at other times a categorical return to realist/c representation. As for the animals, they are swept along on a current in which the artist's skill will eventually (at the time of Altamira) result in a certain academism of form and later, shortly before the end of the period, to a mannered realism that renders movement and form with photographic precision. The art of this later period was the first to become known, thus giving rise to the idea of primitive or "naive" realism.

Paleolithic art, with its enormously long time frame and its abundant records, provides evidence that is irreplaceable for understanding the real nature of artistic figurative representation and of writing: What appear to be two divergent tracks start

192

ing at the birth of the agricultural economy in reality form only one. It is extreme! curious to find that symbolic expression achieves its highest level soon after its earliest beginnings in the Aurignacian (figures 84 to 87).



84. Engraving from *Aurignacian I, cellier shelter (Dordogne)*. One of the earliest figurative records that can be dated with certainty. We see a head (probably a horse's), a female symbol, and some regular incisions.

85. Engraving from *Aurignacian IV, La Ferrassie (Dordogne)*, representing an animal (damaged), a female symbol, and some regular rows of points.

86. Engraving, probably *Crauetlan, Gargas (upper Pyrenees)*, representing a horse and a female symbol.

87. *Magdalenian engraving, Les Combarelles (Dordogne)*, representing the same subjects. Note that while the theme remains the same, the elements of the mythogram are becoming more realistic.

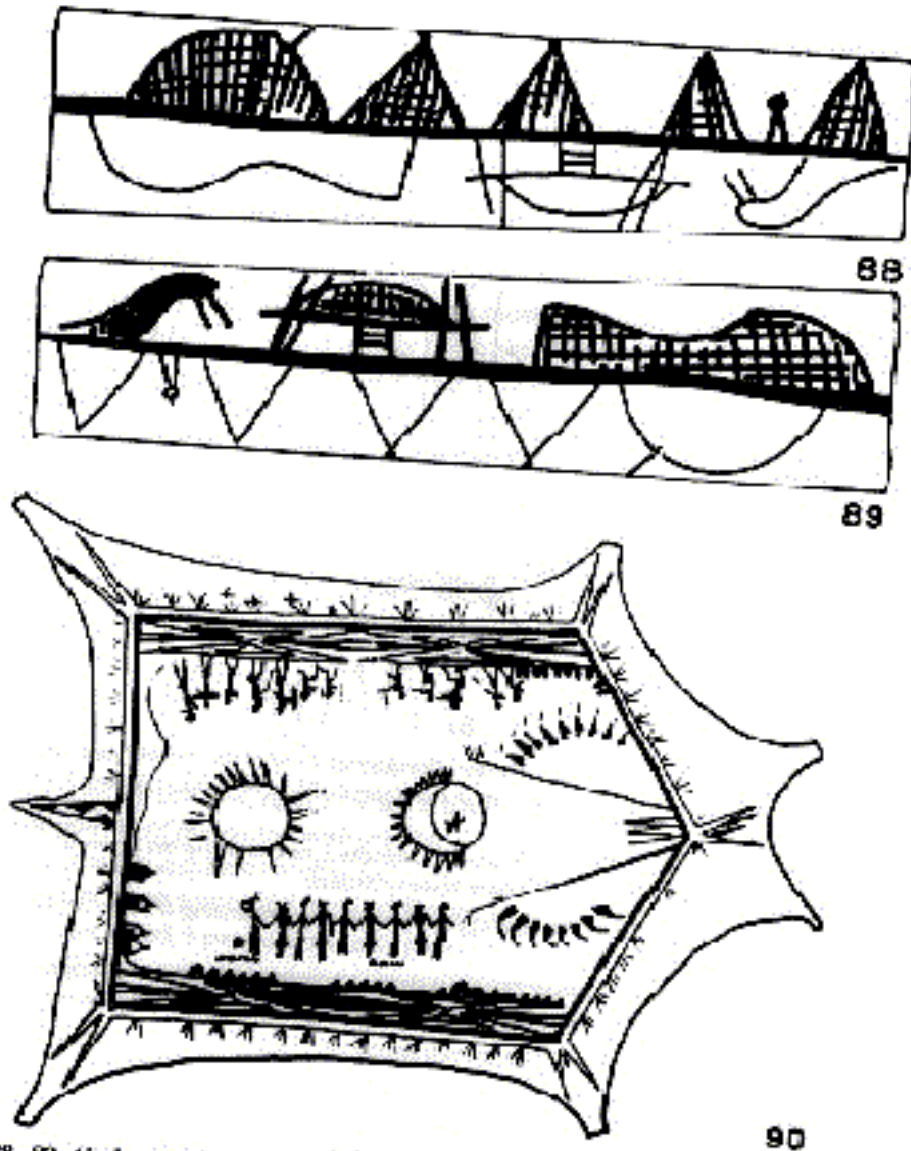
We see art split away from writing, as it were, and follow a trajectory that, starting in abstraction, gradually establishes conventions of form and movement and then, at the end of the curve, achieves realism and eventually collapses. The development of the arts in historic times has so often followed the same course that we are forced to recognize the existence of a general tendency or cycle of maturation-and also to recognize that abstraction is indeed the source of graphic expression. The question of the return of the arts to abstraction on a newly rethought basis will be discussed in chapter 14, where we shall see that the search for pure rhythmicity, for the nonfigurative in modern art and poetry (born as it was of the contemplation of the errors of living primitive peoples), represents a regressive escape into the haven of primitive reactions as much as it does a new departure.

The Spread of Symbols

As we just saw, figurative art is inseparable from language and proceeds from the pairing of phonation with graphic expression. Therefore the object of phonation and graphic expression obviously was the same from the very outset. A part-perhaps the most important part-of figurative art is accounted for by what, for want of a better word, I propose to call "picto-ideography." Four thousand years of linear writing have accustomed us to separating art from writing, so a real effort of abstraction has to be made before, with the help of all the works of ethnography written in the past fifty years, we can recapture the figurative attitude that was and skill is shared by all peoples excluded from phonetization and especially from linear writing

The linguists who studied the origins of writing often applied a mentality born of the practice of writing to the

consideration of pictograms. It is interesting to note that the only true "pictograms" we know are of recent origin and that most of them resulted from contacts between ethnic groups without any writing with travelers or colonizers from countries with writing (figures 88 to 90):



88-89. Alaskan Eskimo pictogram engraved on an ivory blade, early twentieth century. On one of the sides we see a summer encampment (four tents and a man by a billock). Turning the platelet over, we see a winter encampment drawn on the same groundline; a sea line, a sled dragged turned upside down and a cupola-shaped winter house with a longer covered entranceway. The object was a message left in an abandoned camp to show potential visitors which way to go. Pictograms have been used only by Alaskan Eskimos and only in recent times (nineteenth century).
90. Sioux bison skin (late eighteenth century) on which a war expedition is pictographically recounted.

Eskimo or Amerindian pictograms are therefore not suitable terms of comparison for acquiring an understanding of the ideograms of peoples who lived before writing was invented. Furthermore the origins of writing have often been linked to the memorization of numerical values (regular notches, knotted ropes, etc.). While alphabetic linearization may indeed have been related from the start to numbering devices which of necessity were lin-

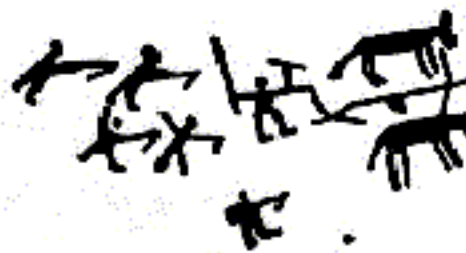
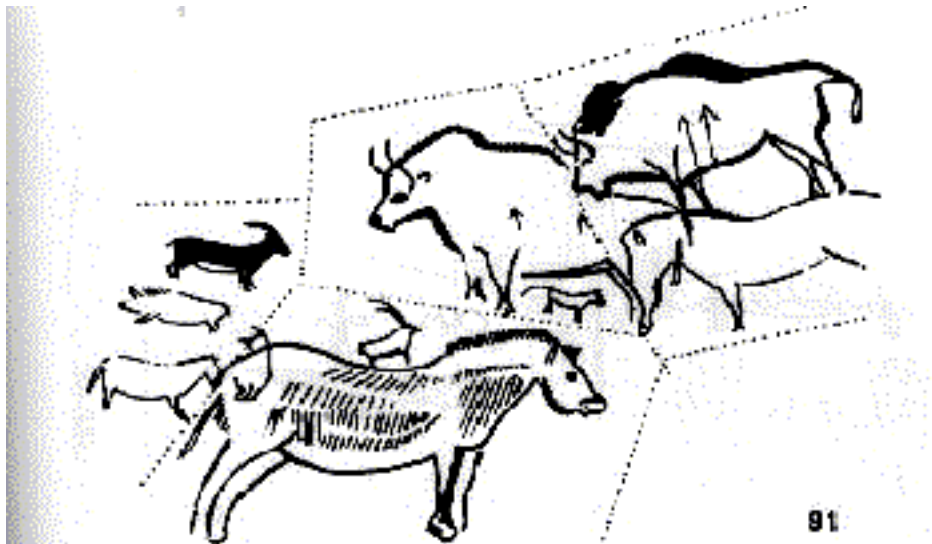
ear, the same is not true of the earliest figurative symbolism. That is why I am inclined to consider pictography as something other than writing in its "infancy."

Through an increasingly precise process of analysis, human thought is capable of abstracting symbols from reality. These symbols constitute the world of language which parallels the real world and provides us with our means of coming to grips with reality. By the time of the Upper Paleolithic, reflective thought—which had found concrete expression, probably from the very start, in the vocal language and mimicry of the anthropoids—was capable of representation, so humans could now express themselves beyond the immediate present. Two languages, both springing from the same source, came into existence at the two poles of the operating field— the language of hearing, which is linked with the development of the sound-coordinating areas, and the language of sight, which in turn is connected with the development of the gesture-coordinating areas, the gestures being translated into graphic symbols. If this is so, it explains why the earliest known graphic signs are stark expressions of rhythmic values. Be that as it may, graphic symbolism enjoys some independence from phonetic language because its content adds further dimensions to what phonetic language can only express in the dimension of time. The invention of writing, through the device of linearity, completely subordinated graphic to phonetic expression, but even today the relationship between language and graphic expression is one of coordination rather than subordination. An image possesses a dimensional freedom which writing must always lack. It can trigger the verbal process that culminates in the recital of a myth, but it is not attached to that process; its context disappears with the narrator. This explains the profuse spread of symbols in systems without linear writing. Many authors of works on primitive Chinese culture, Australian aborigines, North American Indians, or certain peoples of Black Africa speak of their mythological way of thinking in which the world order is integrated in an extraordinarily rich system of symbolic relationships. A number of these authors mention the very rich systems of graphic representation available to the peoples they observed. In each case, except perhaps that of the early Chinese where the records postdate the invention of writing, the groups of figures represented are coordinated in accordance with a system that is completely foreign to linear organization and consequently to any possibility of continuous phonetization. The contents of the figures of Paleolithic art, the art of the African Dogons, and the bark paintings of Australian aborigines are, as it were, at the same remove from linear notation as myth is from historical narration. Indeed in primitive societies mythology and multidimensional graphism usually coincide. If I had the courage to use words

196

in their strict sense, I would be tempted to counterbalance "mytho-logy"—a multidimensional construct based upon the verbal—with "mytho-graphy," its strict counterpart based upon the manual.

The forms of thought that existed during the longest period in the evolution of Homo sapiens seem strange to us today although they continue to underlie a significant part of human behavior. Our life is molded by the practice of a language whose sounds are recorded in an associated system of writing: A mode of expression in which the graphic representation of thought is radial is today practically inconceivable. One of the most striking features of Paleolithic art is the manner in which the figures on the cave walls are organized (figure

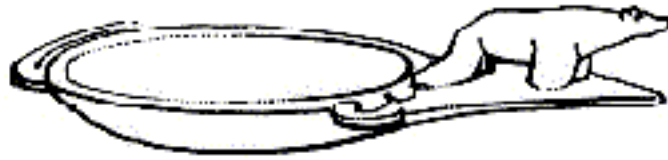


91. Magdalenian mythographic composition, Vache cave (Ariège). We see an ibex, a bison, and a horse of equal size, a large horse accompanied by a small bison and a small ibex, a large bison with a small horse between its legs, and a bison and horse of equal size; the bison bear a series of symbolic wounds. A direct reading is impossible because of the composition's mythographic character.

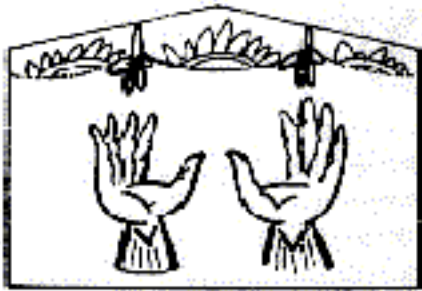
92. Proto-historic rock painting, Val Camonica (Italy), representing a stag accompanied by migratory symbols. As with the preceding figure, it is impossible to interpret the meaning without knowing the oral content.

93. Proto-historic figures painted on rock, Val Camonica (Italy). The composition resembles a pictograph by its narrative character (a ploughman followed by other individuals carrying loads, who are covering up the seeds he has sown), but in contrast to a pictographic series there is no narrative "thread."

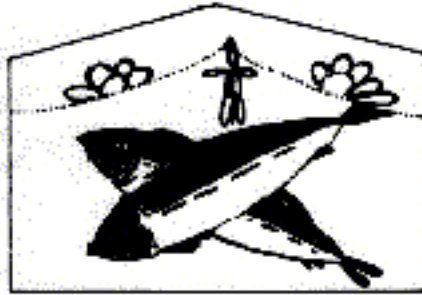
91). The number of animal species represented is small, and their topographic relationships constant: Bison and horse occupy the center of the panel, ibex and deer form a frame round them at the edges, lion and rhinoceros are situated on the periphery. The same theme may be repeated several times in the same cave and recurs in identical form, although with variations, from one cave to another. What we have here therefore is not the haphazard representation of animals hunted, nor "writing," nor "imagery." Behind the symbolic assemblage of figures there must have been an oral context with which the symbolic assemblage was associated and whose values it reproduced in space (figures 92 and 93). The same fact is evident in the spiral figures Australian aborigines draw on sand as symbolic expressions of the unfolding of their myths of the lizard or the honey ant, or in the carved wooden bowls of the Ainu that give material expression to the mythified narration of their sacrifice of the bear



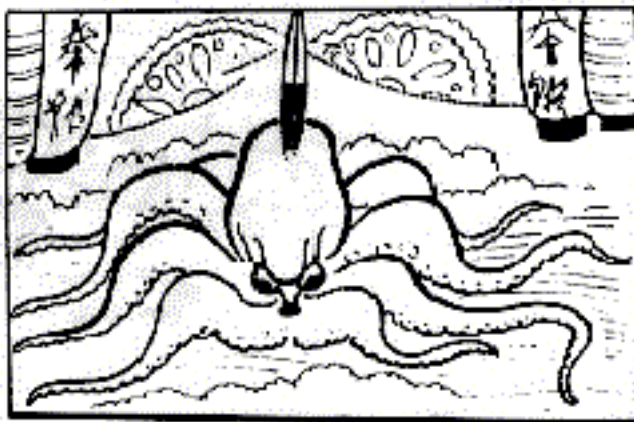
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94. Clay commemorating a bear sacrifice, Saikoban Aizu. Clays were made on the occasion of each bear festival and served as both reminder and record.

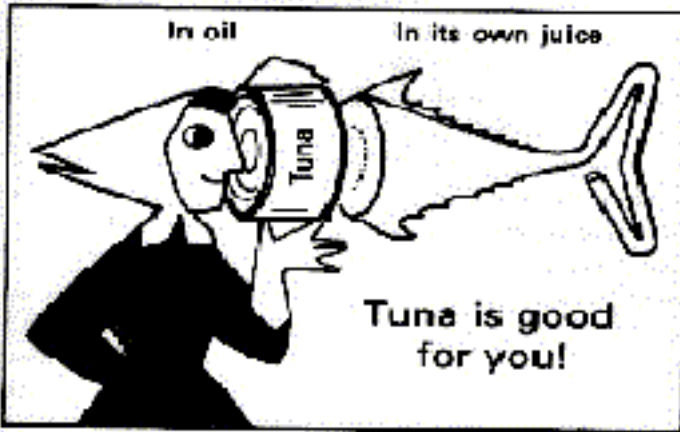
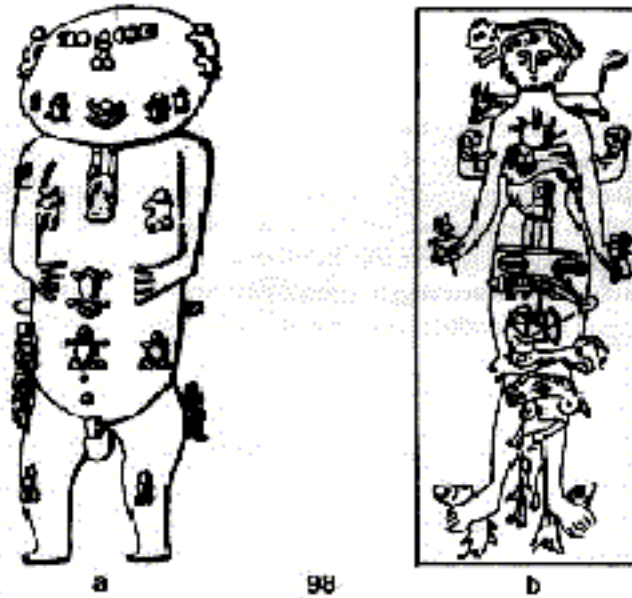
95. Ee-1010, Japan. Hand-clapping gesture meant to attract the deity's attention before making a wish.

96. Ee-1010, Japan. Two tuna (Katsu-o) meant to express the concept of "obtaining" (Katsu).

97. Ee-1010, Japan. Deposited at a temple in the hope of curing a drunkard. The octopus, which turns red when boiled in rice beer, is the symbol of intemperance.

(figure 94).

Such a mode of representation is almost naturally connected with cosmic symbolism, and we shall consider its development in chapter 13 in connection with the humanization of time and space. This mode has resisted the emergence of writing, upon which it exerted considerable influence, in those civilizations where ideography has prevailed over phonetic notation (figures 95 to 97). It is still alive in areas of thought that came into being in the early days of linear written expression, and many religions offer many examples of spatial organization of figures symbolizing a "mythological" context in the strict ethnological sense (figure 98).



99

98. (a) Polynesian, Tahitian. Statuette representing the myth of the creatures of gods and humans by the Great Gods of the Ocean. (b) France, sixteenth century. Signs of the zodiac corresponding to parts of the human body.
99. Advertising poster showing various figurative symbols (a fishwife, a can of food, a can opener) superimposed on the representations of tuna fish.

It still prevails in the sciences, where the linearization of writing is actually an impediment, and provides algebraic equations or formulas in organic chemistry with the means of escaping from the constraint of one-dimensionality through figures in which phonetization is employed only as a commentary and the symbolic assemblage "speaks" for itself. Lastly, it reappears in advertising which appeals to deep, infraverbal, states of mental behavior (figure 99).

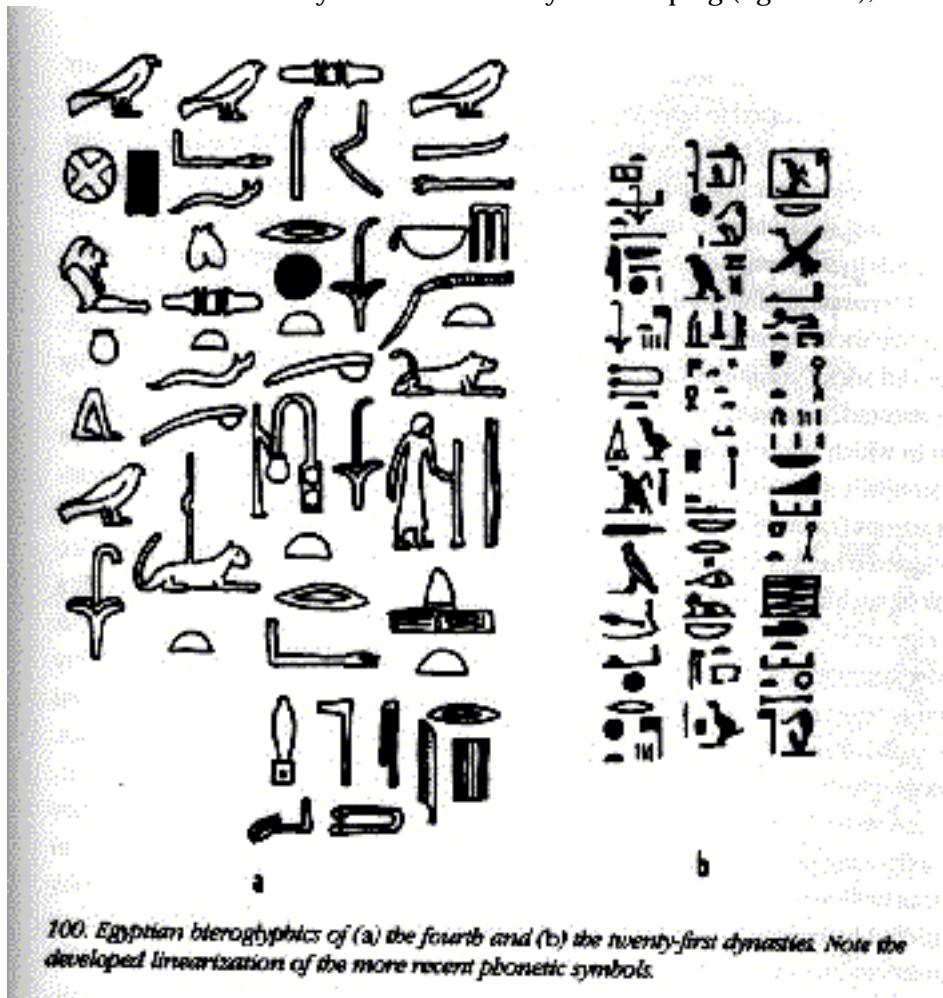
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Thus the reason why art is so closely connected with religion is that graphic expression restores to language the dimension of the inexpressible—the possibility of multiplying the dimensions of a fact in instantly accessible visual symbols. The basic link between art and religion is emotional, yet not in a vague sense. It has to do with mastering a mode of expression that restores humans to their true place in a cosmos whose center they occupy without trying to pierce it by an intellectual process which letters have strung out in a needle-sharp, but also needle-thin, line.

Writing and the Linearization of Symbols

Only agricultural peoples are known for certain to have had a graphic system even remotely identifiable as linear writing. Eskimos and Plains Indians, often cited as examples to the contrary, created pictographies as a result of exposure to alphabets. The chief distinguishing feature of "mythographic" writing is its two-dimensional structure which puts it at a remove from linearly emitted spoken language. In many nonalphabetic forms of writing, on the other hand, the skeleton of the first system of notation is formed by survivals from the old multidimensional system of figurative representation: This is so for Egypt and China, as well as for the Mayas and the Aztecs. One might be tempted to suppose that these "scripts" had a pictographic origin, with signs for concrete objects such as an ox or a walking man being aligned one after the other to reproduce the linear thread of language. Except for some bookkeeping enumerations in proto-historic China or in Near Eastern tablets, there in fact is no known pictographic evidence of the origins of writing. From groups of mythographic figures-simple "rock paintings" or decorations on objects-we go straight to linearized symbols already fully set upon the process of phonetization.

The pictographic hypothesis presupposes a "cold" start, an initial idea of aligning images in such a way as to match the thread of spoken language. It would be acceptable if no other symbolic system had existed previously, but may prove false if we apply the "favorable circumstances" rule and posit that what took place did not do so all at once but represented a transition. Writing did not happen in a void any more than did agriculture. The stages that precede both have to be taken into account. At a certain moment in time, which was not the same moment in different parts of the world, the system of organized representation of mythical symbols appears to have combined with the system of elementary bookkeeping (figure 100),



the result being the primitive Sumerian or Chinese writing in which images borrowed from the regular repertory of figurative representation were drastically sim-

202

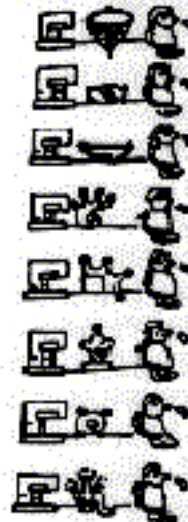
plified and arranged to form a sequence. The procedure did not yet produce any actual texts but helped to keep count of animals or objects. The simplification of the figures, necessitated by the nonmonumental, provisional nature of the records, was responsible for their gradually becoming detached from the initial material context. From being symbols with extensible implications, they developed into signs, genuine tools in the service of memory, on the one hand, and bookkeeping, on the other.

Preparation of written bookkeeping or genealogical accounts is foreign to the primitive social apparatus. Not until the consolidation of urbanized agricultural societies did social complexity begin to be reflected in documents whose authenticity was attested by humans or by gods. Whereas we can conceive of a bookkeeping system in which figures and simplified drawings of animals or measures of grain are sequentially aligned, it is difficult to imagine linearized pictographic signs expressing actions (rather than objects) from which the phonetic element has been entirely excluded. The "mythogram" in fact is already an ideogram, as we must realize if we look at such traces as still survive today: A cross next to a lance and a reed with a sponge on the end of it are enough to convey the idea of the Passion of Christ. The figure has nothing to do with phoneticized oral notation but it has an extensibility such as no writing can have. It contains every possibility of oral exteriorization, from the word "passion" to the most complex commentaries on Christian metaphysics. Ideography in this form precedes pictography, and all Paleolithic art is ideographic.

A system in which three lines are followed by a drawing of an ox or seven lines by a drawing of a bag of corn is also readily conceivable. In this case phonetization is spontaneous, and reading becomes practically inevitable. This form of pictography is probably the only one that existed at the time of the birth of writing, and writing was bound to merge immediately with this preexisting ideographic system. The spontaneous confluence of the two would explain why the earliest forms of Mediterranean, Far Eastern, and American writing begin with numerical or calendar notations and, at the same time, with notations of the names of gods or of distinguished individuals in the form of figures assembled in small groups after the fashion of successive mythograms. We think of Egyptian, Chinese, and Aztec writing as lines of phoneticized mythograms rather than as aligned pictograms (figures 100 to 102).



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101. Mayan manuscript. Fragment of a figurative representation of ceremonies to mark the beginning and end of a year. Lines of numerical signs and mayibugraphic figures are integrated in the same composition.

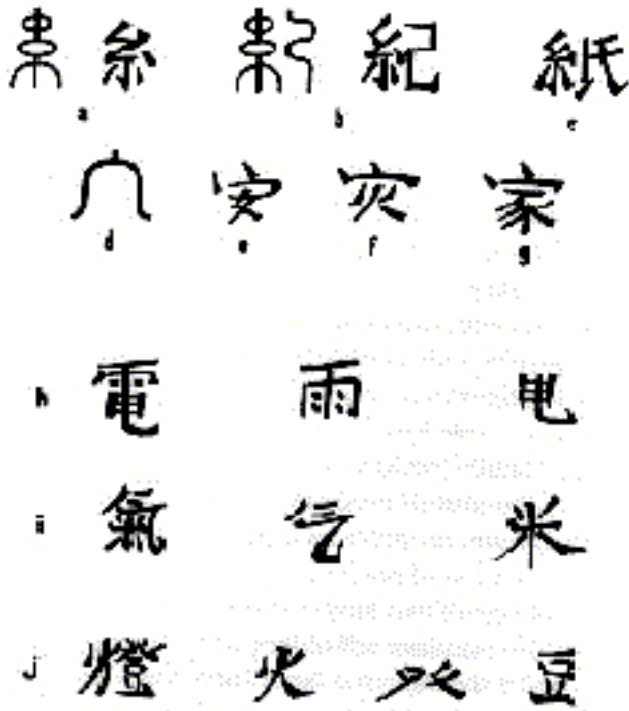
102. Figurative manuscript representation of the beginning of the Aztec migration. From left to right: (1) Seated on an Aztlan island his personification and, in hieroglyphics, the six tribes. (2) The Aztecs cross the water. (3) The date (inside a rectangle). (4) A march, represented by a footprint, leads to the city of Cōhuācān, represented by its hieroglyphic. (5) Eight other tribes, representing by the hieroglyphic for a man talking. This inscription is a succession of partially phoneticized mythograms connected to one another by a pictographic thread.

Most recent authors

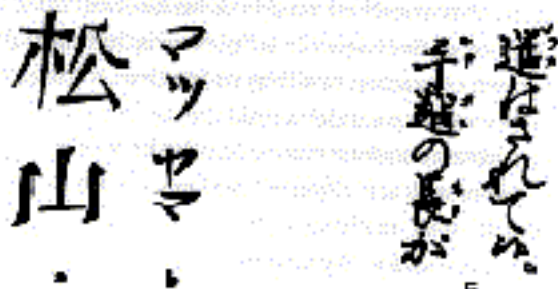
have been well aware of the difficulty of fitting the pictographic stage into the development of phoneticized writing, but they do not seem to have perceived the connection between very early mythographic notation systems, which implies an ideography without an oral dimension and a form of writing whose phonetization apparently began with numbers and quantities.

For all the variety of known phonetic scripts, the number of scripts that developed into fully elaborated phonetic systems is very limited. Those of America disappeared before they had a chance to develop beyond the earliest stages. The writing of the Indus has no known descendants. Once the Near Eastern group of scripts had been created, there was no further reason, save very exceptionally, for any fresh departures, and the languages of Eurasia moved directly to syllabic or consonantal scripts or to alphabets. Only Egypt and China remained as the two poles of the ancient civilizations to develop phoneticized ideographic systems. Since the seventh century B.C. Egyptian writing has lost much of its archaicism, and China alone has maintained until the present day a system of graphic symbols that has more than one dimension.

The Chinese system combines the two contrasting aspects of graphic notation (figure 103).



103



104

103. Chinese writing. (a) Archaic and modern graphic signs for a skein of fiber (pictograms). (b) A skein and the sign (archaic and modern) for a shuttle. When assembled they signify "order" or "successors" (ideogram). (c) The skein and the sign: chalk. The pictographic element has a classificatory function (the concept of "fibers"), the other element being the purely phonetic chih ("paper"). (d) Archaic graphic sign for "roof." (e) Roof + woman = peace. (f) Roof + fire = disaster (a) Roof + fire = disaster

It is a script in the sense that each character contains the elements of its phoneticism and occupies a position in a linear relationship with other characters so that sentences can be read easily. The phonetic reference of the word, however, is an approximation. In other words, an ideogram now used only to represent a sound-a stage that alphabetic languages too went through at one time. Chinese as a phonetic tool corresponds approximately, though with greater subtlety, to a graphic pun or rebus whereby the word "rampage," say, might be rendered by the signs for "ram" and "page." Imperfect as it is, this tool has, because of the multiplicity of its signs, proved a satisfactory means of language notation. We should note, however, that oral tradition is there to ensure phonetic continuity: Without it, Chinese characters would become hopelessly unpronounceable, even if recordings of the spoken language were available. Be that as it may, Chinese writing in its phonetic role complies with the rule that governs all writing by recording sounds in an order that reconstitutes the flow of spoken language.

From the linguistic point of view, Chinese is regarded as word writing, each sign representing the sound of a word rather than a letter. This is an ambiguous situation because the Chinese word has changed over the centuries from being polysyllabic to being monosyllabic, with the following results: (1) Chinese literary writing is practically a series of syllable-words, difficult to understand without visually or mentally reading the signs that correspond to them, and (2) in the joining together of monosyllables, the spoken language has reconstituted a large number of disyllabic or trisyllabic words so that the written notation of the spoken language is, in the final analysis, a syllabic script. In both of these aspects Chinese clearly dem-

205

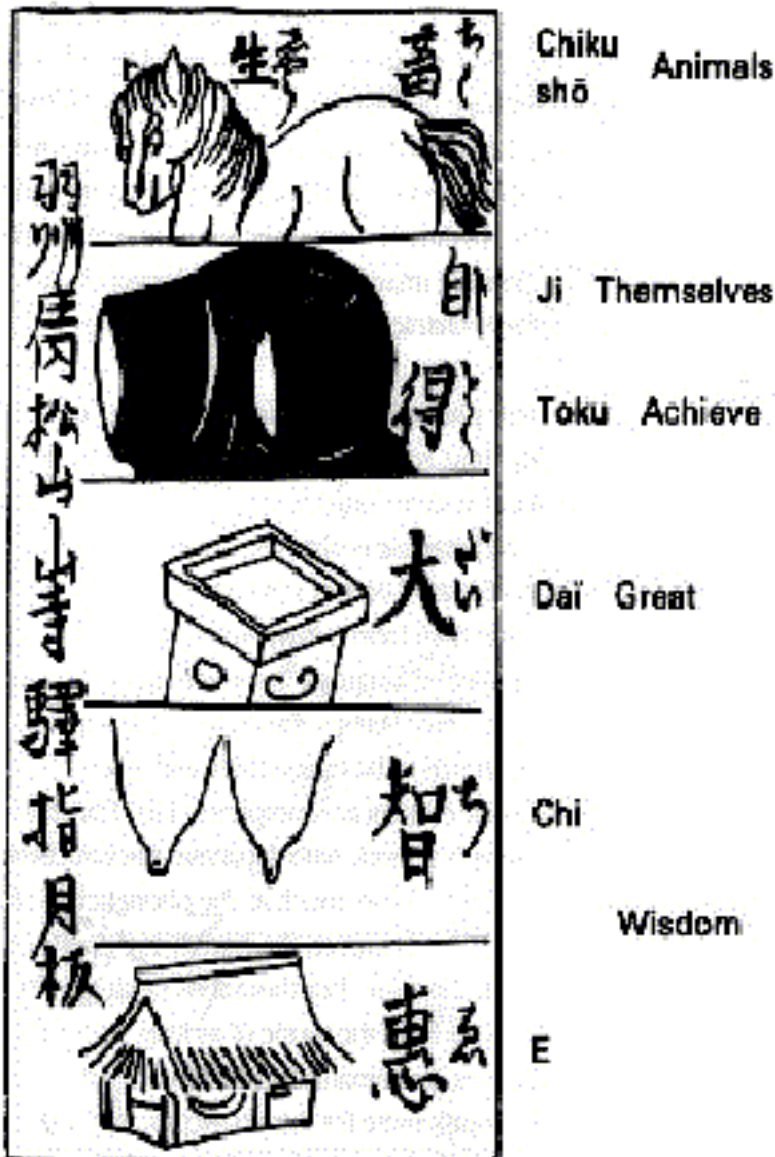
onstrates that writing was born of the complementary interaction of two systems: "mythograms" and phonetic linearization. The somewhat strained and often laborious, but ultimately successful, adaptation of Chinese writing to phoneticism has resulted in preserving a particular form of mythographic notation rather than simply the remote memory of a "pictographic" stage.

The earliest Chinese inscription (twelfth and eleventh centuries B.C.), like the first Egyptian inscriptions and Aztec glyphs, have come to us in the form of figures assembled in groups that provide the object or action they describe with a "halo" much wider than the narrow meaning words have assumed in linear writing. To write the words an ("peace") or chia ("family") in letters is to state the two concepts reduced to their skeleton: To convey the idea of peace by representing a woman under a roof opens up perspectives that are, properly speaking, "mythographic" in that the sign is neither a transcription of a sound nor a pictographic representation of an action or a quality but an assemblage of two images whose interplay reflects the full depth of their ethnic context. This becomes still more patently evident when we see that an assemblage composed of the signs for "roof" and "pig" stands for "family," a foreshortened image with the whole technoeconomic structure of ancient China for its background.

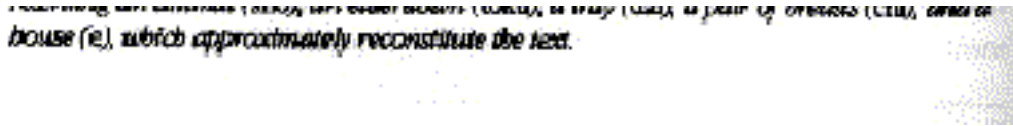
One might see little difference between such writing and pictography in the sense of a succession of drawings showing actions or objects wholly outside a phonetic context. Chinese writing may seem to come close to this definition because of its basic principle, which is that one-half of each character is "pictographic" and the other phonetic. But to see in the Chinese character nothing more than a category indicator (the radical) stuck on to a phonetic particle would be an unwarranted restriction of its meaning. We need only take a modern example like the word "flashlight" to realize how flexible the images still are (figures 103 and 104). To the speaker, tien-ch'i-teng means "flashlight" and nothing else. But to the attentive reader, the juxtaposition of the three characters for "lightning", "steam," and "lamp" opens a whole world of symbols that form a halo round the banal image of the flashlight: lightning issuing forth from a rain cloud, for the first; steam rising over a pan of rice, for the second; and fire and a receptacle, or fire and the action of rising, for the third. Parasitic images, no doubt, and likely to cause the reader's thoughts to stray in a manner irrelevant to the real object of notation, worthless images, indeed, in the context of a modern object-yet even an example as commonplace as this gives us an inkling of a mode of thought based on diffuse multidimensional configurations rather than on a system that has gradually imprisoned language within linear phoneticism.

It is interesting to note that in a sense the combination of idiographic with phonetic notation in ideograms emptied of their meaning has deepened the role of mythographic notation in the Chinese language by deviating it from its course. It has created a highly symbolized relationship between the sound that is noted (auditive poetic matter) and its notation (a swarm of images), thus offering Chinese poetry and calligraphy their superb possibilities. The rhythm of the words is counterbalanced by that of the subtly interrelated lines, creating images in which each part of each character, as well as the relationship of every character to every other, sparkles with allusive meaning.

The two aspect-ideographic and phonetic-of Chinese writing are so mutually complementary and, at the same time, so foreign to one another that each has engendered separate different notation systems outside China. The manner in which Chinese writing was borrowed by the Japanese is difficult to describe in terms comprehensible to a European mentality (figures 104 and 105).



105. Fragments of a popular Buddhist text including: (a) Japanese phonetic notation: chiku-shō ("animals"), ji ("themselves"), toku ("achieve"), dai ("great"), chi-c ("wisdom"). (b) The seven Chinese characters corresponding to the phoneticized text. (c) Drawings representing the original (chū) and ideographic (shō) characters: a horse (chū), a box (shō), a house (chū), and a V-shaped object (shō).



The two languages are much further removed from one another than Latin is from Arabic, and the manner in which Chinese writing fits Japanese spoken language is something like trying to write French by selecting from among postage stamps the picture that approximately corresponds to the meaning of the words to be transcribed, and assembling them in rows: Both grammar and the phonetic content are completely lost. The characters were borrowed at a strictly ideographic level, with Japanese phoneticism expressed by signs emptied of their sound in Chinese, much as the phoneticism of the figure 3 is different in every language. Here, however, the borrowing does not involve a mere ten signs, as in our numerical system, but thousands of signs, ultimately expelling the sound matter of language from the scope of writing. As for the ideological matter, it is confined to concepts, grammatical inflexions being completely left aside and unaccounted for. To compensate for this shortcoming, the Japanese language borrowed from the Chinese, in the eighth century A.D., forty eight characters that are used exclusively for their phonetic value, and from these it has created a syllabic notation register that has inserted itself between the ideograms. In consequence, the Chinese system of writing composed of multidimensional elements, each group forming a character contains the means whereby it can be ren

(caption from 103 continued)

ily. (h, i, j) tiench'i ten": electric bulb. Tien: thunder = rain, lightning, ch'i steam = cloud, rice; ten". lamp = fire + mount + pedestal.

104 Japanese writing (a) Two Chinese characters: sung-shen, "mountain of pines. " (b Japanese reading: matsu-yama, expressed in syllabic characters. (c) Fragment of a dramatic text including Chinese characters held together by a syntactic "binder" in cursive syllabic characters and annotated by phonetic elements.

209

dered phonetically, Japanese first stripped the characters of their phonetic coloring and then attached a distinctive phonetic sign to each one.

The Chinese system, like the Japanese, is said to be "impractical" and ill-suited for the purpose of translating spoken language into graphic terms. This is true only to the extent that writing is viewed as an economical method of transcribing narrow but precise concepts-an object achieved most efficiently by linear alignment. The language of science and technology meets such a definition, and alphabets meet its requirements. It seems to me that other procedures for expressing thought should not be overlooked, and in particular those that reflect the flexibility of images, the halo of associations, and all the complementary or conflicting representations that gravitate round the central point of a concept. Chinese writing represents a state of balance unique in human history: Whatever one may say, it renders mathematical or biological concepts faithfully enough, while still preserving the possibility of using the oldest system of graphic expression-the juxtaposing of symbols to create, not sentences, but meaningful groups of images.

Linear Graphism

There is no need here to go into the details of the history of linear writing. The Sumero-Accadian scripts, which before 3000 B.C. already contained a very large number of ideograms in process of development toward phonetic transcription, were followed by consonantal scripts, of which the Phoenician (around 1200 B.C.) is the earliest example, and later by the Greek alphabet of the eighth century B.C. This continuous development included every possible stage-from realistic representation of an object to render the word for that object, through the same representation to render the equivalent sound in other words according to the principle of the picture puzzle, through the process of simplification whereby the object is made unidentifiable and becomes a purely phonetic symbol, to assembling discrete symbols in order to transcribe sounds through the association of letters. The development has been described many times; it is regarded as the glory of the great civilizations, and

rightly so for it was this development that put them in possession of the means for their ascent.

There indeed is a direct link between the technoeconomic development of the Mediterranean and European group of civilizations and the graphic tool they perfected. We saw earlier that the role of the hand in toolmaking counterbalanced the role of the facial organs in creating verbal language; we also saw that at a certain moment just before the emergence of homo sapiens, the hand began to play a part

210

in creating a graphic mode of expression that counterbalanced verbal language. The hand thus became a creator of images, of symbols not directly dependent on the progression of verbal language but really parallel with it. The language that, for lack of a better term, I have called "mythographic" because the mental associations it arouses are of an order parallel to that of verbal myths, both lying outside the scope of strict coordinates in space and time, belongs to this period. Writing in its earliest phase preserved a great deal of this multidimensional vision; it continued to suggest mental images that, though not imprecise, were "haloed" and could point in several divergent directions. Although our anatomical evolution had been overtaken by the evolution of technical means, the global evolution of humankind remained perfectly consistent with itself. The brain of the man of Cro-Magnon may have been as good as ours-at any rate, there is nothing to prove the contrary-but his means of expressing himself were far from equal to his neuronal apparatus. The greatest development has been in the means of expression. In primates the actions of the hands are in balance with those of the face, and a monkey makes wonderful use of this balance. It even goes so far as to make its cheeks serve to carry food, which its hands, still required for walking, cannot do. In early anthropoids a kind of divorce takes place between the hand and the face. Thereafter the one contributes to the search for a new balance through gesticulation and tools, the other through phonation. With the emergence of graphic figurative representation, the parallelism is reestablished. The hand has its language, with a sight-related form of expression, and the face has its own, which relates to hearing. Between the two is the halo that confers a special character upon human thought before the invention of writing proper: The gesture interprets the word, and the word comments upon graphic expression.

At the linear graphism stage that characterizes writing, the relationship between the two fields undergoes yet another development: Written language, phoneticized and linear in space, becomes completely subordinated to spoken language, which is phonetic and linear in time. The dualism between graphic and verbal disappears, and the whole of human linguistic apparatus becomes a single instrument for expressing and preserving thought-which itself is channeled increasingly toward reasoning.

The Constriction of Thought

The transition from mythological to rational thinking was a very gradual shift exactly synchronous with the development of urban concentrations and of metallurgy. The earliest beginnings of Mesopotamian writing date back to about 3500 B.C.,

211

some 2,500 years after the appearance of the first villages. Two thousand years later, toward 1500 B.C., the first consonantal alphabet appeared in Phoenicia, toward 750 B.C. alphabets were being used in Greece, and by 350 B.C. Greek philosophy was advancing by leaps-and bounds.

Available evidence of the organization of primitive thought is difficult to interpret, either because it comes to us from very fragmentary prehistoric evidence or because our records about the thinking of Australian aborigines or Bushmen have been filtered by ethnographers who did not always take the trouble to analyze them. What we do know suggests a process wherein contradictions between different values are ordered within a participatory logic that at one time gave rise to the concept of "pre-logical" reasoning. Primitive thought appears to take place within a temporal and spatial setting which is continually open to revision (see chapter 13). The fact that verbal language is coordinated freely with graphic figurative representation is undoubtedly

one of the reasons for this kind of thinking, whose organization in space and time is different from ours and implies the thinking individual's continuing unity with the environment upon which his or her thought is exercised. Discontinuity begins to appear with agricultural sedentarization and with early writing. The basis now is the creation of a cosmic image pivoted upon the city. The thinking of agricultural peoples is organized in both time and space from an initial point of reference-omphalos- round which the heavens gravitate and from which distances are ordered. The thinking of pre-alphabetic antiquity was radial, like the body of the sea urchin or the starfish. It only just began to master rectilinear progression in archaic forms of writing, whose means of expression were still very diffuse except for the purposes of account keeping. The process of the world's subsequent imprisonment in the toils of "exact" symbols had barely begun, and the summit of perfection in the handling of mythological thought was reached in the Mediterranean or in the China of the first millennium before our era. It was a time when the vault of heaven and the earth were joined together within a network of unlimited connections, a golden age of prescientific knowledge to which our memory still seems to hark back nostalgically today.

The process set in motion by settled agriculture contributed, as we have seen, to putting the individual more and more firmly in control over the material world. This gradual triumph of tools is inseparable from that of language- indeed the two phenomena are but one, just as technics and society form but one subject. As soon as writing became exclusively a means of phonetic recording of speech, language was placed on the same level as technics; and the technical efficacy of language today

212

is proportional to the extent to which it has rid itself of the halo of associated images characteristic of archaic forms of writing.

Writing thus tends toward the constriction of images, toward a stricter linearization of symbols. For classical as well as modern thinking, the alphabet is more than just a means of committing to memory the progressive acquisitions of the human mind; it is a tool whereby a mental symbol can be noted in both word and gesture by a single process. Such unification of the process of expression entails the subordination of graphism to spoken language. It avoids the wastefulness of symbols that is still characteristic of Chinese writing, and it parallels the process adopted by technics over the course of its development.

However, it also entails an impoverishment of the means of nonrational expression. If we take the view that the course humankind has followed thus far is wholly favorable to our future-if, in other words, we have complete confidence in settled agriculture and all its consequences-then we should not view the loss of multidimensional symbolic thought otherwise than we do the improvement achieved in the running ability of Equidae consequent upon the reduction of the number of their digits to one. But if, conversely, we tend to believe that human potentiality would be more fully realized if we achieved a balanced contact with the whole of reality, then we may ask ourselves whether the adoption of a regimented form of writing that opened the way to the unrestrained development of technical utilitarianism was not a step well short of the optimum.

Beyond Writing: The Audiovisual

With alphabetic writing, a certain level of personal symbolism is still preserved. The reconstruction that the eye performs in reading the written word is still an individual one. There is a margin which, though limited, is indisputably present, and it ensures a personal interpretation of phonetic matter. Moreover the images evoked by reading remain the property of the reader's imagination, which may or may not be very rich. When it replaced ideographic symbols by letters-when, as it were, it changed levels-the alphabet did not abolish all possibilities of recreation. To put it differently, alphabetic writing, while meeting the needs of social memory, still allows the individual to reap the benefits of the interpretative effort he or she has to make.

We could ask ourselves whether, despite the current vast increase in the output of printed matter, the fate of writing is not already sealed. The emergence of sound recording, films, and television in the past half-century forms part of a trajectory that

213

began before the Aurignacian. From the bulls and horses of Lascaux to the Mesopotamian markings and the Greek alphabet, representative signs went from mythogram to ideogram and from ideogram to letter. Material civilization rests upon symbols in which the gap between the sequence of emitted concepts and their reproduction has become ever more narrow. This gap or interval is narrowed still further by the recording of thought and its mechanical reproduction. We might wonder what the consequences of this narrowing will be. Curiously enough, the mechanical recording of images has, in less than a century, covered the same ground as the recording of the spoken word did over several thousands of years. First, two-dimensional visual images became automatically reproducible through photography. Then, as with writing, came the turn of the spoken word, reproduced by means of the phonograph. Up to that point the mechanism of mental assimilation had remained undistorted: Photography, being purely static and visual, left as much room for freedom of interpretation as the bison of Altamira had left to the humans of the Paleolithic. The auditive sequence imposed by the phonograph likewise allowed room for personal and free mental vision.

This traditional state of affairs was not appreciably altered by the arrival of silent films. The silent reel was supported by sound ideograms of an indeterminate nature supplied by a musical accompaniment that maintained a distance between the individual and the image imposed from the outside. A radical change occurred, however, with the coming of sound film and television, both of which address the faculties of sight, motion, and hearing at the same time and so induce the whole field of perception to participate passively. The margin for individual interpretation is drastically reduced because the symbol and its contents are almost completely merged into one and because the spectator has absolutely no possibility of intervening actively in the "real" situation thus recreated. The spectator's experience is different from a Neanderthalian's in that it is purely passive, and different from a reader's in that it is totally lived through both sight and hearing. From this dual point of view, audiovisual techniques really seem to represent a new stage of human development—a stage that has direct bearing on our most distinctive possession, that of reflective thought.

From the social point of view, the audiovisual indisputably represents a valuable gain inasmuch as it facilitates the transmission of precise information and acts upon the mass of people receiving it in ways that immobilize all their means of interpretation. In this respect language follows the general evolution of the collective superorganism and reflects the increasingly perfect conditioning of its individual cells. Can a genuine return by the individual to earlier stages of figurative representation still be envisaged? Writing is unquestionably a most efficient adaptation of

214

audiovisual behavior, which is our fundamental mode of perception, yet it is also a very roundabout way of achieving the desired effect. The situation now apparently becoming generalized may therefore be said to represent an improvement in that it eliminates the effort of "imagining" (in the etymological sense). But imagination is the fundamental property of intelligence, and a society with a weakened property of symbol making would suffer a concomitant loss of the property of action. In the modern world the result is a certain imbalance, or rather a tendency toward the same phenomenon as that taking place in the arts and crafts: the phenomenon of loss of the exercise of the imagination in vital operating sequences.

Audiovisual language tends to concentrate image making entirely in the minds of a minority of specialists who purvey a completely figurative substance to the individual. Image makers—painters, poets, or technical narrators—have always, as far back as in the Paleolithic, been a social exception, but their work always remained incomplete because it called for the participation of the image users, whatever their cultural levels. Today a separation (extremely profitable to the collective) is in process of being wrought between a small elite acting as society's digestive organ and the masses acting purely as its organs of assimilation. This development is not confined to the audiovisual media, which are merely the end point of a general process that involves the whole of human graphic activity. Photography did not at first cause any change in the intellectual perception of images; like all innovations, it was supported by what already existed. Just as the first motor cars were horseless carriages, so the first photographs were portraits and scene paintings without color. The process of "predigestion" did not begin until the emergence of cinematography, which completely changed the concept of photography and drawing in the purely pictographic sense. The sports photograph and the comic strip, together with the "digest," have also contributed to separating the image maker from the image consumer within the

social organism.

The impoverishment is not in the themes but in the loss of personal imaginative versions. The number of themes in popular (as indeed in highbrow) literature has always been limited, so there is nothing extraordinary about seeing the same very handsome and exceptionally strong superman, the same amazingly attractive woman, and the same more or less stupid giant appear successively in the midst of Sioux Indians and bisons, in a pitched battle during the Hundred Years' War, on board a pirate ship, in a police car roaring off in pursuit of gangsters, or in a space rocket traveling between two planets. Endless repetition of an unchanging stock of images goes hand in hand with the tiny amount of free space that the exercise of emotions related in one way or another to aggressivity or sexuality leaves in the indi-

215

vidual consciousness. That the comic strip's ability to render action in a convincing manner is far greater than the old "penny dreadful's is not in doubt: In the latter a punch in the face was an incomplete symbol, whereas Superman's left hook to the traitor's jaw leaves nothing to be added by way of traumatic precision. Everything assumes a totally naked reality, to be absorbed without the least effort, the recipient's brain perfectly slack.

In this first part of the book language has been considered on the same footing as technics, from an entirely practical point of view and as a product of the biological entity called the "human being." The initial balance between the two poles of the field of responsiveness connects our evolution with that of all animals in which the performance of operations is divided between the face and the forelimb. But by implication it also connects the existence of language with that of manual techniques. What we know about the evolution of the brain allows us-so far as new techniques are concerned-to analyze the connection between erect posture, the freeing of the hand, and the opening up of areas of the brain that were the preconditions for the exercise of physical abilities, on the one hand, and the development of human activity on the other. The proximity, inside the brain, between the two manifestations of human intelligence is so striking that despite the lack of fossil evidence, we must accept that human language was from the very outset different in nature from the language of animals-that it was the product of reflection between the two mirrors of technical gesture and phonic symbolism. This hypothesis concerning humans who existed before *Homo sapiens*-humans going as far back as the remotest Australanthropians-becomes a certainty when we discover the close synchronism between the evolution of techniques and that of language. The certainty is confirmed when we see how closely, even for the very purpose of expressing thought, hand and voice remain intimately linked.

Parallel with the extraordinary acceleration of the development of material techniques following the emergence of *Homo sapiens*, the abstract thought we find reflected in paleolithic art implies that language too had reached a similar level. Graphic or plastic figurative representation should therefore be seen as the means of expression of symbolic thinking of the myth-making type, its medium being graphic representation related to verbal language but independent from phonetic notation. Although no fossil records of late Paleolithic languages have come down to us, evidence fashioned by the hands of humans who spoke those languages clearly suggests that their symbolizing activities-inconceivable without language-were on a level with their technical activities, which in turn are unimaginable without a verbalized intellectual supporting structure.

216

The parallelism continued at every stage: When agricultural sedentarization gave rise to a hierarchical and specialized social system, a fresh impetus was imparted simultaneously to technics and language. If the topographical structure of the cerebral cortex of primitive anthropoids accommodated the joint development of the material and the verbal, the topographical structure of the urban superorganism reflected the same contiguousness. When the economic system became transformed into capitalism based on metallurgy and grain, the transformation engendered both science and writing. When techniques within the city walls began to prepare the ground for the world of today, when space and time became organized within a geometrical network that captured both the earth and the heavens, then rationalizing thought began to overtake mythical thought. Symbols were linearized and gradually adapted to the flow of verbal language until graphic phonetization finally culminated in the alphabet. From the beginning of written history, as in still earlier times, there has been a complete reciprocal linkage between technics and language, and the whole of human development