§ 3  Who? What?  
The Invention of the Human

The Différence of the Human

The invention of the human: without our needing to become complacent with the double genitive, its ambiguity signals a question that breaks down into two: “Who” or “what” does the inventing? “Who” or “what” is invented? The ambiguity of the subject, and in the same move the ambiguity of the object of the verb “invent,” translates nothing else but the very sense of the verb.

The relation binding the “who” and the “what” is invention. Apparently, the “who” and the “what” are named respectively: the human, and the technical. Nevertheless, the ambiguity of the genitive imposes at least the following question: what if the “who” were the technical? and the “what” the human? Or yet again must one not proceed down a path beyond or below every difference between a who and a what?

To enter these questions, we shall focus on the passage into the human leading from the Zinjanthropian to the Neanthropian. This ground breaking [frayage], which is that of corticalization, is also effected in stone, in the course of the slow evolution of techniques of stonecutting. An evolution so slow—it still occurs at the rhythm of “genetic drift”—that one can hardly imagine the human as its operator, that is, as its inventor; rather, one much more readily imagines the human as what is invented.

The emergence of this being—producer, constructor, if not conceiver—begins then in a process of neurological evolution. However, on the one hand, it is no longer strictly a matter of a zoological phenome-
non: the most archaic technical evolution is already no longer "genetically programmed"; on the other hand, beyond the Neanthropian, this process continues as pure technological evolution, the organization of the cortex being genetically stabilized. How are we to understand this second rupture? What is at stake between these first two coups of the "origin"?

What epigenetic question does that open up?

One must first ask what mirage of the cortex is experienced [s'éprouve], as pathbreaking, in the hardness of flint; what plasticity of gray matter corresponds to the flake of mineral matter; what proto-stage of the mirror is thus installed. One must then ask what the closure of the cortical evolution of the human implies from the vantage of a general history of life, the closure of the cortical evolution of the human, and therefore the pursuit of the evolution of the living by other means than life—which is what the history of technics consists in, from the first flaked pebbles to today, a history that is also the history of humanity—a statement that will lead us to the unusual concept of "epiphylogenesis."

This investigation will question the possibilities we have of thinking the temporality that arrives in the passage from the Zinjanthropian to the Neanthropian. We shall seek to show thereby that our most profound question is that of the technological rooting of all relation to time—a rooting that quite singularly plays itself out again against the horizon of our most contemporary technology: speed. Leroi-Gourhan broaches this question with the problem of anticipation implied in all acts of fabrication from the first knapped flint tool.

We are considering a passage: the passage to what is called the human. Its "birth," if there is one. Why should we question the "birth" of the human? First of all because we have unceasingly, since Hegel, questioned its end (Derrida 1982, 120–21). Even the recent attempts to restore a pre-Hegelian thought of the human are determined by the thoughts of its end: they can only respond to that end, without introducing anything new. For the end of the human cannot be investigated without investigating its origin, just as questioning death is questioning birth in a mirror. To ask the question of the birth of the human is to pose the question of the "birth of death" or of the relation to death. But at stake here will be the attempt to think, instead of the birth of the human qua entity relating to its end, rather its invention or even its embryonic fabrication or conception, and to attempt this independently of all anthropologism, even if this would mean considering with the utmost seriousness this
other question: “And if we already were no longer humans?” For if nothing supports our saying that what is called the human is finished today, we may in any case set down as a principle that what begins must finish. And since Darwin we have known that the human, if it exists, has begun, even though we are unable to think how it began. This is the reason why it is so difficult for us to think how it might end. But the fact of not being able to think how it began or how it might end does not prevent the fact that it began and will end. Indeed, one may even think it may have already ended.

This analysis based on the work of Leroi-Gourhan will also allow for a dialogue with Jacques Derrida around the concept of différence, as this concept describes the process of life of which the human is a singular case, but only a case. What is in question is not emptying the human of all specificity but radically challenging the border between the animal and the human. Such an aim encounters problems, to be set out in volume two of this work, that can be compared to those met in (at least) the relativization of the specificity of alphabetic linear writing. It is a case of the same reasoning starting with different names: (1) if the privilege granted to linear writing by Hegel and Rousseau is logocentric, (2) if metaphysics is logocentric and vice versa, (3) if all metaphysics are humanist and vice versa, (4) then all humanisms are logocentric. To privilege alphabetic writing is to privilege man: “phono-logocentrism” is always anthropo-logocentrism, whatever philosophy may say on the subject in general. To oppose speech to writing is always also to oppose man to animal in opposing him in the same stroke to the technical. However, it must not be forgotten that if grammatology is not “one of the sciences of man, [this is] because it asks first, as its characteristic question, the question of the name of man” (Derrida 1974, 83). How does grammatology pose this question? By calling man (or his unity) into question, and by forging the concept of différence, which is nothing else than the history of life. If grammatology thinks the graphie, and if in so doing it thinks the name of man, this is accomplished by elaborating a concept of différence that calls on the paleoanthropology of Leroi-Gourhan and does so to the extent that Leroi-Gourhan describes “the unity of man and the human adventure [no longer] by the simple possibility of the graphie in general, [but] rather as a stage or an articulation in the history of life—of what I have called differance—as the history of the gramme,” while calling on the notion of program (Derrida 1974, 84).
It must of course be understood in the cybernetic sense, but cybernetics is itself intelligible only in terms of a history of the possibilities of the trace as the unity of a double movement of protention and retention. This movement goes far beyond the possibilities of “intentional consciousness.” It is an emergence that makes the grammê appear as such (that is to say according to a new structure of nonpresence) and undoubtedly makes possible the emergence of the systems of writing in the narrow sense. (Derrida 1974, 84)

The grammê structures all levels of the living and beyond, the pursuit of life by means other than life, “since ‘genetic inscription’ . . . up to the passage beyond alphabetic writing to the orders of the logos and of a certain Homo sapiens.” And it must be thought from out of the process of the “freeing of memory” described by Leroi-Gourhan: “an exteriorization always already begun but always larger than the trace which, beginning from the elementary programmes of so-called ‘instinctive’ behavior up to the constitution of electronic card indexes and reading machines, enlarges differance and the possibility of putting in reserve” (Derrida 1974, 84).

In other words, Leroi-Gourhan’s anthropology can be thought from within an essentially non-anthropocentric concept that does not take for granted the usual divides between animality and humanity. Derrida bases his own thought of différence as a general history of life, that is, as a general history of the grammê, on the concept of program insofar as it can be found on both sides of such divides. Since the grammê is older than the specifically human written forms, and because the letter is nothing without it, the conceptual unity that différence is contests the opposition animal/human and, in the same move, the opposition nature/culture. “Intentional consciousness” finds the origin of its possibility before the human; it is nothing else but “the emergence that has the grammê appearing as such.” We are left with the question of determining what the conditions of such an emergence of the “grammê as such” are, and the consequences as to the general history of life and/or of the grammê. This will be our question. The history of the grammê is that of electronic files and reading machines as well—a history of technics—which is the invention of the human. As object as well as subject. The technical inventing the human, the human inventing the technical. Technics as inventive as well as invented. This hypothesis destroys the traditional thought of technics, from Plato to Heidegger and beyond.

Différence is the history of life in general, in which an articulation is
produced, a stage of différance out of which emerges the possibility of making the grammê as such, that is, "consciousness," appear. The task here will be to specify this stage. We shall refer to a double rupture in the history of life—of what comes to pass or what passes, between two blows, two coups received by différance in general from a specific différance: the Zinjanthropian and the Neanthropian are the names of these two coups. What takes place here, the place of this event, is the passage from the genetic to the nongenetic. Derrida here refers, without quoting them, to two texts of Leroi-Gourhan (1993, 221 and 228), from which other consequences will be drawn in the second volume of this work. The passage from the genetic to the nongenetic is the appearance of a new type of grammê and/or program. If the issue is no longer that of founding anthropos in the pure origin of itself, the origin of its type must still be found. This means that a typology of grammês and programs must be constructed. As Paul Ricoeur suggests, cultural codes, like genetic codes, are "programs" of behavior; like them, they confer form, order, and direction on life. But unlike genetic codes, cultural codes have been constructed in the collapsed zones of genetic regulation, and can prolong their efficiency only through a total reorganization of the coding system. Customs, mores, and everything Hegel put under the heading of ethical substance, of Sittlichkeit, preceding all reflective Moralität, thus takes up the relay from genetic codes. (Ricoeur 1983, 93)

The whole question is thinking the highly paradoxical possibility of such a relay or passage; this possibility is the unthinkable question of an absolute past, of an inconceivable present, which can only be an infinite abyss, a collapse Ricoeur says. The first man to have died, "or rather believed to be dead," is the man of the first present, of the first temporal ecstasis of the past, present, and future; a past that was never present gives rise to a present linking onto no past present. We shall take up this abyssal question again as the paradox of exteriorization in Leroi-Gourhan. And we will see how paleontology allows the question of time to be taken up differently. The concept of différance, and of a rupture in différance, is an attempt at "conceiving" this passage.

Différance means both differentiation and deferral, a spacing of time and a temporalization of space:

The verb différer . . . has two meaning which seem quite distinct. . . . In this sense the Latin differre is not simply a translation of the Greek diapherein, . . .
the distribution of meaning in the Greek *diapherein* does not comport one of the two motifs of the Latin *differre*, to wit, the action of putting off until later, of taking into account, of taking account of time and of the forces of an operation that implies an economical calculation, a detour, a delay, a relay, a reserve, a representation—concepts that I would summarize here in a word I have never used but that could be inscribed in this chain: *temporization*. *Differer* in this sense is to temporize, to take recourse, consciously or unconsciously, in the temporal and temporizing mediation of a detour that suspends the accomplishment or fulfillment of “desire” . . . this temporization is also temporalization and spacing, the becoming time of space and the becoming-space of time. . . . The other sense of *differer* is the more common and identifiable one: to be not identical, to be other, discernible, etc. When dealing with differen(ts)(ds), a word that can be written with a final ts or a final ds, as you will, whether it is a question of dissimilar otherness or of allergic and polemical otherness, an interval, a *spacing*, must be produced between the other elements, and be produced with a certain perseverance in repetition. (Derrida 1982, 7–8)

All of this points primarily to life in general: there is time from the moment there is life, whereas Derrida also writes, just before the Leroi-Gourhan quotation, that “the trace is the differance that opens appearing and the signification (articulating) the living onto the non-living in general, (which is) the origin of all repetition” (Derrida 1974, 65). To articulate the living onto the nonliving, is that not already a gesture from after the rupture when you are already no longer in pure *phusis*? There is something of an indecision around différance: it is the history of life in general, but this history is (only) given (as) (dating from) after the rupture, whereas the rupture is, if not nothing, then at least much less than what the classic divide between humanity and animality signifies. The whole problem is that of the economy of life in general, and the sense of death as the economy of life once the rupture has taken place: life is, after the rupture, the economy of death. The question of différance is death. This *after* is

culture as nature different and deferred, differing-deferring; all the others of *phusis*—*tekhnē*, *nomos*, *thesis*, society, freedom, history, mind, etc.—as *phusis* different and deferred, or as phusis differing and deferring. *Phusis in différance*. (Derrida 1982, 17)

Now phusis as life was already différance. There is an indecision, a passage remaining to be thought. At issue is the specificity of the temporality
of life in which life is inscription in the nonliving, spacing, temporalization, differentiation, and deferral by, of, and in the nonliving, in the dead. To think the articulation is also to think the birth of the relation we name with the verb “to exist”; this is to think anticipation.

What Heidegger calls the already there, constitutive of the temporality of Dasein, is this past that I never lived but that is nevertheless my past, without which I never would have had any past of my own. Such a structure of inheritance and transmission, which is the very ground of facticity itself since tradition can always conceal from me the sense of the origin that it alone can transmit to me, presupposes that the phenomenon of life qua Dasein becomes singular in the history of the living to the extent that, for Dasein, the epigenetic layer of life, far from being lost with the living when it dies, conserves and sediments itself, passes itself down in “the order of survival” [survivance] and to posterity as a gift as well as a debt, that is, as a destiny. This is not a “program” in the quasi-determinist biological sense, but a cipher in which the whole of Dasein’s existence is caught; this epigenetic sedimentation, a memo-

ization of what has come to pass, is what is called the past, what we shall name the epiphylogenesis of man, meaning the conservation, accumulation, and sedimentation of successive epigeneses, mutually articulated. Epiphylogenesis is a break with pure life, in that in the latter, epigenesis is precisely what is not conserved (“the programme cannot receive lessons from experience” [Jacob 1974, 11]) even if this is not without effect on the genetic selection in which evolution consists (these questions have at any rate to be put in the perspective of the relation phenotype/genotype as embryology sets it forth, thereby giving a new place to epigenesis)\(^1\)—but this effect can therefore only transmit itself genetically, precisely; epi-phylo-genesis also in the sense in which, just as the embryo recapitulates each stage of evolution, each branch of the shrub of which it is the most recent bud, epigenesis must be recapitu-

lated to take place. This is the very ideal of mathēsis (an analogy to be handled all the more prudently as the concept of embryonic recapitulation is itself a metaphor). Epiphylogenesis bestows its identity upon the human individual: the accents of his speech, the style of his approach, the force of his gesture, the unity of his world. This concept would be that of an archaeology of reflexivity.

This is what Heidegger called the historical [l'historial]. We come now to Heidegger after having opened up the questions of the temporality of
différence *qua* the movement of life in general because there is in Heidegger an opposition between the time of technical measurement and concern, which is the loss of time, and authentic time, which is proper to Dasein—wrenched from the technical horizon of concern. Now if it is true that only epigenetic sedimentation can be the already-there, this is only possible when the transmission allowing for the sediments is of an absolutely technical, nonliving essence: made possible by the organized albeit inorganic matter that the trace always is—be it a matter of tool or of writing—let us say one of an organon in general.

The ambiguity of the invention of the human, that which holds together the *who* and the *what*, binding them while keeping them apart, is différence undermining the authentic/inauthentic divide. We shall look into this at the very moment of its passage, from *phusis in différence* (life in general) to the différence of this différence. Différence is neither the *who* nor the *what*, but their co-possibility, the movement of their mutual coming-to-be, of their coming into convention. The *who* is nothing without the *what*, and conversely. Différence is below and beyond the *who* and the *what*; it poses them together, a composition engendering the illusion of an opposition. The passage is a mirage: the passage of the cortex into flint, like a mirror proto-stage. This proto-mirage is the paradoxical and aporetic beginning of “exteriorization.” It is accomplished between the Zinjanthropian and the Neanthropian, for hundreds of thousands of years in the course of which the work in flint begins, the meeting of matter whereby the cortex reflects itself. Reflecting itself, like a mirrored psyche, an archaeo- or paleontological mode of reflexivity, somber, buried, freeing itself slowly from the shadows like a statue out of a block of marble. The paradox is to have to speak of an exteriorization without a preceding interior: the interior is constituted in exteriorization.

Hominization is for Leroi-Gourhan a rupture in the movement of freeing (or mobilization) characteristic of life. This rupture happens suddenly, in the form of a process of exteriorization which, from the point of view of paleontology, means that the appearance of the human is the appearance of the technical. Leroi-Gourhan specifies this as the appearance of language. The movement inherent in this process of exteriorization is paradoxical: Leroi-Gourhan in fact says that it is the tool, that is, *tekhmē*, that invents the human, not the human who invents the technical. Or again: the human invents himself in the technical by inventing the tool—by becoming exteriorized techno-logically. But here the human
is the interior: there is no exteriorization that does not point to a movement from interior to exterior. Nevertheless, the interior is inverted in this movement; it can therefore not precede it. Interior and exterior are consequently constituted in a movement that invents both one and the other: a moment in which they invent each other respectively, as if there were a technological maieutic of what is called humanity. The interior and the exterior are the same thing, the inside is the outside, since man (the interior) is essentially defined by the tool (the exterior). However, this double constitution is also that of an opposition between the interior and the exterior—or one that produces an illusion of succession. Where does this illusion come from? To anticipate the next section, let us say that it comes from an originary forgetting, ἐπιμηθεία as delay, the fault of Epimetheus. This becomes meaningful only in the melancholy of Prometheus, as anticipation of death, where the facticity of the already-there that equipment is for the person born into the world signifies the end: this is a Promethean structure of being-for-death, a structure in which concern is not the simple covering-over of Eigenlichkeit. This is the question of time.

Leroi-Gourhan attempts to resolve this paradox by positing that the technics of the Zinjanthropian is still a quasi-zoology. And yet it is already no longer anything of the kind, otherwise one could not speak of exteriorization. This is why there is an intermediary period, between the Zinjanthropian who is already a man, and the Neanthropian opening onto the human that we are—if we are still human: this partition calls into question the unity of the human. Between the two is set up the definition of a cortex that, after the Neanthropian, will no longer evolve. It is in this period that the coupling cortex/flint, living matter / inert matter, will be elaborated, when a double plasticity will be woven, where the hardness of mineral matter will both inform and be informed in the fluidity of “spiritual” immateriality (which is still matter, a mode of being, differing and deferring, of matter), work that is still genetic, but that is already governed by epigenesis as epiphylogensis, that is, by an epigenesis that the flint support conserves. Flint is the first reflective memory, the first mirror.

At the dawn of hominization, that is, of corticalization, the epiphylogenetic vector becomes flint as that which conserves the epigenesis; the process of corticalization operates as a reflection of this conservation, which is already, in itself, a reflection.
Everything Begins with the Feet

Leroi-Gourhan questions the empirical-transcendental divide from which Rousseau’s philosophical anthropology derives. But the more Leroi-Gourhan, by planting the roots of the technical tendency into an older, deeper zoological dynamic, tries to solve the resulting paradoxes, the more he will himself encounter them in turn. Once again, this thought will run up against technology as thanatology and temporality, and hence will not be able to avoid the schema of a second origin producing itself incomprehensibly, if not providentially.

Having stressed that the disquiet of origin seems attested quite early on in the human, Leroi-Gourhan states the bottom line of his thesis through a critique of Rousseau. The so simple and so evident idea of supposing the original human’s “conformation to have been at all times what it appears to be to us today, that he has always walked on two legs, and made use of his hands as we do” (Rousseau 1973, 52), is a “cerebralist theory” since the hands are empty and the body naked. The “end” in this theory is totally constituted from the origin, and becoming as such is ignored. The originary attributes have nothing to do with technicity itself, which only occurs with the fall, coming only afterward. The essence of natural man that arrives in one stroke as it is today but without technology, before culture, before deferred nature, is not constituted by his history. Leroi-Gourhan will demonstrate the opposite, first by establishing an essential link between the upright skeleton, technics, language, and society, and next by approaching technology as a singular zoological reality.

It is nevertheless the case that he effaces the very enigma of Rousseau’s narrative: the duplicity of (the question of) the origin, the transcendental necessity of affirming a first origin that the second will come to accomplish in derealizing it. The fact that this internal necessity is not criticized explicitly, nor even evoked, is obviously not a case of pure negligence: the aporia constituting this necessity will never be actually assumed by the paleontologist, who will then repeat the artifice—while resituating it. He nevertheless thereby opens the question of the possibility—of time—in an approach quite thoroughly emancipated from an anthropocentric comprehension of technological dynamics and allowing the constitution of temporality to be apprehended from the standpoint of the emergence of memory elaborated and conserved by the organization of the inorganic. What was in Rousseau the first origin as the immediate availability
[mise à portée] of the hand becomes originary distancing, manipulation as a new form of mobilization, exteriorization—that is, an absolute de-fault of origin as well as the disquiet over the very possibility of an assignable beginning. This thought which thus opens the ultimate possibility of a pursuit of technological differentiation—pursuit of life by means other than those of life—by the renunciation of humanity itself. Becoming may then be fully thought, if not fully endured, as the actualization of power [puissance].

The human is not a spiritual miracle that would suddenly belong to an already given body, in which the “mental” would be grafted onto the “animal”: the human does not descend from the monkey. The human body, even the most archaic of bodies, is functionally different from that of primates: in question is another branch of the tree of evolution. The psychic has its roots in a specific general physiological organization; it is first of all a state of the body—but it is not that alone.

In the eighteenth century the evolutionist point of view comes into prominence with Carl Linnaeus, along with the idea of zoological continuity with the work of Louis Daubenton, who studied “the position of the occipital foramen in humans and animals.” The comparison between the chipped flint tool and the human is made by John Frere in 1800. Charles Darwin publishes The Origin of Species by Means of Natural Selection in 1859, in which “humans can only be understood as part of a terrestrial totality. . . . Conventional wisdom links the name of Darwin to the expression ‘the human being is descended from the monkey’” (Leroi-Gourhan 1993, 8). By affirming the opposite, Leroi-Gourhan can show that the hominid anatomo-systematic, the general economy of its mechanical and motor system, is such that early on the specific elements of the human, the erect position and a new organization of the anterior field, are called forth, whose logical consequences are technicity and the forms of sociability they immediately imply. The human is an originary psycho-physical complex the substance of which is to be understood in terms of the dynamic of the skeleton, following a line of evolution embedded in the most remote past.

The Neanderthal brainpan is discovered in 1856, the “turning point in human paleontology. . . . The image of the ape-man comes into clear focus; he has a name. . . . : Anthropopithecus (or Homosimian).” But “the error was that of drawing a straight line linking Homo sapiens, via the Neanderthalsians, with the impressive anthropoid foursome of modern
times—the gorilla, the chimpanzee, the orangutan, and the gibbon” (Leroi-Gourhan 1993, 10–11). The determining archaeological element is the Zinjanthropian, discovered in 1959, “accompanied by his stone implements . . . a man with a very small brain, not a super-anthropoid with a large brainpan. . . . This finding necessitates a revision of the concept of the human being” (18) because the direct consequence is that the human did not begin with the brain, but with the feet, and that in the general dynamic thereby inaugurated—anthropological as well as indissociably technological—“to some extent cerebral development is a secondary criterion.” Erect posture determines a new system of relations between these two poles of the “anterior field”: the “freeing” of the hand during locomotion is also that of the face from its grasping functions. The hand will necessarily call for tools, movable organs; the tools of the hand will necessarily call for the language of the face. The brain obviously plays a role, but it is no longer directive: it is but a partial element of a total apparatus, even if the evolution of the apparatus tends toward the deployment of the cerebral cortex.

The acquisition of an erect posture, one of “the solutions to a biological problem as old as the vertebrates themselves,” is inscribed in the series of living beings, and as the logical term of their evolution, from which the hand-face linkage in the anterior field must be thought, with primordial consequence that “tools for the hand, language for the face, are twin poles of the same apparatus,” itself determined by a specific cerebral organization (Leroi-Gourhan 1993, 20). We shall attempt to show that this specificity resides in a unique coupling with the outside qua epi-phylogenetic vector, that is, qua the “truth” of the inside.

Advance and Delay

If paleontology thus ends up with the statement that the hand frees speech, language becomes indissociable from technicity and prostheticity: it must be thought with them, like them, in them, or from the same origin as theirs: from within their mutual essence.

By inscribing his description of hominization in the very long history of the living animal, Leroi-Gourhan shows how all the elements quite anciently come into play for the emergence of a general system of a certain function that remains unique: the human, that is, technology, “exuded” by the skeleton. There is no sudden and miraculous rise of a totally con-
stituted human: technics, which is the synthesis of the different criteria of humanity, which is the very criterion, can only be understood in a zoological perspective, even if it is impossible to remain solely within this perspective, which is not without epistemological problems. Leroi-Gourhan will stay almost within this perspective, but never exclusively.

General zoological evolution is understood from the standpoint of the concept of “liberation,” of which the freedom of the hand and all its consequences are but individual cases; and an essential idea is here introduced for us, readers of Rousseau: “To what a striking degree the urge to conquer time and space, our dominant trait, is also characteristic of all the [animal] witnesses selected to illustrate the ascent of the human being. It is possible to regard mobility as the significant feature of evolution toward the human state” (Leroi-Gourhan 1993, 26). Mobility, rather than intelligence, is the “significant feature,” unless intelligence is intelligible only as a type of mobility. What is specific to the human is the movement of putting itself outside the range of its own hand, locking onto the animal process of “liberation”: “the brain was not the cause of developments in locomotor adaptation but their beneficiary” (26). The hand never has anything within its range. Prostheticity, here a consequence of the freedom of the hand, is a putting-outside-the-self that is also a putting-out-of-range-of-oneself. Pursuing the “process of liberation,” the installation of this techno-logical complex nevertheless brings on a rupture.

The conquest of mobility, *qua* supernatural mobility, *qua* speed, is more significant than intelligence—or rather, intelligence is but a type of mobility, a singular relation of space and time, which must be thought from the standpoint of speed, as its decompositions, and not conversely (speed as the result of their conjunction). It would be necessary, moreover, to analyze the relation of différence to speed: différence is itself also a conjunction of space and time more originary than their separation. It is in this sense, then, that différence will, perhaps, have to be thought as speed.²

At the end of the process of mobilization, which is also that of “liberation,” and with liberation becoming “exteriorization,” a particular type of cortical organization of the brain appears on the scene by which evolution takes on “an extra-organic sense.” Is the sense “spirit”? For the moment the only issue is the appearance of technics, which is liberation when it becomes exteriorization, but which must be thought from out of the extremely remote biological past in which the anterior field is struc-
tured. The role of the brain can only be understood according to the most ancient tendencies of the functional system of living vertebrates. If its “role as a coordinator is . . . a primordial one whose function appears as the ‘tenant’ of the rest of the body, . . . there is no special relationship between the evolution of the brain and that of the body which that brain controls” (Leroi-Gourhan 1993, 37).

Six major stages in the evolution of vertebrates mark the general process of “liberation.” The first four stages take place between 300 and 200 million years before us, and it is on the backdrop of this enormous anteriority that hominization must be understood. This situation—in which a general framework is quite largely anticipated without being, for all that, totally accomplished, that is, stabilized—is parallel to the precocity with which the anthropoid apes freed their hand and achieved erect posture long before their brain had reached the level of ours today. . . . The development of the nervous system follows in the wake of that of the body structure. Theriodont reptiles had the bodies of carnivorous mammals, but their brain was still no larger than a fountain-pen cap suspended inside an edifice whose entire inner space would be filled, two hundred million years later, by the brain of a dog. (Leroi-Gourhan 1993, 50)

At the end of the completion of the functional system, evolution continues by rupture and not by fulfillment [remplissment]. In the course of this fulfillment, the skeleton advances beyond the nervous system, as in the hypothesis that technics advances beyond society, an advance the terms of which were set out in the introduction to this work, and which would be a shift in the latter, as if life, considering the other means through which it is pursued, were a succession of modalities of relationships between a structural advance and delay, producers of differences by the play of tension in which they consist.

Mammals that only walk seem to lead to a definitive stabilization of the physiological system and to a hyper-specialization, what Simondon would have called a biological “hypertelia,” whereas the graspers, orienting themselves, on the contrary, toward an ever more open functional indetermination, prepare the terrain for what will be in the human case technicity in the strong sense. The interpretation of this theme of indetermination, as we will meet it again in the myth of Prometheus, will lead in the following chapters to the properly philosophical formulation of a dynamic of the undetermined.
Skeleton, Equipment, and the Brain

The appearance of the tool, accomplishing the indetermination specified from the moment of the human as a process of exteriorization, must be brought into relation to the particular organization of the cortical zones of the brain. This organization sheds light upon the dialectical relation formed between the hand and the central nervous system: there is a direct link between nonspecialization and the development of the cortical zones of the brain.

With the advent of exteriorization, the body of the living individual is no longer only a body: it can only function with its tools. An understanding of the archaic anthropological system will only become possible with the simultaneous examination of the skeleton, the central nervous system, and equipment.

The set of hypotheses proposed retraces the possibilities of passage between three stages of archaic humanity: the Australanthropian, the Archanthropian, and the Neanthropian, in the course of which the cortical fan opens. Australanthropians are already humans—not so much “humans with monkeys faces as humans with a braincase that defies humanity. We were prepared to accept anything except to learn that it all began with the feet!” (Leroi-Gourhan 1993, 65). If the small size of the brain confirms its “delay,” with the new bipolar organization of the anterior field, there is a corresponding cortical organization radically different from that of primates. If the being under scrutiny is a human, it is manifestly not endowed with all those faculties normally attributed to “humanity.” This is the human of pure nature more than any other human: but are we still capable of detecting what we would call “human nature”? Do we not see, in this original human, that “human nature” consists only in its technicity, in its denaturalization?

The humanity of the Archanthropians “remains disconcerting. Their face is enormous and their braincase is appreciably smaller than ours” (Leroi-Gourhan 1993, 69). Lastly, if the volume of the Neanderthal brain may reach present-day volumes, “the relative proportions are not the same in Neanderthal man as in ourselves. The Paleoanthropian skull is dilated in its occipital part, the forehead remaining narrow and low” (71).

The determining question is the deployment of the cortical fan at the moment when the skeleton organization stabilizes. The cortex of graspers already contains “technical” zones in the sense that fabricating technicity
obviously has its source in grasping (Leroi-Gourhan 1993, 80). However, technicity qua exteriorization implies an organic link between hand and face—between gesture and speech—which presupposes a shared competence, “zones of association” where the relations between cortical zones are redistributed. There is a contiguity of the territories of the face and the hand in the fourth area. This articulation of the motor areas of the anterior field is attested by the “neurological experiments [which] have demonstrated that the zones of association that surround the motor cortex of the face and hand are jointly involved in producing phonetic or graphic symbols” (88). From here, Derrida will draw the grammatological consequences, the arche-trace, older than the specification of two zones as well as the constitution of these zones of association, allowing the ensemble of the movement of exteriorization to be interpreted as différence (Derrida 1974, 84–87).

The unity of the human here becomes tenuous: one can hardly see any other permanence, in the vital phenomenon described from the Australopithecine to Homo sapiens, than the fact of technicity. The form of the trajectory continuing the starting point of denaturalization is what enables a sole phenomenon to be seen at work throughout millions of years. The continuity of the human would be due only to the permanence of “liberation” having become “process of exteriorization,” without, at least up to now, the permanence of its necessity in the pursuit of movement being assured or demanded.

The fact remains that this techno-logical continuity also signifies that cortical organization as it is developed in the technical gesture as a process of exteriorization, must also have necessarily engendered language: starting with the Zinjanthropian, there must have been the possibility of speech.

Once the question of cortical organization has been established, and before the analyses of the three stages of archaic humanity by the comparison of their tools can begin, there one must face the problem posed for the determination of a species-related, that is, zoological character by the appearance of an element that can evidently not be considered as living, as a part of the body’s anatomy, but that is no less essential to the definition of its zoology, an element itself invested with morphogenetic movement, caught in a play of evolitional constraints that then coincide with the zoological “liberation’s” having become “exteriorization.” With what kind of scientific apparatus must technics be apprehended: zoology, sociology,
or another discipline? This problem will appear to motivate Leroi-Gourhan’s retreat, when he restores the invention of the second origin.

The projection of the hand and its objects toward what is ever more out of their range first appears, at the level of the Australanthropian, as an actual “anatomical consequence, the only solution possible for a being whose hands and teeth had become completely useless as weapons” (Leroi-Gourhan 1993, 90). It is from this initially zoological understanding of technics that the question of its eventual originary autonomy can be opened up, as a question of its own phylogenetic movement. However, the conquest of this independence is here not yet effected, and we shall clearly see later what will have made it possible.

“We arrived at the concept as being a ‘secretion’ of the Anthropian’s body and brain” (Leroi-Gourhan 1993, 91). Its body and brain are defined by the existence of the tool, and they thereby become indissociable. It would be artificial to consider them separately, and it will therefore be necessary to study technics and its evolution just as one would study the evolution of living organisms. The technical object in its evolution is at once inorganic matter, inert, and organization of matter. The latter must operate according to the constraints to which organisms are submitted. The idea of a sort of zoology or phylogenetics of technics as it has been developed here carries further the analyses of Man and Matter.

“Technical Consciousness” and Anticipation

The analysis conducted from the standpoint of tools becomes concretized in the case of the flaked pebbles of the Zinjanthropian pebble culture. If the “stereotypes” of the fabrication of tools evolve, however slowly, and do so in an ascending, ever more accelerated movement, this is due to the very fact of exteriorization qua emancipation with regard to the processes of genetic programming. It is from such a viewpoint and from the onset that once the Australanthropian stereotype has been recognized, the hypothesis of a “technical consciousness” must be entertained; and yet, from the Australanthropian up to the Neanderthalian, the evolution of stereotypes is so slow that its determinations still seem to derive from neurological, thus genetic characteristics of the individuals that make the tools, as if technics had not yet become totally autonomous with respect to the living: for thousands of years, the industry of archaic man “remained unchanged—conditioned, as it were, by the shape of his
skull" (Leroi-Gourhan 1993, 92). If there is no consciousness in the sense of “creative consciousness,” nor then in the sense of what is ordinarily called consciousness, if there can only be a technical consciousness that is nevertheless not the simple automatic or programmatic-genetic behavior of a fabricating animal, then there must be anticipation. “Technical consciousness” means anticipation without creative consciousness. Anticipation means the realization of a possibility that is not determined by a biological program. Now, at the same time, the movement of “exteriorization,” if it seems to presuppose this anticipation, appears here to be of a strictly zoological origin, to the point of still being determined by the neurophysiological characteristics of the individual. When this determination will have completely ceased its action on technical evolution, Leroi-Gourhan will introduce a notion of spirituality: a second origin.

The very idea of the emergence of a forthrightly recognizable humanity must be challenged; the tracing of any simple boundary between humanity and animality must be seriously called into question. This position is in the end not so far removed from the fiction of a first origin in Rousseau, but it will lead Leroi-Gourhan, to the extent that he collapses the dynamism of archaic technical objects onto that of the cortex, to shift the aporia toward the second origin.

We are here confronted with the question of a passage that is not anthropological so much as it is techno-logical. Nevertheless, the issue is anticipation: rather than being that of the human or the technical, the question is what absolutely unites them, time as the emergence of the “grammê as such,” différence when it differs and defers in a new regime, a double différence. But does the emergence of the “grammê as such” coincide with this doubling up of différence? Might the emergence not come later?

In the ultra-archaic period extending from the Zinjanthropian to Neanderthal man, the essential part of the process of transformation is the spreading of the cortical fan, which translates directly into the evolution of forms of equipment, meaning that in the final analysis, technological dynamism still remains strictly biological, even while it will have been necessary to introduce the hypothesis of a “technical consciousness” and thus a certain form of anticipation so as not to lose the initial hypothesis of a rupture (an exteriorization) effective from the Zinjanthropian onward. This theme of anticipation will issue in an opposition between technical and spiritual intelligence that will end up being the question of death for archaic humanity.
With flaked pebbles, there was only one gesture in the handling of the pebble (a blow struck at 90 degrees, to which corresponded one sharp edge and a technical consciousness). With the Archanthropian stereotype, the gesture is combined with others: “This [acquisition] was more than simply the addition of something new, for it implied a good deal of foresight on the part of the individual performing the sequence of technical operations” (Leroi-Gourhan 1993, 97). Anticipation was present from the start, from the first gesture, with somewhat less foresight. But what does this “good deal of foresight” mean? As soon as there is any sort of anticipation, in whatever “quantity,” has not a qualitative threshold been surpassed that should first be described for itself before wishing or being able to measure it? If it is possible to measure this “thing,” should one not know what is being measured?

Because it is affected with anticipation, because it is nothing but anticipation, a gesture is a gesture; and there can be no gesture without tools and artificial memory, prosthetic, outside of the body, and constitutive of its world. There is no anticipation, no time outside of this passage outside, of this putting-outside-of-self and of this alienation of the human and its memory that “exteriorization” is. The question is the very ambiguity of the word “exteriorization” and the hierarchy or the chronological, logical, and ontological preeminence that it immediately induces: if indeed one could speak of exteriorization, this would mean the presence of a preceding interiority. Now, this interiority is nothing outside of its exteriorization: the issue is therefore neither that of an interiority nor that of exteriority—but that of an originary complex in which the two terms, far from being opposed, compose with one another (and by the same token are posed, in a single stroke, in a single movement). Neither one precedes the other, neither is the origin of the other, the origin being then the coming into adequacy [con-venance] or the simultaneous arrival of the two—which are in truth the same considered from two different points of view. We shall later name this structure the complex of Epi-metheus, and shall see that for Simondon it is a question of a transductive relation. A “prosthesis” does not supplement something, does not replace what would have been there before it and would have been lost: it is added. By pros-thesis, we understand (1) set in front, or spatialization (de-severance [é-loignement]); (2) set in advance, already there (past) and anticipation (foresight), that is, temporalization.

The prosthesis is not a mere extension of the human body; it is the
constitution of this body *qua* “human” (the quotation marks belong to the constitution). It is not a “means” for the human but its end, and we know the essential equivocity of this expression: “the end of the human.”

What is called “interiority” nevertheless indicates the problem of a potentiality of which “exteriorization” seems to be the act, that is, according to the Aristotelian theory, of which it is the truth, the sole truth. “Interiority” would be only the expectation, the call, or the promise of exteriorization—the tendency to exteriorization. Now, expectation means projection and future—anticipation. The whole problem, which thus becomes the distendedness of the past, the present, and the future, is caught in a circle in which the tool appears at one and the same time *qua* the result of anticipation, exteriorization, and *qua* the condition of all anticipation, anticipation appearing itself *qua* the interiorization of the originary fact of exteriorization. Exteriorization *qua* the act that is the horizon of anticipation, *qua* the gesture, is also an *Erinnerung*, the very moment of reflexivity, of the affection of self as a return to self. The problem remains that it does not seem that such a reflexivity may be manifestly characterized as a relation to the *grammē* as such.

Anticipation and everything it implies by way of engagement in the process of exteriorization, which was thus already there from the Australanthropian onward, receives confirmation in the next stage, the opening of latitudes in which it consists, and which perfectly coincide with the process of exteriorization:

> In the case of the Australanthropians . . . to make a hand ax one has to choose the point on the surface of a lump of stone at which to split off the large flake whose cutting edge will be the blade of the future tool. Furthermore, a second operation has to be performed in order to reduce the initial flake to a shape that must be preexistent in the maker’s mind. (Leroi-Gourhan 1993, 97)

It is the process of anticipation itself that becomes refined and complicated with technics, which is here the mirror of anticipation, the place of its recording and of its inscription as well as the surface of its reflection, of the reflection that time is, as if the human were reading and linking his future in the technical. But here two levels of the understanding of anticipation must be distinguished: the emergence of this possibility of anticipation, at the level of our analysis here, proceeds in a quasi-immobility in relation to another level, which would no longer be only *this* time of anticipation (which could be called the “operative” time) but
would be a time of anticipation in which the form of anticipation itself undergoes transformation, is itself broadened out, and in which the human (be)comes (to) itself, becoming only what the technical becomes. There would be (1) anticipation insofar as without it, humans could not make tools, and (2) anticipation insofar as the fabrication of tools is not only repeated in the form of a stereotype, but evolves, is transformed, becomes differentiated.

But can these be separated? Where does the differentiation of the what come from? If we grant Leroi-Gourhan that there is a zoological dimension to the instrument, which explains the extreme slowness of its evolution at the beginning of the process of exteriorization, this in no way eliminates the question of how an evolution of instrumental stereotypes is possible. And if it seems obvious that this evolution is not only determined by that of the who qua zoon, by the who qua living, but also differentiated as are all other living beings, then the conclusion must be drawn that it is rather the evolution of the what that has a return effect of the who and governs to a certain extent its own differentiation: the who is not differentiated like the other living beings; it is differentiated by the nonliving (and a deferral of death by this differentiation in death), by organized but inorganic matter, the what. How else to explain the evolution of instrumental stereotypes, if not at the level of anticipation, since instrumentality is no more than quasi-zoological, regulated as it is in its production and its differentiation by the fact of “genetic collapse”? The question of technics is the question of time.

The issue is also that of the emergence of mortality, embedded in the very ancient ground of the instinct of conservation. If this instinct does not operate, does not produce differences, the rupture point is technicity: one can only speak rigorously of morality in the presence of exteriorization and prosthesis. But one must in all rigor speak of mortality as soon as there is exteriorization and prosthesis. Mortality, that is, anticipation (of the end), will have to be analyzed at two indissociable levels.

The Double Origin of Technical Differentiation

“Tools and skeletons evolved synchronously. We might say that with the Aranthropians, tools were still, to a large extent, a direct emanation of species behavior” (Leroi-Gourhan 1993, 97). This reference to a specificity, that is, to a strictly zoological character, is contradictory with what
Leroi-Gourhan will say in the second part of *Gesture and Speech*, where he will oppose the *specificity* of animal groups (as species) to the *ethnicity* of human groups, these two types of zoological groupings being governed, one by a *specific*, that is to say genetic, *differentiation*, the other by an *ethnic*, that is to say technico-socio-cultural *differentiation*. The species specific is here opposed to what we have called the epiphylogenetic.

These differentiations are opposed in the fact that in the first case the memory governing the group is internal to the organism, while in the second it is external. “Species specific” signifies “strictly zoological” by opposition to “ethnic,” which means nongenetically programmed: since ethnic memory is external to the individual, it can evolve independently of genetic drift and is thus found to be in this sense temporal. Now the “specificity” Leroi-Gourhan is speaking about here has a decidedly more vague sense, and since it also lies at the origin of what will later be the ethnic differentiation of human groupings, it is therefore in no way opposed to differentiation.

The hypothesis of a “direct emanation of species behavior” stems from the fact that the stereotypes evolve with the rhythm of cortical organization—an evolution that remains at least codetermined by genetics. However, cortical evolution might well itself be codetermined by exteriorization, by the nongenetic character of the tool. There would be a double emergence of cortex and flint, a convention of the two, an arche-determination that would surpass them, would be the double work of a double différencé abysmally mirrored [s’abîment en miroir]. The whole problem will be to exhum the complex (transductive) dynamic of this “Epimethean complex.” Saying “to a large extent” is a way of avoiding or forgetting this problem, of allowing its stakes to go unnoticed, of consequently reintroducing spirituality.

Differentiation is only possible inasmuch as the memory of the group, when human, is “external.” But from the moment it is external, group memory is no longer species specific, for from that moment it is technological, the technical and the logical (or linked to “language”) being only two aspects of the same property, as Leroi-Gourhan writes elsewhere. Ethnic differentiation in this sense (as species specific) can only be originary in the human, in principle, even if no trace of it can be found (Leroi-Gourhan 1993, 141), if only because there is a possibility of language from the moment that there is a possibility of the tool, and a language cannot be conceived that is not immediately an idiomatic differentiation, the eth-
nic differentiation of which it is perhaps but a case. As soon as there is
exteriorization, and even if it must certainly have had a species-specific
origin in which it is still caught, we are precisely no longer simply in the
specific, but in the process of a differentiation between (human) groups
governed by techno-logical and idiomatic, if not “ethnic,” “laws.” The
fact that we do not see the differences, that we are not able to identify
them, does not mean that they are nonexistent. Genetic differentiation
still continues. The problem is, then, to know how these two levels of dif-
ferentiation are articulated.

The idea of ethnic difference as the proper trait of humanity in the tot-
ality of the living is a tenuous one. Perhaps we see appearing today a hu-
manity in which ethnic differentiation is on the way out on account of
deterritorialization, supposing ethnicity to be of territorial essence. It
seems to us more prudent to speak of idiomatic differentiation, whatever
the level at which it operates: individual or group (ethnic, but also tech-
nical, etc.), and not only language-related differentiation.

Leroi-Gourhan opposes two sorts of intelligence, technical and non-
technical. He affords himself this distinction not only because of the
problem he has in thinking anticipation (of which the idiomatic is but
another name), but also because he had stated in Man and Matter that
there were de facto universal technical types, factual technical universals, ten-
dencies cutting through the diversity of cultures and imposing themselves
in a process similar to that of Simondon’s concretization. As a result, the
technical differentiation effected through these tendencies is no longer
cultural in the ethnic sense, but still is in the nonnatural sense. Does not
this differentiation, however, remain idiomatic in origin?

If Leroi-Gourhan does not focus on the problem posed here by the ap-
proximate use of the phrase “species specific,” as if it were not a problem
for him, the reason is that he will himself reintroduce everything he had
elsewhere helped to drive out, namely an opposition between the spiritual
and the moral, on the one hand, and the technicomaterial or technophysi-
cal, on the other. He will end up saying: technological evolution is essen-
tially of zoological origin, and elsewhere there is a “nontechnical,” reflexiv-
e and symbolic “intelligence.” Where will this intelligence come from?
Why was it not playing any role in the anticipation that all exterioriza-
tion presupposes?

“To a large extent” (“tools were still, to a large extent, a direct eman-
ation of species behavior”) means: up to a certain point, not entirely—yet
in truth, one should say: no longer at all. What governs exteriorization qua evolution (as differentiation) is not species specific because anticipation is the measure, that is, the limit, of what Leroi-Gourhan called a "large extent." To be sure, this new form of evolution still has genetic consequences, is still counterconditioned by these consequences, but the genetic no longer governs: Leroi-Gourhan uses this expression ("to a large extent") to designate what we have called codetermination. If he does not wish to say that it is no longer at all a question of specific determination (although the zoological evolution of the cortex yet has this role), this is also because he refuses to place the origin of human evolution in human creativity, that is, in a creative "consciousness."

His reasoning must be refused when it comes down to giving to the anticipation of archaic humans only an operative role and then rediscovering a nontechnological element in the human, a "creative consciousness," and all the implications thereof, at a more evolved "level" of humanity, as if Leroi-Gourhan himself ended up admitting that archaic humans will finally not have been fully human, and thus not humans at all. If this is the meaning of his contestation of the unity of the human, then, since it issues in a determination of two types of humanity on the basis of a quite traditional opposition between technics and intellect, it cannot be accepted. From the absence of unity in the human, it would be better to conclude instead that the human can only be defined negatively, by the trait of this technical inhumanity that allows it to be differentiated without, however, permitting its identification. This impossibility of anything but a phantasmatic identification is "the mirror stage."

The opposition between the two levels of anticipation leads Leroi-Gourhan to posit that before Homo sapiens, the human had only technical intelligence at his disposal—technical, as opposed to reflective, individual, spiritual, essentially nontechnical intelligence, the passage from Homo faber to Homo sapiens being linked to cortical deployment. This is a strange approach, to assign a determining role—so severely criticized earlier—to the brain. It is all the more strange if lithic equipment is an "extension of the skeleton"; if the skeleton has always been in advance upon the nervous system, equipment should, quite on the contrary, determine the cortical fulfillment rather than be determined by it.

From the Zinjanthropian to Neanderthal man, a cortical differentiation as well as a lithic differentiation is effected, extending from the
flaked pebble and the laurel leaves of the Neanderthalians to the biface. There is with the Neanderthalian a second rupture. We submit that between these two ruptures, cortex and equipment are differentiated together, in one and the same movement. The issue is that of a singular process of structural coupling in exteriorization that we are calling an instrumental maieutics, a “mirror proto-stage” in the course of which the differentiation of the cortex is determined by the tool just as much as that of the tool by the cortex: a mirror effect whereby one, looking at itself in the other, is both deformed and formed in the process [l’un se regardant dans l’autre qui le déforme s’y forme].

Instrumental Maieutics

Exteriorization means that genetic memory and its transformation do not coincide with the memory of the stereotype and its transformation. It seems obvious that the memory of the stereotype is influenced by the transformations of genetic memory. It is no less the case that another memory is set up. The question then becomes: where is the memory of the stereotype kept, if not in the material trace of the stereotype in which the preexisting tool itself consists, repeated, duplicated by its “maker” and guiding the latter much more than being guided by him or her? In this sense, the archaic cortex and equipment are codetermined in a structural coupling of a particular sort. The issue is to know the kind of repetition at work in the duplication of stereotypes down through generations of archaic humans, how it is distinguished from genetic duplication, in what way differences play and are inscribed in the duplication, and where they come from. But it is certainly not because the technological is the guide here that one must conclude with the specific or the zoological. In the process and in its evolution, the human undoubtedly remains the agent of differentiation, even though it is guided by the very thing it differentiates, even though it discovers itself and becomes differentiated in that process, in short, is invented or finds its image there, its imago, being here neither a phantasm nor a simulacrum—as it always is when describing technics. Yet can one then measure what is therefore said of the human, of (the absence of) its unity and its essence?

It is undoubtedly a question of an “unconscious” process, analogous from this point of view to a zoological process. But the issue is not just one of analogy. Leroi-Gourhan attests to this fact when he ends up ac-
knowing that in this process “individual intelligence . . . certainly played some part” (1993, 97).

Reading these contradictorily approximate remarks, one feels unavoidably that the issue has been extremely simplified—as though the alternative were between individual intelligence and zoological determination. The question must be asked: what type of anticipation does a projection-exteriorization of the lithic type, as memory support, make possible? For there is a history of techno-logical possibilities of anticipation—which is the history of the different mirror stages in which humanity reflects itself, and this is how that reflection takes place. This is the whole question of time, apprehended on the basis of the techno-logical problematic of artificial memory, always the memory of the human qua already-there. The already-there is the pre-given horizon of time, as the past that is mine but that I have nevertheless not lived, to which my sole access is through the traces left of that past. This means that there is no already-there, and therefore no relation to time, without artificial memory supports. The memory of the existence of the generations that preceded me, and without which I would be nothing, is bequeathed on such supports. This is the memory of past experience, of past epigeneses that are not lost, contrary to what occurs in a strictly biological species. The epiphylogenetic structure makes the already-there and its appropriation possible, as reappropriated expropriation, a maieutics of “exappropriation”: flint, the object of work and of the project of anticipation, is also what will keep the memory of this experience, of this epigenesis—time being the process of modification of the industrial stereotype, the repetitive anticipation of the stereotype being only the arch—form of this temporality, a form certainly embryonic and privative of anticipation, but nonetheless the only form in which anticipation is effected. A very embryonic temporality: the already-there of the Zinjanthropian perhaps comes down to this pebble that is clenched in his hand—and that is his poor world. But this is already no longer the poverty of the world of which Heidegger speaks in another context.

Neglecting the crucial nature of these questions, Leroi-Gourhan reintroduces the very metaphysical notion of Homo faber, in a movement that can be found again, for example, in Georges Bataille (1979), a notion opposed to that of Homo sapiens. This opposition between technic and intellect is, however, contradicted by the role given later to writing, as technics, in the constitution of thought.
The neurotechnological dimension indubitably present in the dynamic of the process should be studied as a particular aspect of a thoroughly singular apparatus of memorization, which neither classic zoology nor classic sociology is able to come to terms with, and in which one sees to what type of prosthetic supports of anticipation the given neurophysiological supports correspond, without overestimating or misunderstanding the importance of this question (as Leroi-Gourhan himself stresses elsewhere). Either the Zinjanthropian is nothing but a prehominid who cannot anticipate, that is, who is not in time and who in no case accomplishes its future since it has none, no more than does “the man of pure nature”; or else the human is human from the Zinjanthropian onward, in which case there is technico-intellectual intelligence as such in a single stroke. The latter means that there is anticipation in the full sense of the term, just as there is idiomatic differentiation (if not yet ethnic differentiation), and no longer simply species-specific differentiation (“individual intelligence” means nothing else than the possibility of such idiomatic differentiation).

Always and Again the Second Origin

The Neanderthalian skull is an expansion of anticipatory capacities. Extension or expansion of capacities here means: the increase in performances of foresight, in the efficiency of anticipation, and not “greater” anticipation, for access to anticipation is not quantifiable. Only efficiency is. Access to anticipation is access to the possible. The efficiency of access to the possible does not so much reside in the organization of the cortex itself as in this organization inasmuch as it is reflected in the flint mirror, opening it onto such efficiency, measured by Leroi-Gourhan in the centimeters of cutting edge obtained per kilo of flint.

Continuing at this Neanderthalian stage his description of the evolution of lithic industry, Leroi-Gourhan underscores a refinement of anticipatory possibilities, still linked to cortical becoming, and especially sensitive in the case of the Levalloiso-Mousterian prototype, for which “extraction of the point required at least six series of operations performed in strict sequence, each series being conditional upon the others and presupposing a rigorous plan” (Leroi-Gourhan 1993, 100). This foresight allows for a much greater exploitation of matter since the initial lump, for all its status as tool, becomes the source of tools (with the intermediary stages).
Clarifying here the relation between “technical intelligence” and the organization of the cerebral cortex, and adding that this Neanderthalian neurological equipment is, for technical intelligence, identical to our own, Leroi-Gourhan introduces his thesis of a “not strictly technical intelligence” and its correlate: a consciousness no longer “technical.” One wonders whence such a consciousness emerges, and what it means as an event in technological evolution understood as an essential process of exteriorization. Leroi-Gourhan himself is from the start critical of, as if to free himself from, the shortcuts that religious as well as rationalist thinking afford themselves to explain the emergence of “consciousness” (the miraculous artifice is just as suitable to rationalist determinism, which, *qua* teleology, places the human at the end of an ascension, and *qua* an anthropocentrism, leaves the central status of the human inexplicable and unexplained—even if it this status is no longer that of a creature made in God’s image but that of “life becoming conscious of itself,” or that of its “opposition to nature,” etc.). But what is Leroi-Gourhan’s strategy here? The issue is less that of criticizing the miracle thesis than that of showing the humanity of the human before religiosity, even if it is not the fully human (not a *Homo sapiens* but a *Homo faber*), and this is exactly what the miraculous solution enables theologians to avoid thinking, since they inscribe the criteria of humanity within religiosity. However, the question remains whether Leroi-Gourhan may not be satisfied here with a new artifice for the problem’s solution—precisely that of the opposition *faber/sapiens*, or *technics/spirituality*. For the second “passage” is at bottom that of access to this “nontechnical intelligence,” to which Leroi-Gourhan himself unreservedly subscribes, but which he then fails to question: everything he has been able to tell us by way of “an explanation” of technical intelligence brings no light to the question of the emergence of the so-called “nontechnical” intelligence. In the same stroke, an enigmatic second origin must have taken place. The whole purchase gained by the analysis of “exteriorization” for the understanding of the rise of the technical, which establishes that its rise is not the fruit of a creative intelligence, is lost again with the restoration of a nontechnical intelligence that is considered creative.

The critique of Rousseau consisted in saying that the human is not a spiritual miracle that would be added to a previously given body of the primate. Now, with the second origin, something is “added” to the technological: the *symbolic*, or the *faculty of symbolization*, without an under-
standing of its provenance. We know the origin of the technological supplement because it has no need of the spiritual, simply extending the evolutionary tendency by other means, following phyletic lines embedded in the deepest organizational transformations of vertebrates. The tendency will only pursue this extension beyond the second origin, without ever depending on what the origin adds to it. Without any relation, consequently, with technical intelligence, which derives finally and exclusively from the zoological movement—the spirit—the truly intellectual intelligence, “reflective intellectuality,” “not related to mere survival,” *freed from the instinct of conservation*. This is the real exteriorization, if one can thus express the actual exit from the profoundly *natural* movement that the technical tendency essentially remains:

[With] the Paleoanthropians . . . we witness the first upsurge of *new aptitudes of the brain* that both counterbalance and stimulate technicity. . . . The *reflective intelligence*, which not only grasps the *relationship between different phenomena* but is capable of *externalizing a symbolic representation* of that relationship, was the ultimate acquisition of the vertebrates. It cannot be conceived of before the anthropoid age. . . . This all happens, *on the plane of “gratuitous” intellectual operations*, as if the gradual development of the frontal and prefrontal areas entailed a *progressively growing faculty for symbolization*. (Leroi-Gourhan 1993, 107, my emphasis)

Rousseau went astray in thinking that technical exteriorization was an exit from the movement of pure nature, for in making tools, the man of pure nature adds nothing, or rather, he pursues a tendential movement of additions and new organizations which is that of pure nature. But as in Rousseau, in Leroi-Gourhan *Homo faber* is fundamentally only an animal. Technological organization only pursues the zoological work. The *veritable gap* is in the uprise of “gratuitous” reflective intelligence, of this “activity that surpasses technical motricity” and that frees itself of the zoological by avoiding the constraint of the pure instinct of conservation. There is a *technical reflexivity*, completely given over to survival behavior, and a *symbolic reflexivity*, purified of the *quasi-instinctive* useful finality governing technical evolution. It is clear that the spiritual only comes *after* the technical, just like the grave. How is such a great interval bridged? Here again, the leap corresponds to the acquisition of a new stage of cortical organization.

The hitch in such a logic is of the same nature as what Leroi-Gourhan
discovers in Rousseau. What the latter sees coming to be added to the physical was already there before the first origin: technical exteriorization was but the pursuit of the very movement of life. Now, exactly the same can be said on the subject of the “second origin”: there is no such origin because technical differentiation presupposes full-fledged anticipation, at once operative and dynamic, from the Australanthropian onward, and such anticipation can only be a relation to death, which means that symbolic intellectuality must equally be already there. Reflective intellectual- ity is not added to technical intelligence. It was already its ground. By taking on new forms, forms with which we are familiar, it only pursues itself in new prosthetic configurations (to the nature of which we shall return later). Certainly, the installation of this apparatus presupposes a “coming to fruition,” takes “time” just as the opening of the cortical fan did not take place in a day. What is important is to recognize the threshold from which anticipation and reflexivity deploy themselves, rather than to evaluate the “rate of fulfillment”: this threshold is beyond all doubt “exteriorization,” which must not be understood as a rupture with nature but rather as a new organization of life—life organizing the inorganic and organizing itself therein by that very fact. Nature must be understood differently, and the greatest vigilance with respect to oppositions is called for—even if—and nothing is more difficult—the contestation of oppositions must not eliminate the genetics of differences. How is the evolution of techniques to be imagined without a play, without a degree of latitude—a precise degree, however minute—in the general behavioral stereotypes that implement the instinct of conservation? Leroi-Gourhan himself said as much in conceding awkwardly that “individual intelligence . . . certainly plays some role” in the morphogenesis of stereotypes. A distinction should perhaps be made here between anticipation for survival and anticipation qua the production of difference, or qua the productive repetition of a divergence. There is certainly a kind of “privative” form of anticipation. But this is only possible to the extent that the possibility of an anticipation in the full sense of the term is already opened up (as productive of difference, as “différence differed and deferred,” as a rupture in life in general qua différence, but not with life), a possibility that is opened however minutely, in a darkness as black as one will, but that is already the possibility of a divergence and therefore something of a projection of a “symbolic” type rather than of a type of “survival behavior.” In this respect, the Rousseauist thematic of perfectibility, already
inscribing the aporia of the fall in the center of pure origin, was much more subtle than the reasoning of the anthropologist. And that Leroi-Gourhan thought he could leave it aside is all the more surprising given that in the second volume of *Gesture and Speech* he anticipates the pursuit of exteriorization as an actual derealization (for example, as a regress of the hand)\textsuperscript{5} and at the same time as an “exteriorization” of the “nervous system,” a projection initiated on the basis of an analysis of writing that, already at the end of volume one, totally linked the realization of reflexivity, *qua* rationality and philosophy, to the linear process of the (technical) recording of traces.

To clarify the meaning of “symbolic” is to introduce the question of mortality:

Archaeological evidence of such activity—which goes beyond technical motor function—... [is] the earliest of an aesthetic or religious character, [and] can be classified in two groups as reactions to death and reactions to shapes of an unusual or unexpected kind.\textsuperscript{6}

This unique and incontestable relation to death, through the body of the deceased itself, in which the incommensurability (of the body) of the other is manifested in its passage to the state of a corpse that cannot be left simply to decompose, *is linked by Leroi-Gourhan here again to a state of cortex development*. A few archaeological elements witness a symbolic activity, quite rare but incontestable, whereby the status of the last *Paleoanthropians* was “transitional... in what we regard as the sphere of human thought proper” (Leroi-Gourhan 1993, 112, my emphasis). These are the humans that “invite us to the opening of a new world, that of symbolic thought.” This new reference to cortical development, which offers no explanation but is given as a fact concealing that pre-sapian technical development, remaining completely determined by the zoological, remains itself and in the same stroke unexplained; this final state of cortex development opens “a new world,” which is also the opening of a language already our own.

**The Language of the Almost Human**

The prehominids (*Homo faber*) would not necessarily have had the feeling of death, yet it was immediately necessary to form the hypothesis that they could speak. They already speak, without anticipating, for all
that, their own end. They already speak, without, however, having access to the symbolism opposed to simple technical intelligence. This statement or affirmation is all the more strange since no language exists that is not already symbolic, as Leroi-Gourhan himself will say. He is strangely obliged here, at a moment when he has specified the nature of the second origin, to go back prior to it, to the age of the language of the “prehominids,” which he will limit to a simple *play of technical symbols.* As if a symbol could be “simply technical.”

The question of language is above all a question of the “neuromotor organization and the quality of cerebral projections. The answer to the problem of language does not lie in the mandible but in the brain” (Leroi-Gourhan 1993, 112). This returns to the question of the symbol, but in a different sense than previously. Against apparently everything that has been argued so far, developing, albeit in a perfectly provisional analysis, what he had already affirmed at the beginning, that is, “the hand frees speech,” Leroi-Gourhan now maintains that *there is symbolization with the advent of exteriorization* by repeating that there is language with the advent of technics, and therefore that technical activity and symbolic activity are indissociable:

*Humans . . . can make tools as well as symbols, both of which derive from the same process, or, rather, draw upon the same basic equipment in the brain.* This leads us back to conclude, not only that language is as characteristic of humans as are tools, but also that both are the expression of the same intrinsically human property. (Leroi-Gourhan 1993, 113, my emphasis)

This far-ranging affirmation is immediately challenged by what then follows: In what respect are these symbols not those of nontechnical intelligence? In the respect that the issue here is not “technical language.” There is a “technical language” just as there is a “technical intelligence” and a “technical consciousness”: “technical progress has gone hand in hand with progress in the development of technical language symbols” (Leroi-Gourhan 1993, 114). This “organic link” between equipment and language “appears to be strong enough to justify crediting the Australopithecinae and the Archanthropians with language at a level corresponding to that of their tools” (114), and to their technical intelligence, which is in no way dependent on the existence of a “nontechnical intelligence.” In short, language is the product of the zoological evolution of forms. Now, just as anticipation, relation to the future, is immediately relation to all
future, to the possible *qua* the in-finity of possibility, is not language immediately all language—and perhaps the fruit of an intelligence belonging to what Leroi-Gourhan calls reflective intellectuality, “spirituality”?

What do expressions such as “technical language symbols” mean; to what extent do they not necessarily call for (or not themselves consist in) “nontechnical” symbols? For Leroi-Gourhan, this means: a language that would only express concrete situations (a fable very close to the ideas developed by Rousseau in his *Essay on the Origin of Language*, and more generally, by most philosophical genetic accounts of language). But we know, furthermore, and have known for quite some time, that there is language only when it is constituted by signs that are not simply signals, as Leroi-Gourhan will concede. Now a sign that is not a signal is a symbol designating a generality, a conceptual class, always already an “abstraction,” and not a unique and singular referent—for in that case there would have to be as many signs as there are realities to designate; we would have an infinity of signs; and there would simply no longer be this general and abstract economy in which language consists and which allows it to name, in an indefinite combination of a finite ensemble of signs, an infinite reality. All language, being essentially finite and able nevertheless to account for an a priori indefinite and *quasi*-infinite reality, is necessarily and immediately the implementation of a process of abstraction and generalization. A “concrete language” is therefore a contradictory concept. What is more, Leroi-Gourhan’s very remarks tend toward this conclusion. Such a process (the appearance of language) is only possible, once again, from the advent of a capacity of anticipation, which is also the capacity of putting-in-reserve, of memorization *qua* the possibility of being affected by a *past that lasts*—and this is why the word, like the tool, “is preserved to be used on later occasions”:

The operations involved in making a tool anticipate the occasions for its use and... the tool is preserved to be used on later occasions. The same is true of the difference between signal and word, the permanence of a concept being comparable to that of a tool although its nature is not the same. (Leroi-Gourhan 1993, 114)

“The material situation triggering” (114) the behavior of the great apes, precisely because it remains in essence and for all time “concrete,” immune from the attack of distension, is never susceptible in any way of giving rise to language or technics, which would suppose an originary en-
try into “abstraction,” into the apprehension of a generality, again, however minute it may be: the simple fact that a word lasts, and serves for the designation of different concrete situations while remaining the same word, means that all words are immediately generalizations. (Like all concern qua the horizon of utensility, all enunciation presupposes an already-there that is also and always a still-there.) Now, how are these analyses to be reconciled with the hypothesis of two stages in archaic language, one that only expresses “concrete situations” and is thus found stymied on the threshold of access to generality and to abstraction, and the other, with the Neanderthalians, in which “the exteriorization of non-concrete symbols took place”? When the splintering of the unity of the human appeared qua the consequence of exteriorization, we understood that the definition of the human was not in the unity of its originary “interiority” but in the work of the outside as a process of differentiation. Now it turns out that for Leroi-Gourhan this also, indeed above all, meant that there is a “prehominid” humanity that is not a full-fledged humanity: an almost human humanity in opposition to which the unity of present-day humanity can be described qua a spiritual being.

The relation between technics and language is established with the concept of operating sequence, on the use of which the following passage, reviewing the entire hypothesis, must be quoted in extenso:

Technics involves both gestures and tools, sequentially organized by means of a “syntax” that imparts both fixity and flexibility to the series of operations involved. This operating sequence is suggested by memory and comes into being as a product of the brain and the physical environment. If we pursue the parallel with language, we find a similar process taking place. On the basis of what we know of techniques from pebble culture to Acheulean industry, we could adopt the hypothesis of a language whose complexity and wealth of concept corresponded approximately to the level of those techniques. The language of Zinjanthropus, with his single series of technical actions and small number of operating sequences, would then have had a complexity and wealth of symbols scarcely greater than that of the gorilla’s vocal signals, but, unlike the latter, it would have been composed of already available and not totally determined symbols. The operating sequences of the Archanthropians with their doubles series of actions and their five or six different tool forms were already much more complex, and the language we may credit them with was considerably richer, though probably still limited to expressing concrete situations. . . . The exteriorization of nonconcrete symbols took place with the Neanderthalians, and technical concepts were thenceforth overtaken by
concepts of which we have only manual operating evidence—burial, dyes, curious objects. This evidence, however, is sufficient to establish with certainty that thought was being applied to areas beyond that of purely vital technical motor function. (Leroi-Gourhan 1993, 114–15, my emphasis)

Is it possible to say simultaneously that there are available but not totally determined symbols and that they are linked to the expression of concrete situations? This would be to maintain the contradiction that there is first the possibility of generalization (of indetermination), and that this generalization is not a generalization, since it remains caught in a particularity opposed to the generality. Now, either this particularity is determined as particular against a horizon of generality, against the backdrop of which it outlines itself—and in this case the generality is already there and language is already general—or else there is simply no expression, no situation nor any particularity. Expression is the possibility of generalization, that is, of anticipation qua intellectualization. The symbol is always already an “intellectual,” “general” symbol, and never simply the “technical symbol” of a merely technical language—and it is always with such adverbs that thought deals offhandedly with its limits. Moreover, all operating sequences, qua combinatories, already presuppose such a possibility.

This new opposition between technical and concrete language, on the one hand, and nontechnical language in general, on the other, is parallel to the idea of restrained anticipation that governed the above analysis of tool fabrication and its evolution, as well as to the resulting opposition between technical and reflective intelligence and spiritual and individual intelligence. All of this being perfectly coherent, but, as with Rousseau, under the sway of “almost” and of “merely,” is articulated around the idea that with the Neanderthalians a qualitative threshold is crossed, a second origin is stamped, and the origin of this origin is merely cortical. But this explains almost nothing, indeed nothing at all.

With the advent of the second origin, there would be a direct link between spiritual symbolization qua the possibility of generalization and inhumation. This symbol, constituted in the relation to death, will also be the emergence of purely cultural differentiation. The point in opposing Homo sapiens and Homo faber is to show that paltry prehominid language does not yet contain the possibility of idiomatic differentiation, while the “Neanderthalians’ language probably differed only slightly from language as we know it today” (Leroi-Gourhan 1993, 115). If one postulates the
nonabstraction of prehominid language as attached to the concreteness of situations, its indifferntiation is lost in the same move. Such a language, not being produced as a process of individuation, is without play or latitude, without any possibility of signification: it is a mute language; it says nothing. It is similar to those tools that would be put to no use, for the use of tools is already essentially the variation of possible usage of the tools, and unquestionably an element of differentiation of the tools themselves. The idiomacity of language and the evolutilonal dynamic of tools at the second level of anticipation derive from the same possibility—the very possibility that Leroi-Gourhan refuses to accord the “prehominids.” But this totally contradicts what Gesture and Speech will establish in its second volume.

Memories of the Rupture

Only when the following has been granted can instinct and intelligence be differentiated:

The problem of grouping would dominate the question of what is animal and what is human. Society, whether animal or human, would be seen as maintained within a body of “traditions” whose basis is neither instinctive nor intellectual but, to varying degrees, zoological and sociological at one and the same time. (Leroi-Gourhan 1993, 221)

This means that the rupture in which exteriorization consists must be understood as the emergence of a new organization of memory, as the appearance of new memory supports:

If it is true to say that the species is the characteristic form of animal grouping and the ethnic group of human grouping, then a particular form of memory must correspond to each body of traditions. (221)

It is by freeing itself from genetic inscription that memory at once pursues the process of liberation and inscribes thereupon the mark of a rupture—on stones, walls, books, machines, madeleines, and all forms of supports, from the tattooed body itself to instrumentalized genetic memories, dis-organized, made inert [inertiﬁées] as it were, then reorganized, manipulated, stored, rationalized, and exploited by the life industries named “biotechnologies,” including the holographic memories that the information-processing industry is planning. An inscription of memory through
rupture, the inscription of the rupture in memory. The rupture is but the memory of the rupture, is but the effects of the traces it engenders.

A question of memories combining themselves with programs, modes of programming:

What is at issue . . . is not the contrast between instinct and intelligence but only the opposition of two modes of programming, one of which {—the insect mode—} involves a maximum of genetic predetermination and the other—the human mode—apparently none at all. (Leroi-Gourhan 1993, 222)

From this it must not be understood that programmatic would be determining for the animal while exteriorization would issue in the suspension, as well as the indetermination, of programs. If the theme of indetermination returns here, it is under the condition of a new “mode of programming.” For it to be understood, three types of nonhuman living beings must be distinguished, whence, from type to type, extended possibilities of choice appear: the ant “chooses” more than the worm; the vertebrate “chooses” more than the ant. In each case, a superior level is set up while an identical behavioral ground is conserved at the inferior level, and above all, in each of these cases the possibilities of “choice” are not truly choices: they are genetic selections of possible responses inscribed in the patrimony as virtual memory, and actualized in individuals as phenotypic imprints bringing on the encounter of somatic plasticity with the actual vital milieu. From the worm to the vertebrate a certain “latitude of maneuver” of memory comes to the fore, witnessed by possibilities of conditioning and training. An individual memory is then constituted, registering past “experience” (the adaptation of the individual), overdetermined by the nonspecific [unrelated to species] hereditary genetic capital responsible for the irregular efficiency of the various lineages of a species, the whole being subjected to the pressure of natural selection. This mnemo-instinctive apparatus exists in humans to the extent that the human is also animal, and “a significant part of human activity is instinctual” (Leroi-Gourhan 1993, 224).

On the backdrop of this instinctive layer, the first constitutive layer of humanity, one must distinguish intelligence, which presupposes the existence of language at two superior levels. These three levels are the

species-related, socioethnic, and individual. At the species-related level, human technical intelligence is connected with the degree of development of
the nervous system and the genetic programming of individual aptitudes.

At the socioethnic level, human intelligence behaves in a wholly particular
and unique manner in that, transcending both individual and species-related
limits, it creates a collective organism with astonishingly rapid evolitional
properties. For the individual, the degree of socioethnic constraint is as im-
perative as the zoological constraint that causes one to be born *Homo sapiens*,
but the terms of the former are different from those of the latter to the ex-
tent that, under certain conditions, they admit of the possibility of a certain
degree of individual liberation.

At the individual level, the human species is equally unique because, hav-
ing received from the human cerebral apparatus the ability to compare be-
tween situations translated into symbols, the individual is capable of freeing
him or herself symbolically from both genetic and socioethnic bonds. (Leroi-
Gourhan 1993, 227)

These three layers inseparably form the ground of memories from
which the “technical behavior of humans” becomes possible. Yet here a
certain ambiguity remains: if the second level undoubtedly and directly
concerns the technical possibilities of the human, this is less evident for
the third, which seems to target mainly symbolic activity. If it is granted
that the true symbol is spiritual, and if the question here concerns only
the symbol (the second origin), the third level will no longer concern
symbolic activity proper. The issue, on the contrary, is symbolic activity,
insofar as it accompanies technical activity from the very beginning:
“technics and language being two aspects of the same property” (the
process of exteriorization) (114). This individual level will therefore be-
come that of differentiation in general—of the symbol as well as of tools,
which moreover does not presuppose a creative consciousness, for no lin-
guist has ever denied that speech is engendered at the individual level of
diachronic-idiomatic variation, nor ever contested the Saussurian affir-
mation that the diachronico-idiomatic drift of languages escapes the will
of individuals effecting it.

The “socioethnic” constraints are for the human grouping (the ethnic
group) this new “modality of programming,” constituting *qua* program
something of a social analog of the genetic constraints of the animal
grouping (the species)—but only an analogue, for whereas the animal is
not able to free itself from genetic constraints, the human individual,
with regard to socioethnic constraints, constantly can, although only up
to a certain point. This modality of programming of, and by, memory,
the consequence of the passage from liberation to exteriorization, concretizes its new possibilities at the individual level, reinserting them, when they are totally realized, into the socioethnic level. The ensemble of the process, which describes idiomatic differentiation, derives from anticipation, and it is in the exappropriation of the relation between ethnic constraints and their idiomatic appropriation—being also the more or less slow transformation of the rules in which they consist—that the evolution of ethnic cultures and their differentiation are effected. “Rapid and continuous evolution could apparently be achieved only by breaking the link between species and memory, an exclusively human solution” (Leroi-Gourhan 1993, 228). After exteriorization, the process of differentiation then undergoes an essential shift from the level of the species to that of the individual, who is undetermined in its behavioral possibilities, if not in its zoological limits and in the already-there of the world in which it lives, from which it inherits, to which it must answer, and which it appropriates by altering it:

Individuals at birth are faced with a body of traditions that belong to their ethnic group; a dialogue takes place, from childhood, between the individual and the social organism. Tradition is as biologically indispensible to the human species as genetic conditioning is to insect societies. Ethnic survival relies on routine; the dialogue taking place produces a balance between routine and progress, routine symbolizing the capital required for the group’s survival and progress the input of individual innovations toward a better survival. (Leroi-Gourhan 1993, 228–29)

What is tradition’s situation today? If it is essential to survival, how shall we survive? Must new forms of “tradition” be thought up?

Idiomatic Indifference

The question is time, becoming qua the bringing into play of the non-programmed, the im-probable, and destiny qua nonpredestination. The temporality of the human, which marks it off among the other living beings, presupposes exteriorization and prostheticity: there is time only because memory is “artificial,” becoming constituted as already-there since [from the point of: depuis] its “having been placed outside of the species.” And this “since” must be taken literally: inheriting the name “human” is inheriting the entire past already there, everything that has taken place,
since the “appallingly ancient.” This is where two “origins” are marked, where a division is inscribed between two “coups”: the “Zinjanthropian” and the “Neanderthal.” With the second “coup,” according to Leroi-Gourhan, society makes its appearance:

From the moment of the disappearance of the prefrontal ridge, a characteristically human evolution led to the birth of a technical world that drew its resources outside the confines of genetic evolution. From the emergence of *Homo sapiens*, the constitution of an apparatus of social memory dominates all problems of human evolution. (1993, 229)

What are our objections to all this? On the whole, nothing. Everything, if the problem is posed in terms of anticipation. There is anticipation from the Zinjanthropian onward, even if the latter is only realized under conditions of cerebral incompleteness: there is already confrontation or reflection, but in such technical and cerebral conditions as remain today profoundly alien to us—and it is the very strangeness of the reflexivity that is here given over to be experienced. In theory the progress of the cortical fan excludes neither that archaic technical evolution already supposes the exteriorization of memory—in the tool itself, but also in language—nor that it supposes an already generalizing symbolization, full-fledged anticipation, albeit in a mode essentially veiled for us. The opposition between technical and nontechnical intelligence is practical for descriptive purposes, but superficial. Contrary to what is proposed here by Leroi-Gourhan, for whom society is established only at the end of corticalization, the human is social from the moment of the Zinjanthropian, even if this socialization does not present the forms with which we are familiar. It is indeed from the Zinjanthropian onward that “the placing-outside of the zoological species of ethnic memory” takes place. If this were not the case, nothing would be understandable, and all the initial hypotheses would have to be given up in a return to Rousseau.

The power of these hypotheses resides in the relations they establish between the skeleton, the brain, and tools. Their limit is in not allowing the intellectual to be thought—and therefore the process of sociotechnical differentiation in general, as being itself as well the direct product of exteriorization. Leroi-Gourhan, moreover, contests this bipartition in the last passage we shall quote. Having established that the Neanthropian stage is that of the development of prefrontal areas—the prefrontal cortex appears as “one of the principal elements of individual personality, and
most neurologists believe that it plays a predominant role in controlling operations and in the powers of foresight and lucid consciousness”—he adds that concerning “the role of the prefrontal cortex as an instrument of affective regulation, before [it] was achieved, there could be no question of intelligence or thought in the fully human sense,” which can only mean: such as we know it. Indeed,

some development of the prefrontal areas may no doubt have occurred even in the most primitive Anthropians. . . . In accepting the postulate that in the case of the Australanthropians and Archanthropians, the development of techniques more or less kept pace with that of the skull, we allowed for the possibility of individual creative intelligence manifesting itself. (Leroi-Gourhan 1993, 131)

In truth, this “role of individual intelligence” has remained essentially overlooked, it has never been thoroughly “taken account of,” and the question remains inadequately posed in this form: the issue is less intelligence than anticipation. Individual intelligence is not the essential question. On the basis of these specifications, which blur a too distinct boundary between the different stages of the archaic human, Leroi-Gourhan introduces his major thesis on the last stage—the preponderant role played by society: “The fact that emerges most clearly, once the freeing of the forebrain has taken place, is the importance assumed by the social group as opposed to the zoological species” (Leroi-Gourhan 1993, 131). Must this mean that society was not there before? Certainly not. That there is a dynamic in which preponderances shift is obvious. But that boundaries should be marked off in this dynamic is less satisfactory. Everything is there in a single stroke. Everything is differentiated in one coup, together. It is the inorganic organization of memory that constitutes the essential element, the first coup, engendering all the others and being transformed in transforming all the others in its wake. In this complex, the brain has in fact only a secondary role, in no case a preponderant one. It is one of the instances involved in the total transformation of the landscape in which the organization of the inorganic consists. It is that transformation’s organic consequence. But not its cause. Furthermore, the issue is one not of a cause but of a coup, whose dynamic development is marked simultaneously on tools, on the cortex, on the group, and on the territories that it impregnates, occupies, or cuts across. Depending on whether one sees the boundaries or decodes the slow, mixed,
apparently contradictory movements, stratified tendencies penetrating into one another, one's observations split into divergent paths.

Once corticalization is achieved, technical differentiation will totally depend upon social differentiation, and no longer on zoological differentiation at all—although its movement of development and differentiation is pursued as if it were a matter of zoological drift, since its evolution remains phylogenetic in appearance, idiomatically totally indifferent. But, in truth, technical differentiation was already social, temporal, and generalizing before the end of corticalization.

We meet once again with all of Rousseau's arguments: before, there would have been no or practically no reason (spiritual intelligence), no language (spiritual symbols), no society (ethnic groupings)—all of the attributes by which philosophy had hitherto identified humanity. Everything comes afterward, through the fall, from the coup bridging so great an interval.

The Already-There, Différence, Epiphylogogenesis

To question the birth of the human is to question the birth of death, as we said at the beginning. Let us see again why by recapitulating.

At issue was thinking the “invention of the human” by setting ourselves in the very ambiguity of this expression, and thereby beginning a reflection on the concept of différence: différence is the history of life in general, in which an articulation is produced (where art, artifice, the article of the name, and the article of death resonate), which is a stage of différence, and which had to be specified. The rupture is the passage from a genetic différence to a nongenetic différence, a “physis differing and deferring.” In order to approach the question of time as it has been set up, we anticipated the development of a concept, that of epiphylogogenesis.

The “paradox of exteriorization” led us to say that the human and the tool invent each other, that there is something like a technical maieutics. Consequently, the vector of epiphylogenetics, at the dawn of hominization, is flint. The process of corticalization is achieved as a process of reflection upon this conservation of experience, upon this constitution of the past that the flint is qua the registering of what has come to pass, a conservation that is itself already, qua trace, a reflection.

The aporias that the question of anticipation open up are the very ones that constitute the paradox of exteriorization: a delay that is also an ad-
vance, the structure of the *après-coup* in which it can never be determined whether the cortex makes the flint possible or the reverse. The interior should precede the exterior, but in fact it is constituted by the latter, which therefore precedes it. Unless they are said to precede each other, to be the same thing considered from two different but already derived points of view. We are left then with the question of movement, whatever point of view is taken on the subject (at once exterior-ization and interior-ization): its provenance and its principle.

We have encountered the need to distinguish two levels in the understanding of anticipation: operative anticipation, and anticipation *qua* the differentiation of stereotypes as well as of the very form of anticipation. It is at the second level, always already implied in the first, that the question of movement arises: it is a matter of knowing the provenance of differentiation. From the Zinjanthropian to the Neanderthal, cortex and tools are differentiated together, in one and the same movement. It is a question of a singular process of structural coupling in “exteriorization,” an instrumental maieutics, a “mirror proto-stage” in which the differentiation of the cortex is determined by the tool as much as that of the tool by the cortex, a mirror effect in which one, informing itself of the other, is both seen and deformed in the process, and is thus transformed. It is straightaway this couple that forms the original dynamic in a transductive relation.

The question remains whether there is an acceptable biological explanation of such a phenomenon. We must put forward here the hypothesis of an absolutely new genetic process of selection. Far from being simply determined by cortex evolution, the evolution of knapped flint determines in turn the process of corticalization. Such a hypothesis involves an attempt at elaborating a concept of artificial selection: the selection of mutations exerted at the cortical level in the context of a relation to the original milieu, mediated by the technical apparatus constituting the system of defense and predation and informing simultaneously the process of individual adaptation and the evolution of the entire species, which does not imply a heredity of acquired characteristics, even if that illusion ensues.

The point is to focus on the originality of the epigenetic process that is put in place from the moment of the appearance of tools, insofar as they are conserved in their form beyond the individuals producing or using them. (The appearance of these tools, an actual nonliving yet vital
memory, organized but inorganic matter, supposes, *qua* the vector and accumulator of past epigeneses, a singular epigenetic plasticity of the cerebral structure.) In nonartificial life, nontechnical, nonarticulated by the différance of différance, all summation of epigenetic events is lost for specific memory with the loss of the individual who was their support. In the case at hand, life conserves and accumulates these events. This conservation determines the relation to the milieu and the whole process of selection of mutations, notably those taking place at the cortical level. Consequently, the hypothesis can be formulated that here, in apparent contradiction of the laws of molecular biology, *epigenesis exerts a powerful countereffect on the reproduction of the species, channeling or conditioning an essential part of the drive of selection.* In this case, the individual develops out of three memories: genetic memory; memory of the central nervous system (epigenetic); and techno-logical memory (language and technics are here amalgamated in the process of exteriorization).

The stereotype is as much the result as the condition of its production, both the support of the memory of operational sequences that produces it, conserving the trace of past epigenetic events that accumulate as lessons of experience, and the result of the transmission of these operational sequences by the very existence of the product as an archetype. Such is epiphylogenesis. Three types of memory should thus be distinguished, to clarify while slightly modifying Leroi-Gourhan's hypothesis of the three layers. The three types are genetic memory, epigenetic memory, and epiphylogenetic memory.

Epiphylogenesis, a recapitulating, dynamic, and morphogenetic (*phylogenetic*) accumulation of individual experience (*epi*), designates the appearance of a new relation between the organism and its environment, which is also a new state of matter. If the individual is organic organized matter, then its relation to its environment (to matter in general, organic or inorganic), when it is a question of a *who*, is mediated by the organized but inorganic matter of the *organon*, the tool with its instructive role (its role *qua* instrument), the *what*. It is in this sense that the *what* invents the *who* just as much as it is invented by it.

The *Who* and the *What*

The genetic/epigenetic relation is a dimension of différance *qua* the history of life. The question then is that of a specification of différance
differing and deferred, of the possibility of such specification, if it is true that Leroi-Gourhan's major point consists in putting into question a clear break between the animal and the human. His way of broaching this problem brings him back, in the final analysis, to the heart of a simple opposition, albeit one shifted to the also quite traditional level of *faber/sapiens*. He is brought back in the same stroke (the coup of the second origin) to the metaphysics of an opposition between the inside and the outside, the before and the after, of the animal human and the spiritual human, and so on. We are trying to preserve and to broach the aporetic impossibility of simply opposing the interior to the exterior in speaking of an instrumental maieutics that alone permits an understanding of how tools do not derive from a creation or from a consciousness present to itself, master of matter, but pursue a process engaged long before the rupture yet nevertheless constitute a rupture—a new organization of difféance, a différence of difféance. Now, if the central concept is in fact that of epiphylogenetic memory, allowing for both the *contestation of oppositions* and the *description and preservation of differentiations*, it does not seem to us to have any equivalent in grammatological deconstructions. We shall develop this question further on the level of linear writing. Without such a concept, it seems to us impossible to specify the difféance, differing and deferring, with respect to difféance in general *qua* the history of life in general, or to say what the human is or is not. We are left with the ambiguity of the invention of the human, that is, of the subject of the verb "to invent," that which holds together the *who* and the *what*, as being that which binds them while separating them; this is, then, difféance—this double movement, this intersection of reflection, this reflecting whereby the *who* and the *what* are constituted as the *twin faces of the same phenomenon*.

Leroi-Gourhan misses the thematic of difference and deferral by opposing technical intelligence (*qua* the process of restrained anticipation) to the symbolic or "faculty of symbolization" *qua* the fruit of an intelligence "of a nature not related to mere survival," consisting in the complete emancipation from still quasi-instinctive finalities that corresponds to the movement of technics and that is an opening onto the feeling of death. In the same stroke, this coup of the second origin will have allowed the analysis of a new "différential" dynamic to be avoided. This dynamic, in place since the Zinjanthropian, sees the opening of the feeling of death linked to a state of (late) cortex development. And in the
same stroke, this opening is also that of a language already our own. Now, this question of language derives entirely from the “epiphylogenetic” level. There never was a “concrete language”; to express a situation is always to abstract it. The incoherent “nonabstraction” of “prehominid” language is nevertheless coherent with the incoherent idea that it does not express the slightest possibility of idiomatic differentiation (resulting from the point of view developed on all pre-Neanderthalian tools). But at the beginning of the second part of Gesture and Speech, the exteriorization of memory (the “transfer of ethnic memory outside the zoological species”) implies an idiomatic “dialectic”—whereby “rapid and continuous evolution could apparently be achieved only by breaking the link between species and memory (an exclusively human solution),” a “dialogical” exchange between the individual and society (1993, 228). This analysis may, setting aside certain shifts, however essential they may be, bring us back to the Heideggerian problematic of time.

The questions posed by our reflection on technics and on its dynamic in the paleoanthropological domain in fact spring up again directly into the existential analytic (of “being-for-the-end”)—and into all philosophy. Up to a certain point, it is with a similar gesture that Leroi-Gourhan separates and finally opposes, on the one hand, technicity, and on the other, the relation to death and thus “reflective” intelligence, while Heidegger opposes the time of calculation (the inauthentic time of measurement, the attempt to “determine the undetermined”) and authentic time as relation to death. Starting with the critical analysis of the material proposed by Leroi-Gourhan, we can conversely imagine an existential analytic of time, an analytic of the temporal being that is Dasein, of the who that would be an analytic of the prostheticity whereby he exists and becomes embodied—of prostheticity qua being his already-there, or of his already-there qua being essentially prosthetic (accidental), never manifesting itself other than as a what—and that opens up its relation to time, far from being its denaturalization. Of this analysis, one could say that it is Heidegger’s own, under the name of facticity. However, we shall show in the next section that this is not the case.