

# Does Man Have a Place in Nature?

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Throughout the twentieth century, social anthropology has given the impression of being a science that is eternally in the throes of birth, all the while wondering whether it has the right to exist. As it has taken root, developed, and subdivided, it has become increasingly doubt-ridden. Today this self-doubt seems to have reached critical proportions: it is difficult to see how this discipline can continue to emphasize its schizophrenia without completely falling apart. Researchers who wish to sustain a belief in the potential scientific vocation of anthropology feel obliged to seek assistance from the outside; for this help they look to the thermodynamics of heat, the selfish gene, or the newly-formed coalition of "cognitive sciences" (which combines the traditionally attractive capabilities of formal logic, psychophysiology, neurology, and so forth). Such researchers prefer second-hand knowledge to ephemeral knowledge. As for anthropologists who seek to preserve the professional autonomy of their practice at any cost, most of them believe that the only way to do that is to abdicate: to hell with the mirage of objectivity, down with laws, and long live the "text"!<sup>1</sup>

## **The Freedom of History Versus the Constraints of Evolution**

Among the constant factors of this instability, the densely interwoven network of problems relating to evolution constitutes in several respects a central nexus of singularly sensitive pressure points. A crux for the discipline's internal convulsions, it also acts as their chronic amplifier, and it behooves us to ask both to what extent it determines these paroxysms and to what extent hopes for

establishing the scientific status of anthropology depend on it. Human evolution is first of all a zoological evolution, well and good. It nevertheless remains a strange process that progressively disperses biological traits and brings them into opposition with one another as if to recant: with the approach of what we call "modern" man, all the obviously natural features of the past evince a troubling or ambiguous twist. Considered separately, these threads of Ariadne never gainsay their solidarity with ancient times, but to trace the path travelled by each of these snatches of animality is systematically to discover a radically transformed context.

Almost inevitably, the scientist who thus traces the slow history of a biological constant in the human species (such as the avoidance of incest or competition among males) has a sense of having chosen one of the rare traits that resists the human tendency to escape the zoological domain (this resistance sheds light on a natural law, perhaps even *the* law, which culture cannot infringe). In fact, of course, the personal intuition that settles on the particular Ariadne's thread to trace does not abandon the researcher's frame of mind and tends to reinforce his conviction of having chosen the right solution. Symmetrically, a researcher who launches his reflection from an area in which the human being breaks dramatically with the animal (such as the symbolic faculties, language, and so on) is inclined to note that he has taken up the tool that is necessary in order to refute the continuities, since experience will soon teach him that none of the arrows that nature lets fly succeed in circumventing the shield he holds up. Relativism would interpret this double assertion as the best index of the irrevocable subjectivity of interpretations, but the avowed fatalism relies on nothing more than laziness vis-à-vis methodological difficulties: the passivity of contemplation will never be a substitute for the activity of observation, whatever the inefficiencies or imperfections of the latter.

In practice, the duel between the supreme legislation of evolution and the rebellious force of history is never all-consuming: it resembles a never-ending game in which the "legitimists" seem to be throwing a multitude of lassoes in the direction of culture in an attempt to tether it to nature again, with the "mutinists" simulta-

neously at pains to cut through these same ropes. On the one hand we have guidelines obscured by the fog of contingencies, on the other peremptory counter-examples to which are sometimes added explanations that seem to have fallen from the sky. The game is never-ending because it is repetitive, and it is repetitive because the rules do not change. How could they, when the score is always a draw? The opposing sides reassure each other by obliterating thought through their very opposition. Marshall Sahlins, when he replied to Marvin Harris that the Aztecs were cannibals not because they craved protein but rather because they hankered after symbols, or when he turned on its head the hypothesis that aggression regulates social conflict in order to assert that social conflict regulates aggression, essentially reproduced the attitude typified by Marcel Mauss in 1905 when he countered the arguments of German anthropogeography on climatic constraints: having shown that cold could not account for the seasonal modifications in Eskimo social organization, he drew the conclusion that human beings have a need for periodic change in their way of life.<sup>2</sup> Except that, when reason draws the conflict out by ringing endless changes, instead of using its gains to transform the conditions of debate, this means that contradiction has beaten it to the punch and imprisoned it.

Mauss and Sahlins commit the same error as countless opponents of reductionism: against an ill-conceived cause they set counter-proposition of the same ilk, and thus condemn themselves to asserting another ill-conceived cause. In other words, they pass directly from deftly refuting a deceptive argument to "re-establishing" the truth on the turf demarcated by, and for, this erroneous argument. Onto his criticism of geographical determinism, Mauss grafts a vision that is unrelated to the problem as initially posed. With Sahlins, the procedure is even more salient: it is impossible to count the trenchant phrases in which he is content to toss off causality like a tennis ball lobbed over the net. The result is that he leaves himself open to counter-examples that are as formidable as the ones he presents. For once, popular wisdom is not wrong: an idiotic question deserves an idiotic answer. Unfortunately, his unflinching good sense leaves only two ways out of this dualism: "the truth is somewhere in the middle" and "the

truth is beyond our grasp"; the oscillation between the two stock refrains more or less protects either one from being over-used, while buying time until the polemic subsides. No one is unaware that at this time, relativism is swinging the pendulum markedly toward the second alternative by diluting the truth of the belief or by signing the death warrant of causality.

However, in incriminating Mauss and Sahlins, we are citing two pre-eminent figures in social anthropology, with both the advantage of guaranteeing that the problem raised will be deemed important (if the criticism is validated) and the disadvantage of provoking legitimate suspicions as to our own credibility. That two authors who are quite properly admired for the subtlety and force of their reflections were unable to resist certain illusions of their time is not surprising in itself. But that they took the initiative to place what can only be called a crude error at the core of their enterprise: this is what appears shocking. Why such haste to question the cause, and so little inclination to challenge the question itself? At the very least, an explanation of their choice would be welcome.

In fact, such an explanation emerges in the first sentence of this text. The birth of social anthropology is a difficult one because the field is not able to combine two embryonic aspirations that are as indissociable as they are opposed: comparing societies and isolating the universal bases of the human condition. These ambitions do not, however, occupy the same position in terms of practice, and still less in terms of motivations. Not only are those who compare societies generally persuaded that their research will lead them to the discovery of common human bases, but many of these researchers are pursuing this line with the discovery of universals as their sole aim. Confronted by the notion that the significant human universality is located outside the social (in soil, climate, synapses, genes, or proteins), Mauss and Sahlins react as anthropologists rather than as sociologists: their enterprise prefers to justify itself with reference to one anthropological theory as opposed to a concurrent theory, and in the end neglects to defend a discipline against unwelcome incursions (by ethology, for example) or against poorly negotiated alliances (as with geology or ecology). Refuting arguments and revealing crucial methodological incom-

petence would have sufficed for representatives of the social sciences, but not for leaders with an anthropological calling.

Especially in the light of a sociobiology that is rightfully reproached for inscribing its theoretical finality (the imperious ego of the gene) in its emergence as a "discipline," we should be worried about an anthropology that likewise doubts its own existence because it has not been able to pin down the social universality it dreams of (or because it has not obtained unanimity on this question). On the one hand, we have a science that trumpets its birth announcement by claiming to have all of its conclusions ready and waiting; on the other, we have a science that hesitates to affirm its own substance because it has not located its culmination. This is tantamount to saying that, on the one hand, an ideology has infiltrated science, whereas on the other, a science has not cut the umbilical cord that ties it to a "prescientific" ideology. Mauss, Sahlins, and a host of theoreticians who are hostile to reductionism have devoted more energy to fanning the flames of their opposing ideas than to confronting their professional experience head-on: faced with theses about mankind that toppled effortlessly when exposed to the light of sociological observation, they sought to turn the discussion back upon mankind and not to allow the competition a monopoly on interpreting the human condition. As a result, having exceeded the bounds of their own science, they rehabilitated the transgression in the opposite direction and thus relativized the effectiveness of their own denials.

Ideology will always be better than science at speaking vaguely, and science experiences its worst defeats when it does not assume the duty to express itself within established limits. Spencer's notion of the survival of the fittest knows no bounds (since it is actually just a tautology), but the Darwinian concept of natural selection is a productive tool in that it is not realized outside a segment of nature, localized in space and time: an organism is fit only within a certain milieu that the members of its species occupy in a certain way. That the two ideas have long been treated as interchangeable underlines the susceptibility of scholars to seduction by "social Darwinism," which held out the promise of infinite extensibility of their conclusions.

For a researcher confronted with a domain that is something of a catch-all, the difficulty does not lie in discovering a cause; causes are a dime a dozen. The problem is one of taking inventory, sorting, and weighing the causes to be envisioned on a question that must constantly be reformulated and adjusted. Of course cold exerts an influence upon Arctic societies. Of course the male who kills his rivals, captures their females, and destroys the children of his defeated enemies is thereby aiding in the diffusion of his genes. And the Aztec aristocracy did indeed benefit from the additional animal proteins obtained through cannibalism, which gave them a certain advantage over the people. What would be the point in denying these claims? Culturalism suffers from a strange lack of self-respect when it sounds the alarm and rallies all the forces of culture at the approach of these ragtag "causes." This over-reaction is like killing a mosquito with a cannon; but Clausewitz would no doubt observe that the confusion generated by the call to arms is turned to advantage by designating a leader to muster the ranks in order to repel the invader: for Sahlins, the honor falls to man's symbolic faculty.

Still, this dragooning robs culture of its essential power as the discipline that, in the daily litany of anthropologists, is given to nuancing solidarities, interweaving systems, and transforming the strictest categories into sieves. In reality, whatever natural cause it encounters, culture does not present just one rival, however towering; rather, culture submerges the natural cause in a gigantic fluctuating mass of causes that may interact, join forces, or oppose one another. And this applies equally to nature confronting the pretensions of tradition, of the institution, of every variation on the claim that "man is an animal that" is not really an animal. The relation between nature and culture thus tends to be summed up in a painful choice: either it is made into a bare-fisted swordfight, between two haughty champions who debase the opulence of what they represent; or else the complexity of each universe is protected, causality is rejected, and retreat into spineless meditation.

Ideology will never be able to escape this dilemma; science will. The latter, working on precise themes within finite space and time, employs a decisive means of analysis with a sense of proportion. With the notion that nature precedes culture as its trump card, the

reductionist point of view has only to seize one cause, and analogy will authorize it to detect its effects everywhere: culturalism will be its eternal challenger. On the other hand, if the game is played by following effects, measuring their dilution as the objective frame of research broadens (in space, time, and the question itself), and comparing the outcomes of homologous causes in different contests, not only do nature and culture start off on an equal footing, but they can share the same turf. For example, in the case of Aztec cannibalism, the causal priority of the scarcity of animal proteins in the valley of Mexico will no longer be disqualified by the influence of the ritual system or by the evidence of less costly solutions expressed in the conditional ("they could have" domesticated this animal or gathered that plant): at that time, wartime cannibalism was practiced to the north (by the Anasazi), to the south (by the Maya-Toltec or, farther away, the Tupi-Guarani peoples), and to the east (by the Caribs) of the Aztec zone, in societies that did not all have an upper class capable of appropriating this biological advantage (which was too meager to remain useful if it were shared equitably), or that did not have the same means of exploiting their surroundings, or the same demographic conditions, or the same environment. Traveling in time, we can observe that earlier civilizations, subjected to similar "pressure," did not respond the same way (as in the Teotihuacan case). Finally, the diffusion of certain practices (tearing out the heart, in particular) does not correspond to that of cannibalism, and corresponds even less to that of the ecological cause under examination. In short, the solution to the puzzle seems thoroughly accessible, but it removes us from a raw cause that is indispensable to the beauty of the nature/culture "match." The targets of science serve only as examples for ideology.

In their ultimate extension, which we will not dwell on, these para-scientific discourses tend to produce symmetrical inversions when they take on the question of morality. The diehards of cultural autonomy, none more than Sahlins, are often blamed for perpetuating the myth of the noble savage, the fine primitive whose society, which is subtler than our own, has not lost the art of living in harmony with nature. And the advocates of evolution exhort us urgently to seek once again the bosom of the nourishing mother

(which, like prodigal sons, we are supposed to have left), lest catastrophe ensue. The biologist Ernst Haeckel, a German proselytizer for natural selection, the inventor of "ecology," and a major figure in "social Darwinism," does not mince words: "We must return completely, sincerely, to nature and its laws. But for this return to be possible, man must know and understand his true 'place in nature.'"<sup>3</sup> Is this a philosophical allusion? Certainly not: the opposites cross, rather than merging. Nostalgia turns towards institutions that are not subjected to technology and economy, whereas the second regret condemns the resistance to institutions of progress by pointing the finger at religious obscurantism.

### Man and His "Places in Nature"

Does man actually have just *one* "place in nature"? Appearances notwithstanding, the question thus framed does not call for a metaphysical answer. The quotation marks borrowed from Haeckel indeed suggest a primary Darwinian concept, the contemporary equivalent of which is the *ecological niche* in the puristic sense defined by George E. Hutchinson<sup>4</sup>: in crude terms, it concerns the collection of traits that constitute the mode according to which a species is inserted into a biocoenosis. In these terms, the question thus overlaps with several problematics. It is ideological and interdisciplinary, if we choose to focus on a schism between the human universe and the natural world, an objectively observable rupture from the second point of view. It can also become a scientific question, from a specifically ethnographic and then anthropological angle, if we consider the way in which one or more societies declare (or do not declare) a divorce between their order and the order of the primitive world. Finally, the question takes shape as an interdisciplinary crossroads for the natural sciences and the social sciences, if it is directed at the problems of applying the concept of the ecological niche to the human race: is there one niche or are there several? Do human beings share a place in nature which has been increased through the development of an extraordinary adaptability in the course of evolution, or rather has this adaptability led human beings to multiply both



the number of habitats occupied and the ways of incorporating them, to the point that the idea of a common ecological niche is reduced to negligible significance?

Let us predict that a biologist will reflexively evince a negative reaction to the second hypothesis, for in zoology, an extremely close correspondence between ecological diversification and biological diversification is readily admitted: as a general rule, two niches mean two species, and two close species that succeed in "sharing" an environment are considered to reveal thereby that they have created distinct niches.<sup>5</sup> Yet, in Africa, Pygmy hunters and gatherers and Bantu farmers are so differentiated in the forest that the former exhibit no territorial defense in an encounter with an unfamiliar Bantu, and vice versa. A parallel observation can be made in western Africa in connection with nomadic herders and with farmers (Tuareg and Hausa, for example). The complex interactions that obtain between hunters and farmers, or between herders and farmers, in no way contradict the theoretical argument of a plurality of niches.<sup>6</sup>

In a stroke of theoretical lucidity that gives forethought to the potential difficulties posed by the concept of ecological niche, Hutchinson, unbeknownst to himself, formulated the problem in the direction of anthropology by immediately dissociating the "fundamental niche" (the tendency of the species, we might say) from the "actual niche" (the way the niche is concretized in real biocoenosis).<sup>7</sup> Contemporary man inhabits the planet in contradictory ways, both as a tight biological unit and in unprecedented ecological disparities. It is thus fitting to wonder what remains of our fundamental niche: are we to see it as a still-powerful substratum that engenders an immense range of concrete realizations, or is it reduced to a rapid capacity for adaptation to natural circumstances leading to a virtual rupture (in a sense, a functional discontinuity in a material continuity) between biological core and ecological realization? This perfect ecological expression of the nature/culture relation has the merit of revealing that this relation is a direct translation by naturalists which requires no concessions on their part as to the scientific nature of their approach. *Thus there was no need for them to bastardize, to distort, or to curtail the question, and the peremptory rebuffs received by a social anthropology*

devoid of practical meaning and of rigor were based on an unacknowledged desire to dominate the discussion, or on a will to exclude certain elements. For Haeckel, the evidence for a *single* human place in nature protected biologists' rights and moral duty: the duty to point out dangerous errors to their fellow human beings and to prescribe natural remedies. And in this regard, nothing has changed.

True, the problematics I have just distilled does not obviate the risk of ideological contamination, since it remains permeable to a discourse that blurs its boundaries: the little games involving ropes and sabers as described above are not forbidden. The gains are to be found elsewhere: no longer is anyone required to play, for to cross the boundaries between the life sciences and the social sciences no longer encourages the over-confidence in one direction that it repressed in the other. The assertion of a plurality of actual niches will not be as easily defeated by the hypothesis of the persistent reign of the fundamental niche as the hypothesis of culture is defeated by the observation of nature. This may at least spare us a few waves of the magic wand.

### Does Anthropology Still Need Frogs?

If the conditions for a dialogue of equals with the social sciences have thus been present in the camp of ecology at least since 1965 (when Hutchinson's seminal book was published),<sup>8</sup> we shall see that at that time French anthropology also possessed all the necessary means for meeting the challenge. At the same time, the "socio-ecology" of animals took flight with the spectacular development of field studies in primatology, often financed by American anthropology. That the latter was not to be outdone became clear in 1966 with the famous colloquium on *Man the Hunter*, marking the sensational debut of ecology in the interpretation of hunting and gathering societies, both contemporary and prehistoric.<sup>9</sup> Alongside the conjectures on genetic altruism, which were articulated in 1964 (see the first article of the present issue), a markedly less pre-ordained field of investigation was launched. Nevertheless, it would be somewhat unjust to hold sociobiology

alone responsible for its nearly complete dislocation over the following two decades. The all-consuming mode of systems analysis, which began its tyranny at that time, played an important role: for a long time, the leitmotif “ecosystems and social systems” led many researchers to believe that a polyvalent model could smooth over interdisciplinary misunderstandings. The wisdom of experience would now tend to support the belief that this leitmotif exacerbated the misunderstandings and evaded contradictions, by offering analogy a virtual “hunting preserve.”

In addition, the influence of national tendencies on anthropology<sup>10</sup> set up roadblocks in this respect: the new attention to the problematics of ecological niche was sabotaged because only the French tradition was in a position to practice it – except for one obstacle: this tradition is also characterized by the extreme impermeability of its tightly cloistered disciplines. For a long time ecology refused to incorporate man in its field of study, and ethnology’s reflections on the relations between men and their environment were conducted in a vacuum. So much the better, perhaps: this compartmentalization probably explains a curiosity whetted by “places in nature” rather than by the envelope and consistency of the ecosystem.

Across the way, American anthropology blithely ignored all of this work. Mixing and matching the various schools, it selected its French interlocutors from a theoretical lineage: Durkheim and Lévi-Strauss, who were exalted by the thesis of cultural autonomy and who served as foils for reductionism. Anglophone researchers never deigned to take an interest in the fact that starting in the 1960s, the majority of French researchers themselves perceived their discipline according to a bipolarity – whether grounded or not – that opposed the psycho-sociological inspiration centered around Claude Lévi-Strauss, an approach often criticized for its idealism, to that of André Leroi-Gourhan or André Georges Haudricourt, labelled “materialist” and to a greater or lesser degree aligned with Marxism.<sup>11</sup> During this all too transitory phase in which the French social sciences enjoyed considerable prestige in the world, the Anglo-Saxon community thus closed the door on a crucial domain of French thought. The various reasons for this exclusion are not very important, and they cannot be attributed to

a cynical form of ostracism. The reef of certain chance contingencies must not however cause us to lose sight of the Americans' minimal drive to inform themselves. If they wished to compare their views on evolution and ecology with those of the French, then rather than dwelling on Lévi-Strauss's lecture on "Structuralism and Ecology"<sup>12</sup> (the major shortcoming of which, according to the ethnobotanist Jacques Barrau, lay in the fact that it invested ethnoscience rather than ecology),<sup>13</sup> they would have done better to turn to scholars such as Leroi-Gourhan, who was anthropologist, prehistorian, biologist, and technologist all rolled into one, or Haudricourt, who combined the approaches of a botanist, a linguist and a technologist: these two were not shy of interdisciplinary undertakings.

Let us consider these four names – Durkheim, Lévi-Strauss, Haudricourt, and Leroi-Gourhan. An anthropological path to "place in nature" will appear as a mirror image of systemism, reductionism, and their hybrids:

- a) Durkheim does indeed defend the irreducibility of the social fact outside of an evolutionary perspective. He observes after the fact, from advanced human societies. Comparing these societies to animal societies, he underlines a contrast: the latter are governed "from within" by instincts, whereas, in man, ways of acting imposed "from without" are added on to their own nature. These ways are located in institutions and in language, which essentially work in combination.<sup>14</sup> The existence of the social fact outside the organism and its "obvious" location in language are implicit convictions that underlie sociology.
- b) In the first chapter of his thesis Lévi-Strauss suggests a definition of the nature/culture relation (from which he was later to distance himself, substituting a more subjective vision): he posits that "everything that is universal in man belongs to the natural order and is characterized by spontaneity, that everything that is subject to a norm belongs to culture and present attributes of the relative and the particular."<sup>15</sup> Biology can only applaud an option that deals with human behaviors by re-establishing the

methodological principle that it generally uses in its comparative observations (in systematics, for example). Lévi-Strauss nevertheless hastens to limit the application of this principle: according to him, there exists one rule and one rule only which, despite its variations, is characterized by a universality capable of embracing the nature/culture relation: the incest taboo. If this author had not been so Durkheimian, seeing the social only in language and the institutions that it expresses, he would also have observed a second such rule: the sexual division of labor, a rule where practice seems to prevail over talk.

- c) Haudricourt struck the imagination of some of his compatriots between 1962 and 1964 by publishing three extraordinarily condensed texts in which he explored the cultural parallelism between ways of treating other human beings and ways of treating plants or domesticated animals. The originality of Haudricourt's method stems from the use of the notion of "treatment" to include both cultural practices and conceptions. Despite these attempts, this reference never gained currency in the Anglo-Saxon countries, and if I am not mistaken, these three texts have never been translated, even though the most dazzling among them is only two pages long.<sup>16</sup> Sporadically, this interpretive program has cropped up in some brilliant reflections, the most recent of which is a Japanese effort regarding the Mediterranean and the Middle East<sup>17</sup> – a fact that has a certain pith if we reflect that Haudricourt rooted his notion in the contrast between Asia Minor and the Far East. Such efforts, which have expanded to an international scale, have barely scratched the surface of this research program, or else they have become immured in the psychological dimension of the treatment of others: ethnoscience prefers the study of images to that of acts.
- d) Finally, Leroi-Gourhan, in *Le Geste et la Parole* (published in 1964-65), writes that in man, ethnic diversification took over from specific differentiation.<sup>18</sup> The most perfect anthropological extension of Hutchinson's model thus appeared in the same year, with, to boot, the best reply to

sociology, which was then in the process of revival. For the ethnologist and prehistorian tackled the taboo subject – the process of constructing culture in the stone age – that fell between the gap separating zoology and sociology. The co-evolution that he discerned had no need of inventing cultural atoms, such as the *culturgens* or *memes* of sociobiology: the description bears on the joint progression of linguistic and technical aptitudes under the aegis of the nervous system. Moreover, Leroi-Gourhan resuscitates the question of social exteriority and, although he ends up leaning towards the idea of a collective memory forged by language (that is, towards a Durkheimian position), his observations continue to consider techniques and symbols as linked.

Thus taken as a whole, these four contributions shed light on one another and mutually reveal their lines of force and weakness. They also allow a glimpse of how anthropology is able to construct an authentic dialogue with the biologists, while dissuading them from dictating the conditions of a “refoundation” of sociology. And above all, they teach us where to find the mainspring that perpetuates the clash between culturalism and reductionism: by holding on to Durkheim and Lévi-Strauss, American anthropology admires or denigrates theoreticians for whom the social is concretized exclusively on the basis of words and interpersonal relations. By avoiding Haudricourt and Leroi-Gourhan, the opposite currents converge in the evacuation of technology. The only competition the gene and protein deem tolerable comes from the symbolic faculty and from language, which, in return, reject any partner that threatens to materialize the phenomena to be transcribed.

Between two bipeds, between a man and an animal, between a man and a plant, we find not one but two cultural mediations: word and tool. Taken separately, the first cannot resist sliding towards the question of what is innate *versus* what is acquired. On the other hand, the addition of the second mediator would halt this slide towards emphasizing the confrontation between the biological and the psychological at the expense of the social. Ameri-

can anthropology, without a doubt marked by the classical “Nature *versus* Nurture” polemic (which is practically synonymous with the innate *versus* acquired controversy in the way they play out), has not been able to escape this simplification, and the awkwardness of hasty interdisciplinary compromises has made matters worse. For example, laboratory attempts to teach sign language to a chimpanzee began in 1966, that is, three years after it was discovered that the same species used tools to hunt termites in its natural habitat; but globally, the interest shown in technical capacities of quadrumanes lags twenty years behind the desire to evaluate their linguistic talents: monkey speech was all the rage among psychologists, but the less sensational study of their gestures (see Frédéric Jouliau’s article in this issue) was the way prehistory was really able to penetrate the nature/culture relation.

Don’t the “cognitive sciences” lay this old trap once again? All we need do is read Dan Sperber to confirm this fear: his “epidemiology of ideas” exhorts anthropologists to make the final sprint to become “truly materialist,” but, once more, the only matter he gives them is inside the cells, and in his eyes culture boils down to a “precipitate of communication and cognition in a human population.”<sup>19</sup> The cognitive verges on “brainwashing” and the epidemic is indeed menacing. Within the French bastion, what remains of a culturalism that does not debase matter and a materialism that does not vassalize culture will not hold out long against these battering blows.

We may hope that American academics will tire of promoting a caricature of the rivalry between English empiricism and French theoreticism. After all, they have often shown themselves to be far cleverer than that: let us not forget that, in America too, behind the misdeeds of the will to popularize and the greed for scoops lie other promises with far less fanfare but infinitely more appeal.

### **Innovation and Elimination**

Natural selection biologically governs innovation by the process of elimination. Its rule does not follow an unvarying method from one end of the animal world to the other. The particularities cre-

ated by natural selection itself are matched by its own original strategies; the human species is one of those particular cases that elicits an original approach. In human beings, innovation takes a such a turn that its management exceeds the means of biology and elimination loses its instrumental permanence. As an objective reality to be verified, the relation between nature and nurture means nothing more than this: the diversification of human beings does not break with the rules of life, but it takes place beyond the total control of these rules. Within the human species, innovation is *socially* managed. Are these empty words? No, for the non-biological reality of the social fact is mysterious only as a result of a tacit amputation. Reductionism would deny that reality by proving that communication, itself so complex, continues to be ruled by the authority of life. By accepting this challenge, anti-reductionism itself performs a reduction that will crystallize the dispute.

The social fact does not emerge by the grace of language, nor by that of techniques. Speech does not create ecological niches, nor does gesture. Leroi-Gourhan saw this: these two dimensions of the human condition are products of biological evolution, and it would be impossible to specify the moment when one of them cut the cord. On the other hand, Leroi-Gourhan did not reveal that the form this co-evolution takes in the nervous system leads to unheard-of parallels in modes of life. We find analogues of language and analogues of techniques in animal societies: insect societies exhibit both of these (although they are brought to bear in different areas of behavior). But there is no case in which an animal species other than our own involves speech in its technical constructions and mixes instruments in its conversations. Monkeys have techniques, but not technology (i.e., a “discourse on techniques”); and their tools are not used to speak.<sup>20</sup>

There came a time in the evolution of the human species when prehistoric man picked up a brush to express something that would then be spoken of by the members of his group; and a time (not necessarily the same) when our ancestors invented words to designate the stages of construction. The gesture then invested the domain of speech, and communication entered into production. But techniques have a particular mode of action in language, and the converse is also true. Between these two effects of biological



evolution, a multitude of intrinsically creative and innovative interdependences are intertwined. Gene, protein, cell, and neurons are still there, as effective and determinant as ever; the difference is that relations are organized between their effects, of which they are no longer the causes. These links are indeed "externalized."

As a result, biological elimination is no longer the selection process that governs innovation. Words sort out the elements of nature with what they learn through tools. If the environment changes, the words and tools communicate in order to adapt. If their dialogue changes the environment, they pursue it. The multiplication of ecological niches follows with the emergence of a history whose pages are no longer turned by the genome. The social fact is constituted in ongoing, variable, and modifiable interactions of gesture and speech. It is made more complex in the interactions that take place between these interactions, and so on until exteriority becomes a memory.

When does the phenomenon reach its zenith? Leroi-Gourhan, a biologist by way of prehistory and a prehistorian by way of ethnology, did not fail to be astonished by the creeping pace of the old and middle Stone Age, attributing the slowness to the classic manifestations of animal evolution: the memorization of the new still took place through biology. The New Stone Age gave him the opposite impression, one of a wall being erected suddenly. These intuitions still retain their value to this day. Modern *homo sapiens* probably appeared at least 100,000 years ago: apart from the appearance of burials, the signs of rapid cultural development came markedly later. With all the caution required by prehistorians on these subjects, the cave paintings, statues, and decorated tools, as well as the multiplication of stone cultures, the first maritime journeys, the assumptions of demographic growth, and so on, do indeed seem to correspond to the dawn of the New Stone Age. Perhaps man remained a monkey longer than expected. For all that, his revolution is no less worthy of attention.

*Translated from the French by Jennifer Curtiss Gage*

## Notes

1. A choice example of this discordance can be found in a recent debate: see Tim O'Meara, "Causation and the Struggle for a Science of Culture," with comments by Marvin Harris, in *Current Anthropology* 38 (1997), pp. 399-418.
2. Marshall Sahlins, "Culture, ...," *The New York Review of Books* (23 November 1978); Marshall Sahlins, *The Use and Abuse of Biology: An Anthropological Critique of Sociobiology* (London, 1977); Marcel Mauss, *Sociologie et Anthropologie*, a collection of texts (Paris, 1950).
3. Ernst Haeckel, *The History of Creation: or, The Development of the Earth and Its Inhabitants by the Action of Natural Causes* tr. E. Ray Lankester (New York, 1892; from the 8th German edition; 1st ed. 1868).
4. George Evelyn Hutchinson, *The Ecological Theater and the Evolutionary Play* (New Haven, 1965). For a general overview, the reader is referred to two articles devoted to this concept in a collection of essays: James R. Griesemer, "Niche: Historical Perspectives," and Robert K. Colwell, "Niche: a bifurcation in the conceptual lineage of the term," in Evelyn Fox Keller and Elisabeth A. Lloyd, eds., *Keywords in Evolutionary Biology* (Cambridge, Massachusetts, 1992), pp. 231-240 and pp. 241-248.
5. See for example Claude-Marcel Hladik, "Les stratégies alimentaires des Primates," in J.-J. Roeder and J. R. Anderson, eds., *Primates: recherches actuelles* (Paris, 1990), pp. 35-52.
6. On the theme of the ecological strategy of complementarity between species of monkeys in a forest, see in particular A. Gautier-Hion, R. Qris, and J.-P. Gautier, "Monospecific vs. Polyspecific Life: A Comparative Study of Foraging and Antipredatory Tactics in a Community of Cercopithecus Monkeys," *Behavioral Ecology and Sociobiology* (1983), 12, pp. 325-335.
7. This distinction is examined from an anthropological standpoint in Georges Guille-Escuret, "La niche écologique contre l'écosystème et l'intervention négligée des faits techniques," *Anthropology et Sociétés* 20, no. 3 (1996), pp. 85-105.
8. In fact, he had begun to tackle the subject already in 1957 in the conclusion to a symposium: George E. Hutchinson, "Concluding Remarks," *Cold Spring Harbor Symposium on Quantitative Biology* 22, pp. 415-427.
9. Richard B. Lee and Irven DeVore, eds., *Man the Hunter* (New York, 1979; 1st ed., 1968). DeVore, who was later to vigorously champion Wilson's sociobiology, had also just published one of the first collections of scholarship on primatology in the field: Irven de Vore, ed., *Primate Behavior: Field Studies of Monkeys and Apes* (New York, 1965)..
10. In anthropology, the century has been dominated by three national academic communities: British, French, and then American. The principal reason for this is to be found in colonial history, with the capacity of these three countries to develop an ethnology that spanned the five continents. It goes without saying that this remark is in no way intended to pass judgment on the quality of research produced by other universities: Britain, France, and the United States owe their historical preeminence only to their positioning as crossroads of ethnographic data, a situation that was highly conducive to developing general programs and comparative methodologies, as well as to stabilizing rival schools. In a very schematic way, the empirical technicism of the British

long stood in opposition to French theoreticism, whereas the United States emphasized an internal conflict (particularly through the Nature/Nurture controversy) which gave (and still gives) the impression of reproducing the rivalry between the French and the British on a larger scale.

11. For a less lapidary exposition, see Jean-Luc Jamard, *Anthropologies françaises en perspective. Presque-Sciences et autres histoires* (Paris, 1993).
12. In Claude Lévi-Strauss, *Le Regard éloigné* (Paris, 1983); tr. Joachim Neugroschel and Phoebe Hoss *The View from Afar* (New York, 1985).
13. Jacques Barrau, "Histoire naturelle et anthropologie," *L'espace géographique* 6, no. 3 (1977), pp. 203-209.
14. Emile Durkheim, "Société," published in 1917 in André Lalande, *Vocabulaire technique et critique de la philosophie*, in Emile Durkheim, *Textes*, vol. 1 (Paris, 1975), p. 71.
15. Claude Lévi-Strauss, *Les Structures élémentaires de la parenté* (Paris, 1967; 1<sup>st</sup>. ed. 1949); tr. James Haule Bill, John Richard von Sturmer, and Rodney Needham (Boston, 1969).
16. The texts are included in André Georges Haudricourt, *La Technologie, science humaine: recherches d'histoire et d'ethnologues des techniques* (Paris, 1987). See in particular "Aspects qualitatifs des civilisations agricoles de la société de communauté primitive," pp. 299-300.
17. Yutaka Tani, "Domestic Animal as a Serf: Ideologies of Nature in the Mediterranean and the Middle East," in R. Ellen and K. Fukui, eds., *Redefining Nature: Ecology, Culture, and Domestication* (Oxford, 1996), pp. 387-415.
18. André Leroi-Gourhan, *Le Geste et la Parole*, 2 vols. (Paris, 1964-65); *Gesture and Speech*, tr. Anna Bostock Berger (Cambridge, Massachusetts, 1993).
19. Dan Sperber, *La Contagion des idées: théorie naturaliste de la culture* (Paris, 1996), p. 135; *Explaining Culture: A Naturalistic Approach* (Oxford and Cambridge, Massachusetts, 1996).
20. Georges Guille-Escuret, *Le Décalage humain: le fait social dans l'évolution* (Paris, 1994).