

The “Misfits”: Genesis of a Non-Darwinian Myth

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The term *anthropogenesis* – or hominisation – is applied to the process by which the human came to be differentiated from the animal to the extent of occupying and exploiting the principal ecological niches of the planet. For contemporary anthropology the subject is a highly charged one: many indigenous peoples have suffered from the evolutionist conclusions drawn by colonial science, and still today hominisation is widely perceived as an irreversible progress towards a particular form of society, a view that is nevertheless vigorously contested by the profession (Gras 2004; Juan 2006, 2007). As a result, anthropologists show little interest in this phenomenon, preferring to concentrate on the myths of ‘rupture’ that project various cataclysms via which man emerged from an archaic state, gained access to technology, to fire, to agriculture, and of course to his life as a social creature (Albert 1985; Carvalho 2002; Lévi-Strauss 1964; Vilaça 2006). If, in the Amerindian world-view, this scheme of things seems to be inverted, by proposing that animals appeared from the differentiation of human bodies, the principle of a catastrophe is still maintained (fall from the heavens, collapse of the earth’s crust, universal deluge) followed by rupture with the earlier age, leading to the emergence of current human society. But where does myth cease and the scientific reconstruction of origins, backed up by archaeological and ecological evidence, begin? The boundary is not so clear, as Wiktor Stoczkowski showed in his book *Anthropologie naïve, anthropologie savante* (Naïve and Scientific Anthropologies) (1994). In it he traces the paradox of an immanent thread traversing the learned accounts of origins, from the invention of prehistory and the birth of anthropology as a discipline in the eighteenth century right up to the present day. Our project aligns with his, while embracing a form of disquiet: long after the appearance of that book, contemporary scientific discourse, despite considerable advances in palaeoanthropology, maintains as established a scenario derived from the *East Side Story* theory of Yves Coppens (1983), which itself found its roots in earlier constructs. Scientific thought in disciplines as varied as neurobiology, linguistics or history rest upon a popularised account whose presentation, though humanist, is nevertheless situated outside of the strict framework of Evolution. By insisting on the ‘disadaptation’ of early humanity, the question of the evolutionary advantages which permitted the selection of language (Dessalles 2000), bipedalism and hunting is passed over, as if such behaviours did not result from selective processes, whether or not issuing from reiterated choice.

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Our proposal is therefore to make an analysis of contemporary arguments concerning the origin of man by studying them in the manner by which any ethnologist would analyse myths, that is by picking up on constants, isomorphisms and underlying structures, so as to emphasise that they refer back to an aetiological account, a ‘self-founding discourse’ (Schaeffer 2007). The commentaries examined have the particular characteristic of having been made by scientists, for the most part in the form of a digression on the margin of a central discussion presented within the confines of their speciality; but these incidental comments serve to shed light on the cosmological substrate whence the particular reflection emerged, whether bearing on linguistics, neurobiology or history. By engaging a heuristics of representations theorised elsewhere (Kohler 2007) we will bring attention to a scenario of cosmological representations relating to the place of man in the universe, a scenario activated by an ideology where what is involved is the setting aside of any Darwinian reflection in the name of a denunciation of the type of ‘Darwinism’ or ‘Neo-Darwinism’¹ which was totally foreign to Darwin himself (Gould 1995). Our hypothesis is that the narrative thread structuring the story of hominisation participates in the construction and reinforcement of our specific identity, with the characteristics of what constitutes Man being contrasted point by point with those of an abstract entity called ‘Animal’.

Episode 1: Homo faber, homo liber?

In 1965 the master work of André Leroi-Gourhan, *Le Geste et la Parole* (Act and Speech) was published, retracing the evolution of our species from the moment of a fundamental technological advance, that of the mastery of shaping stone tools thanks to the freeing-up of the hand through bipedalism, a transformation that opened the way to all the subsequent modifications relating to man (involving the brain, the larynx, the development of social life). The abruptness of this transition would be accentuated by Leroi-Gourhan in a later work *Évolution et Techniques* (Evolution and Technologies) (1971 and 1973), in which modern man stands out as a cultural creature, emancipated from the natural environment thanks to his absence of determination, making him ‘capable of any thinking’ (Groenen 1996: 98–99). This scenario provided a basis for thought that served to strengthen Coppens’s interpretation relating to the bones of the australopithecine named Lucy, with the Ethiopian Rift Valley divide forming the ideal stage for the ‘dawn of humanity’. Thus, the history of man became solidly grounded within a Darwinian evolutionary schema (that of bipedalism and the ‘adept’ hand – *manus habilis*), while at the same time coming to be expressed on a different plane, labelled as ‘philosophical’ by the pre-historian Jean Chavaillon (1967) when he took stock of *Le Geste et la Parole*.

On 31 August of the same year 1965, Roger Caillois delivered a lecture in Geneva entitled ‘The Universe of the Animal and that of Man’ which bears all the hallmarks of having been inspired by his reading Leroi-Gourhan:

Man is an animal, one of many. Certainly, he is a *special animal*. But basically he is indeed an animal, that is, a creature that lives, breathes and dies, whereas a machine is not such. A machine is an object made by man. So, things become more subtle, because *no other animal exists* which has made machines, *or even which had made the most modest tool*. We are thus faced with a first difficulty: man is decidedly animal, but in the class of ‘animal’ he is distinguished from the other animals by being the only one to have made tools and machines, that is, devices detached from himself that are able to extend his sense-awareness or his muscle-power.

Under this hypothesis, what makes man a ‘special animal’ is his use of objects made by him: tools. Even if the human monopoly over the making of tools is today rescinded, this hypothesis

remains, along with others, as a fundamental postulate in which Leroi-Gourhan's position is recognised: the tool, a consequence of the evolution of the hand, has provoked in the human lineage a disruption of the normal evolutionary processes, since the tool would lead to a state of 'disadaptation', as explained by Roger Caillois further into his lecture:

Many animals are seen to be extraordinarily well adapted for very specific actions. In comparison, man seems to be a *disadapted* animal, an animal which has *disadapted itself*. But from the very fact that he is no longer specifically adapted for any particular purpose, he has conquered the possibility of becoming apt for everything, or very nearly so. Only, his aptness for everything comes by way of an intermediary, through an interposed object, initially by the tool and later by the functional device and the machine.

How did this *disadaptation*, which is the conquest of *virtual aptitudes*, come about? Firstly, as we all know, through his upright stance. Man is a quadruped which stands on its hind legs, one which thus initially accepted both a considerable loss of balance and a no less perilous loss of swiftness in running. In return, it freed up its forelimbs for other tasks and, in what was going to become a hand, the thumb could become opposable with the other digits. It would acquire thereby the possibility of picking up an object, of looking at it and of thinking about it. I am not saying that that was all that was required [...], but such a combination: upright stance, panoramic vision able to command a landscape, a hand able to pick up, pluck down, put together and throw things demonstrates the enormous possibilities of species-related *enrichment* that man was able to derive from an initial *disadaptation*.

However, as we have subsequently seen, the relatively recent discovery – or recent acceptance – of the use of tools by other species, whose number is steadily increasing, has weakened the accession to bipedalism and the freeing of the hand as the obligatory point of separation, and has put forward the onset of hominisation to the next developmental stage, that is, the increase in brain size and the arrival of consciousness.

Episode 2: The Accident

Forty years later, in October 2006, a debate proposed by the Université de Tous les Savoirs brought together, within the context of a reflection on the 'barrier' separating man from animal, the neurobiologist Alain Prochiantz of the Collège de France, and Dominique Lestel, a philosopher and professor of ethology at the École Normale Supérieure. Alain Prochiantz spoke there off the cuff, though staying within parameters that would ensure that his remarks had scientific authority:²

I am not blind: *sapiens* is different from the other primates, I am thinking particularly of the chimpanzees which are nevertheless very close to us. And when it is said that that these two lines separated between 7 and 10 million years ago, that is not enormous, but it is not nothing. There was something that happened in between-times, something came together, and suddenly a kind of accident occurred. In fact I think that *sapiens* is such an accident. [...] The appearance of man remains a mystery, not a religious mystery but a scientific one. What was it that happened, two hundred thousand years ago roughly speaking, for a species endowed with consciousness to appear? [...] It's a pure accident, and it's one that's difficult to imagine. It could well not have happened, it only needed a whisker for it not to, and it has happened only once. So then consciousness came: those 900 cm³ [of extra brain volume] have brought about poets, have brought about suicides, there we are, that's us. They create the fear of death, they create Beckett. [...] Even if we still are animals, we are animals of a very special type, that is, we are at once animals and not animals,³ because of this very violent *rupture* with the previous state: we have, so to speak, *come out of nature*. [...] If the question is: what is the *barrier* humanity has crossed, the answer is, it is a moment in time, a *moment* when something *catastrophic* happened, with the result that, behold, here we are now.

The most apparent strand of this argument is that of instantaneousness: in this perspective, pride of place is taken by inchoative verbal forms and expressions: ‘there was something that *happened*’, ‘an accident *occurred*’, ‘consciousness *came*’, ‘behold, *here we are now*’. The reader will no doubt perceive that this discourse, over and above its scientific tonality, integrates an additional dimension, that of a narrative, which makes of it an ethnographic object of the first order.

The narrative is linked together around the notion of *accident*, in the forms of (1) the sudden appearance of consciousness; (2) the ‘coming out of nature’, forms which can be considered as being correlated effects. The terms accident/rupture/catastrophe form a system and imply abruptness, whereas *mystery* and *barrier* serve to complement this meaning in the sense of bringing opacity and a closing off of meaning. Paradoxically, the sudden, rapid and violent appearance of consciousness would have brought about a *closure* of access to an anterior state: the barrier functions in both directions, and it appears that consciousness, in equipping us with culture, cut us off from apprehending our *nature*. We have ‘come out of nature’, we are a-natural *par excellence*, Prochiantz would say in the course of his address, in the same way that Luc Ferry (1992) spoke of ‘extraction from nature’ and ‘being anti-nature’, in reference to humans. That is a way of implying that consciousness is at once both the cause and the effect of the rupture: the accident stimulates the accession to consciousness which then extracts us from nature, precisely by closing us off from any further access to what, in us, was nature. Prochiantz suggests that there is a form of incompatibility, rather than incommensurability, between our faculty of understanding and this world which we have ‘come out of’, because we have ‘come out of it’ in a ‘catastrophic’ fashion; we have, and here I am choosing my words carefully, ‘broken’ with our previous state. Prochiantz would give greater precision to this thought a little further on in his commentary by refusing to compare chimpanzee ‘culture’ and human products on the basis that you can’t compare a stone hammer with a cathedral.⁴

Of course, the reader will have no great difficulty in perceiving that this discourse is subtended by the Biblical myth of Genesis and the Fall, but it remains to be determined whether this relates to a conscious and controlled reference or the stereotypical expression of a schema one cannot go beyond in the present state of our systems of representation. Let’s suggest, along with Sperber (1996) and Boyer (2001) that this schema constitutes an *attractor*.

Disadaptation

Other examples will perhaps allow us to see this more clearly. The first may be found in a work by the sociolinguist Philippe Breton, author of *La Parole manipulée* (Manipulated Speech) (1998). This book received the prize of the Académie des Sciences Morales, despite containing an opening chapter which revealed an assumed disregard of recent published work in the field. To distinguish man from animal, Breton (1998: 28) drew his references from Georges Gusdorf, a philosopher of the Catholic and epistemological tradition, whose particular work on the subject dates back to 1952:

In the words of Georges Gusdorf, ‘The animal has no cognizance of the sign, only of the signal, that is to say the conditional reaction to a situation recognized in its general form but not analysed in its detail. Its behaviour aims at adaptation to a concrete presence to which it adheres through its needs and its wakeful tendencies, which are for it the only keys, the only elements of intelligibility presented by an event which it does not master but in which it participates.’

This proposition, however extra-disciplinary and non-current it might be, is congruent with the definition of an animal as a ‘sensorimotor organism’ inherently determined towards ‘response’,

towards the concrete, towards common tendency, in short, towards tropism. Now such a definition is the inverse image of consciousness such as we conceive it: consciousness denies us access to the animal world, including that of our own original nature, for the very reason that the animal, through lack of consciousness, remains confined within a world of 'stimulus/response' that is devoid of meaning. By attaining an awareness of meaning, by gaining access to the 'sign', we have become the opposite of an animal, whence the privileged choice of expressions such as '*contrary to*' rather than '*different from*' in discourses of scientific intent. There is no real significance, then, to be found in the distinction between mammals and arthropods, say, for the man/animal opposition is not based on either quantitative or qualitative differences: it is quite simply antinomic and antonymic.⁵

Breton (1998: 30–31), like Prochiantz, goes back to the origins of man to explain this rupture, basing his argument on Leroi-Gourhan as on the *East Side Story* propounded by Yves Coppens (1983) following the discovery of Lucy:

The work realised by pre-historians of all tendencies seems to suggest that the process of hominisation is closely linked with the development of a specific form of communication, which *radically* distinguished the human from the rest of the animal kingdom from which it issued. But, contrary to what common sense might suggest, this distinction could well, before being the marker of a progression, be the fruit initially of a *regression*. Might it not be from the fact of the *degradation*, accidental or otherwise, of the formidable capacities of the animal to process information that one of their number [...] should have become human?

The hypothesis of a founding *disadaptation* was developed [...] by the practitioners of palaeo-anthropology. For Lucy's 'inventor', Yves Coppens, man is firstly the product of a forest ape confronted with a new environment, that of the savannah, as a direct result of a geological *accident* on a vast scale. This initial *destabilisation*, with its implied *loss* of all previous familiar markers, would be for Coppens a possible *point of departure* for humanity in East Africa. In this circumstance, man, *failing* henceforth to process information with the stability, rigour and exhaustiveness characteristic of the *instinctive state*, would have prompted to develop a form of vocal communication perpetually in search of an adequate fit with the real. *Deprived* of any trustworthy informational link with the world, the creature that by this very fact *ceased* being animal was led to *reconstruct* this permanent separation, this perpetual *distance* from the world by giving it a meaning.

The terms highlighted in the above quotation clearly situate the thinking behind the representations that structure this account. According to this approach, hominisation would have functioned in a manner opposite to a Darwinian process, through 'disadaptation', as thirty years before Roger Caillois was proposing. It is not a question of a reinterpretation of Stephen J. Gould's proposition with respect to 'punctuated equilibria'.⁶ If such had been the case, *Australopithecus* would have been but one of the multiple species confronted with the problem of the savannisation of the environment. Breton, however, puts forward an inverse process, that of 'disadaptation', reinforced by the use of such terms as 'degradation', 'regression', 'destabilisation'. 'Loss', 'failure', 'deprivation' bring about the 'cessation' of animality, 'departure', 'reconstruction' and finally 'distance'. We find ourselves within the same semantic system as that of the 'rupture' and 'coming out of nature' previously cited from Prochiantz's terms, which equate to the 'point of departure of humanity' evoked by Breton. The reference to Coppens in reality relates back to an earlier hypothesis, that of the emancipation from the environment provoked by the freeing-up of the hand.

The *East Side Story* scenario was still mainstream in 1998, so Breton was justified in referring to it. But we should nevertheless observe that his version carries a stylistic slant which, reading

between the lines, is strongly marked by the catastrophism found in Prochiantz – the figure of the accident and its multiple expressions. Since Breton is a specialist in the human sciences, it is understandable that he may have preferred, for the necessities of his argument, not to mention the multiple species of hominids, australopithecines, paranthropus, and the six or seven species belonging to the genus *Homo* proper discovered to date, with the most recent being the little *Homo floresiensis*. Since I am an anthropologist, it is not the precision of his account that interests me, but the fact that it presents as a *fiction*, and cannot in consequence be subject to any test of truth or falseness. In a work of fiction, a group of characters is subjected to a series of incidents leading to a denouement, the whole bound together in what is called a ‘plot’. The ‘novelistic truth’ (a concept derived by René Girard) designates, in fiction, the fact that the events, characters etc. of the novel cannot be subjected to a true/false evaluation: it doesn’t matter whether Julien Sorel really existed or not, that does not enter into our reading as a significant factor, since *The Red and the Black* is a novel and not a biography. Because of this, it is not real events or physical laws which engender the succession of episodes, but the dynamic inherent within the story itself: in this case the narrator constructs the coherence of the character Julien Sorel, *its* determination and *his* determination, and readers have no cause to challenge it, any more than they can doubt that Mathilde falls in love, and so on. Lucy’s adoption of an upright stance is the initial episode of a novel of which the genus *Homo* is not the object but the main character.

Humanity’s childhood

The disregarding of the exact influence of a geological accident such as the formation of the East African Rift and its depth over time equates therefore to a narrative choice that allows the plot to unfold in all its virtualities, as, in the story of man’s origins as presented by Alain Prochiantz, the episode of the main character’s birth demonstrates:

It must be realised that, around 150,000 years ago, there were about 10,000 of us in Central Africa, we were completely *naked*, we had no *claws*, very few *teeth*, we were in an incredible state of *privation*. Concerning *sapiens*’s young, as you well know, it truly requires very considerable organisation to ensure the mere *survival* of this species. I don’t know if you can imagine what 10,000 people represent within a totally *hostile* environment, surrounded by animals that didn’t show *any great tenderness* towards that animal which was us. And despite that, it compelled a social organisation around the protection of the young, with individual relationships driving socialisation, with the *invention* of fire, of weapons, of tool-making. If there was a particularity of man, it would lie therein: man is a tool-making animal, it was the tool-making that allowed us to *hang on*. We were perhaps reduced to a thousand individuals, then that figure rebounded, and now, a hundred thousand years later, well, we are up to six billion, and we have also got to the moon. So there is definitely something continuous there, but also something extraordinarily discontinuous, which has a lot to do with our cerebral organ, those extra 900 cm³ which have allowed us to *invent* tools that ensured our *survival* in an environment where *sentiment* was *definitely not* the order of the day.

It is very obvious that the underlying fabric of this account is pretty much the same as that of Philippe Breton. Prochiantz herein fills out his thinking on the matter of the ‘rupture’ and the ‘accident’ constituted by the appearance of consciousness and the exit from nature. Here too we don’t find ourselves in any Darwinian scenario: ‘naked, no claws, very few teeth’, expressions which very adequately describe a ‘non-adapted animal’. The tale begins *ex abrupto* ‘around 150,000 years ago’, and it is not a scientific description that indicates what those ‘ten thousand men’, lacking in weapons, did there, but a ‘mythical condensation’, in Carlo Fausto’s terms (2002), restricting

within the temporal dimensions of an ‘accident’ the invention of ‘fire, of weapons, of tool-making’. It was through a deviation from the evolutionary framework that man found himself forced to suffer a ‘hostile environment’, filled with creatures that didn’t show him ‘any great tenderness’, within a natural world where ‘sentiment was not the order of the day’, a very severe world if you consider that the story projects man in the situation of an *infant*. By a curious focalising effect, the image of infantilised man⁷ is crystallised in the figure of ‘*sapiens*’s young’, and the social organisation based thereafter on the ‘protection of the young’.

Alain Prochiantz’s address was in 2006. Yet *Orrorin tugenensis* was discovered in 2000, and Toumaï (*Sahelanthropus tchadensis*) in 2001, challenging the association of australopithecines with the Rift Valley fracture and strengthening the bushy form of the human descent lineage. Linking the emergence of one hominid species, *Homo sapiens*, with that of a lineage which, under the present state of knowledge, traces back to *Homo ergaster* (2 million years ago),⁸ represents thus a condensation adapted to the needs of the narrative. Similarly, the invention of stone-tool making is not exclusive to our species, as Paranthropus (or robust australopithecines) also mastered this skill, without mentioning, from more recent eras, the Neanderthals who have been completely ignored in this context. As for fire, the indisputable mastery of it seems to be the achievement of *Homo erectus* around five hundred thousand years ago, though its simple use went back much further.

Clearly speaking, *Homo sapiens* was, as regards its phylogenesis, an extremely robust primate, taller than the average present-day human, possessing effective tools, specialised in hunting for big game, moving about in groups of several dozen individuals, and which neither would have displayed ‘any great tenderness’ towards its prey. It is quite remarkable to observe that the image of it presented by various popularisers is quite the opposite of what our ancestor was really like. The reason – though it is probably not really able to be fully formulated – is that the description of a primate that had evolved to the point of occupying a super-predator niche is incompatible with the vision of a non-adapted or ‘disadapted’ man, naked and deprived, having ‘lost his familiar markers’, a victim, in summary, of a catastrophic regression to an infantile state.⁹

Now the attentive reader will have noticed this curious fact: if the scenarios proposed by Prochiantz and Breton are identical, they in reality apply to two different species: *Homo sapiens* for the former, *Australopithecus* for the latter. The former describes an event that occurred approximately 200,000 years ago; the other story is located three million years further back. The only possible explanation is that these both relate to a myth that is applicable to everything associated with what is human, with sudden emergence, rupture and disadaptation becoming thenceforth *essential* characteristics, infinitely reiterable. This myth isn’t due to ignorance or superstition. It is simply a founding myth of our culture, which integrates in the margins elements of the theory of evolution but which is fundamentally non-Darwinian; and we find ourselves confronted with this strange variant scenario: the Yanomami on the border between Brazil and Venezuela (Albert 1985), the Palikur of the Oyapock basin between French Guyana and Brazil (Kohler, field data) along with many other Amerindian populations which retain similar myths (catastrophes, original beginnings and new beginnings, loss of communication with all other living people) seem more conscious of the mythic character of their tales than Western scientists undertaking to relate our origins.

Hominisation as counter-evolutionary

It is thus simple to deduce that the narrative components that we are picking up here do not constitute a scientific theory built on the recent discoveries of palaeo-anthropologists and ethologists, but rather a myth that is widely latent throughout the whole range of academic production. This myth

is that of *hominisation*, that is to say *the construction of a species via a counter-Evolutionary process*, a species facing failure, hostility, the loss of ‘instinct’, including, one supposes, the ‘instinct for survival’ and having thus to find, in order to survive, a ‘consciousness of survival’.

This myth is elaborated upon an immutable canvas. For those of us of a Western cultural heritage, it goes without saying that those who carry it forward construct it on the basis of a scenario that pre-exists Darwin’s theory, which is only very marginally integrated within it since in a way this scenario asserts that man was miraculously (or ‘accidentally’, or ‘suddenly’) created in spite of Evolution: ‘suddenly something happened’ – we were incapable of struggling against it, but our ingenuity – or our culture – saved us. The only observable shift in the mythopoesis is that of the agent, which, from being divine, becomes cerebral. No God, no Prometheus, no natural selection: the authoritative scientific word in this case asserts that man owes everything to himself, has created himself as a consequence of an ‘accident’ which entailed the loss of familiar markers, of natural defences, and an assumption of ‘distancing’, of ‘beginning’, of ‘coming out’. In Schaeffer’s words (2007: 45) it was a matter of ‘self-foundation’. The insistence on the singular, on the solitary or on the tiny number (‘10,000, 1000, and here we are now six billion’) naturally reinforces the unique character of primal man, singular by distinction in opposition to the singular through indetermination that is the lot of the ‘animal’. As remarked by Yzerbit and Schadron (1999: 93):

The concepts of collectivity groups (high prestige) and aggregate groups (low prestige) fit precisely within an identity model which apprehends the impact of social status on individual identity. [...] A favoured position in the intergroup relationship stimulates the building of a representation of belonging in terms of a collective of distinct and quite separate individualities. A less-favoured position on the other hand leads individuals to define themselves, and to be defined by members of other groups, through the characteristics which differentiate their own group from the exogroup.

There is no need to go back to Descartes to trace the origin of this myth, nor to the Bible or Aristotle or Plato. The observation that corresponding structures may indeed be found in these sources, just as in myths like that of Prometheus, suggests that it in all likelihood corresponds to one of the ‘universals’ of the human mind, and that its emergence preceded historic time. In our hypothesis, it must go right back to the very origins of articulate language and may but constitute the permanent and more or less rationalised reformulation of the ‘species barrier’,¹⁰ a question which merits that we should come back to it later. One might suggest that Descartes elaborated his method by basing it on this representation which was deeply rooted in him as in all people: the Genesis scenario is itself, in all probability, built on this schema, rather than being the originator of it. And finally, it was on the strength of this pre-existing conviction that we humans are radically different from other living creatures that Aristotle projects the *logos* and politics as that which characterises the human (Fontenay 2008: 72): the important aspect is found in the reaffirmation of the principle of human individuation which distinguishes the self from the non-self, the We from the Others. In the mirror of the animal, man will always perceive an inverted image of himself.

Consciousness implies being defenceless; though consciousness leads to the production of weapons, it is in itself vulnerability and disadaptation: it ‘brings about suicides, it brings about poets’ says Prochiantz – and these two functions are here synonymous. The inverted image is present in Descartes’s insistence on emphasising the constitutional incapacity of the ‘animal’ to feel pain, which is a reflection of the constitutional incapacity of our consciousness to integrate the non-human. Man’s consciousness is a rampart *against* nature, hence a barrier, as is borne out as much by the adventure of Kurtz yielding up to the will to power (in Conrad’s *Heart of Darkness* of 1899) as by the castaway of Jules Verne’s *Mysterious Island* (1875) who can no longer speak nor,

a fortiori, make fire (Kohler 2001). One could not better make explicit the incompatibility of the consciousness and nature, and man and animal. It is in consciousness, and not in nature, that the rupture is located: the myth of origins asserts nothing other than that consciousness *is* rupture.

Yet one observes a remarkable constancy in the scientific wish to assume as its own, derived from constructed knowledge, a stereotyped myth pattern so deeply rooted within us that it emerges at every turn of the page, whether opportunely or completely inopportunely. Stoczkowski (1994: 62) observes that, out of 24 evolutionary scenarios bearing upon hominids, 20 involve rupture or 'disadaptation' episodes due to a change in the environment. The localisation of the origins of man in Africa has, moreover, mechanically occasioned a reallocation of the mythemes contained in the Genesis story, with the result that the authors of one work relating to the evolution of mammalian fauna in Africa from the Palaeocene to the Holocene have naturally entitled their book *Evolving Eden* (Turner and Antón 2004), an idea that *goes without saying* for every Western reader including you and me.¹¹ In so doing, they illustrate the remarks of Schaeffer (2007: 218) describing not only the interweaving, but also the harmony reigning between Christian naturalism and biological naturalism. In this it is a matter of mythemes being constantly reassembled, a structural analysis of which allows a rational understanding to be reached.

It is sufficient that readers should question themselves on the manner by which they completed from within themselves the preceding scenario: no doubt they could spontaneously visualise that infant abandoned by nature. In a discussion on the Book of Genesis, Edmund Leach (2000: 39–40) expresses the following conclusion: 'Whenever a corpus of mythology is recited in its religious setting such structural patterns are "felt" to be present, and convey meaning much as poetry conveys meaning.' Although presented within a scientific context, this story speaks to us, it is more deeply rooted in us than any fairy story like the Petit Poucet, we have met it in a thousand forms, and told it to ourselves a thousand times. This story is ours, but it is not our History.

Conclusion

Our analysis, founded upon systems of stereotypes, was applied here not to the utterances of Amazonian shamans, but to addresses made, outside of the strict framework of their speciality, by French scientists. We have pointed out certain elements in the heart of these addresses which reveal, through their very articulation, the presence of mythemes: vulnerability, abandonment, sudden separation, dignity, sacrality ... which are constituents of the identity of Man. These elements suggest that in this context we are not in the scientific domain properly speaking, but involved in an intimate process of identification and boundary construction, with the endogroup here being humanity while the exogroup is the remainder of the living world. Up to this point, there is nothing which will shock any ethnologist who has read Barth (1969). As emphasised by Stoczkowski (1994: 149–150), '*the reductionist schematisation to which all scenarios [of hominisation] have been subjected allows in total 216 explicative sequences to be distinguished, expressed through one or several inferential operations. The authors under consideration [...] declare their attachment to the Darwinian or neo-Darwinian theory of evolution, so it is surprising to note that close to 74% of the causal sequences make no reference to Darwinian mechanisms. These latter appear in only 20.4% of the cases [...]. As nearly half of the scenarios construct their explanation of anthropogenesis without any recourse to Darwinism, one is led to observe that the arguments of these texts would not have suffered too much had the theory of evolution never existed!*'

Our hypothesis is the following: there exists a human identity, a mental construction coming out of a phylogenetic history, which has accompanied the formation of our species. Like any identity, ours is shaped by its boundaries: man is constructed and intellectually conceived in opposition to

an abstraction labelled 'animal'. It is the fact of losing the realisation that an animal is an abstraction, a chimerical creature, which constitutes the problem that science needs to resolve: how can we reach beyond this 'epistemological linchpin'.

This hypothesis carries with it another idea: that there exist constitutive identities for each species and for each member of the populations that compose it, such being an integral part of the process of speciation, and where such identities are to a greater or lesser extent elaborated through differentiation with other populations or other species, and more or less associated with a social structure or a period of learning, depending on the degree of cerebral complexity of the species under consideration. Just as 'one is not born a woman, one becomes one', each new-born creature emerges with a propensity to become say a lion, a carnivore, and to live in a group with x number of other individuals. But it still requires that this individual effectively fulfils what a lion is called to be, that is, to mate with lionesses, to preferentially opt for prey in the form of wildebeest, zebra or buffalo, to ensure efficient hunting, to learn how to kill, to organise shifts in territory, the protection of the young, to establish alliances, to win bands of females etc. Such characteristics are not reinvented with each birth, but are inscribed in an evolutionary continuity which is *taught*, that is, passed on culturally.

How then might one reintegrate the history of man into the schemas of evolution? Contrary to the approach projected by socio-biology, I propose to broaden the field of application of the human and social sciences to include other species than our own, and to adopt Ingold's proposition (1988: xxiv) noting that species are both the cause and the consequence of their evolution: 'By taking as our point of departure the animal in its environment, we can be spared the dichotomies between biology and culture, between evolution and history, which up to the present have caused so much trouble for anthropological thought. We could even begin to shake the intellectual barriers that today separate biological anthropology from the social and cultural branches of the discipline. [...] Rather than having one theory for humans and another for the remaining living creatures, it would be better to privilege the alternative: a theory of evolution that integrates changes in the genotype within a more general explanation of the transformation of organisms, in the context of their mutual relationships and their respective conditions of development. Just as humans, as a species, forge their own history, so animals are in general both the causes and consequence of their evolution.'¹²

The accounts that we hold to in relation to ourselves are neither more nor less valid than the self-representations derived by elephants, gorillas, whales or jays. They structure our species identity and by this fact play a major role in our evolution. It would nevertheless be deplorable that such an account should end up in reality by putting in danger the existence of other species. Thus we believe it proper to plead, as did Lévi-Strauss (1971) in favour of 'a wisely conceived humanism which does not begin with itself but gives to man a reasonable place in nature instead of his being installed as the master and ravaging it without any regard for the most obvious needs and interests of those who will come after him.'

Translated from the French by Colin Anderson

Notes

1. We propose, as a convention for this article, to qualify as 'Darwinian' the constructs derived from the work of Darwin himself, and as 'Neo-Darwinian' those relating to the propositions of Gould and Eldredge (1976) bearing on 'punctuated equilibria', or those of Dawkins (1976) on the selection engaged at the level of the genotype; we will reserve the qualifiers of 'Darwinist' and 'Neo-Darwinist' to the extrapolations of Darwinian thought to other disciplines, such as economics, history or sociology.
2. Even though this debate was largely improvised, the essentials of the argument can be found in La Lettre du Collège de France n° 27, in the presentation by Prochiantz at the colloquium held for the Bicentenary of the birth of Darwin.

3. This progression of ideas ('we are animals, we are animals of a special type, we are not animals') allows us to observe the way in which Prochiantz, as did Caillois, inextricably entwines two orders of reasoning: that of the biologist and that of the Cartesian humanist, by successively posing two contradictory affirmations in answer to two different questions. According to Philippe Descola (2005: 249), 'As Ingold pertinently notes, philosophers have rarely asked themselves: "What is it that makes man an animal of a special type?", preferring rather the typically naturalist question: "What difference of type is there between humans and animals?"' Under the first question, humanity is a particular form of animality defined by our belonging to the species *Homo sapiens*, but under the second it is an exclusive state, an auto-referential principle, a moral condition.'
4. The same argument is employed by Juan (2007: 6) to disqualify chimpanzee cultures: 'The question of primate culture is explicitly posed, with constant incongruous examples consisting of labelling as 'complex toolkits' sticks, straws or pebbles that have been collected and, in the best cases, used as hammers by the great apes; *Australopithecus* is again and again called as witness amid arguments about the DNA of our "primate cousins", which is so close to ours, or of their "awareness of death". Naturally, there is no serious reflection on the symbolic to back up these speculations of pseudo-anthropological intent [...].'
5. Jeangène Vilmer (2008: 12) comes to the same conclusion.
6. See Gould and Eldredge (1977) and Dessalles (2000: 96–97, 113–116). There exist two forms of evolution: the first, Darwinian in the proper sense, rather consists of maintaining genetic continuity in spite of spontaneous mutations, and would serve to explain the relative stability of species throughout their existence (failing which it would be impossible to describe a species, as this would be permanently involved in an evolutionary process) – this then indicating a phase of equilibrium. But consequent upon accidents of geographic, geological, ecological or extra-terrestrial origin (separation into sub-groups, volcanism, separation or rejoining of continents, climatic changes, sudden arrival of invasive species, meteorites) there would occur 'brutal' phases (in comparison to those of equilibrium) of speciation in multiple directions, preceded, followed or accompanied by extinctions; this is the phase of 'punctuation'.
7. One might note here the inclusion in this account of a notion advanced at the beginning of the twentieth century, that of human 'neoteny', (Lorenz, following upon Haeckel – see Gould (1980): 'A Biological Homage to Mickey Mouse'), an idea picked up and further developed by philosophers such as Giorgio Agamben (2002) and Elisabeth de Fontenay (2008).
8. *Homo ergaster*, the presumed ancestor of the Asian *Homo erectus* and the European *Homo heidelbergensis* (Picq and Coppens 2001; Picq 2005) does not create unanimity in the scientific world. English-speaking authors tend to see in it an originating form of *Homo erectus* which may have later diversified (Turner and Antón 2004; Agustí and Antón 2002). Similarly, the place of *Homo habilis* in the genus *Homo* poses a problem, since recent discoveries tend to indicate that both *habilis* and *erectus* may well have appeared at the same time, around two million years ago, and shared the same ecosystem for hundreds of thousands of years. From this point of view, *habilis* would not be a direct ancestor, but a separate branch of the hominid family.
9. It is with this cliché that Ehrlich and Pringle, authors of the 2008 article 'Where does biodiversity go from here?' have a little amusement. 'The fate of biodiversity for the next 10 million years will almost certainly be determined during the next 50–100 years by the activities of a single species. That species, *Homo sapiens*, is ~200,000 years old. It has been fabulously successful by ecological standards: it boasts as-yet-unchecked population growth and a cosmopolitan distribution, and it has vanquished its predators, competitors and some of its parasites. The fossil record suggests that the typical mammal species persists for approximately one million years, which puts *Homo sapiens* in mid-adolescence. This is a fitting coincidence, because *Homo sapiens* is now behaving in ways reminiscent of a spoiled teenager. Narcissistic and presupposing in our own immortality, we mistreat the ecosystems that produced us and support us, mindless of the consequences' (2009: 11579).
10. On this subject, and on the solipsism of Descartes, see Midgley (1988: 42).
11. In relation to the Social Identity Theory of Henri Tajfel, Yzerbit and Schadron observe: '[...] social judgement is inscribed in a process of a search for meaning whose social dimension is crucial: those observing confer a meaning on the other, often arising out of an observed behaviour, in order to be able to interact in a functional manner with the latter. In this process, information such as in the form of stereotypes has

a special status for several reasons. On the one hand, stereotypes constitute a heritage, a base information which allows observers to address new situations without being excessively disadvantaged. Given this role, it is not surprising that such stereotypes cannot be easily put into doubt by any new information. To the contrary, it is these ancient schemas which will often determine how new data are to be interpreted' (Yzerbit and Schadron 1999: 159).

12. A simple example will illustrate this proposition: the choice privileged by a group of felines of a type of prey and mode of hunting (high-speed pursuit over short distances) has led to the emergence of the genera *Acinonyx* and *Miracinonyx* (Turner and Antón 1997: 171–175). Environmental factors (availability of a type of prey, competition with other predators) but also cultural ones (passing on of hunting techniques by the mother) brought about an evolutionary shift towards the highly specialised form of today's cheetah. Likewise, it is the culturally acquired modification of our diet which has led to a slenderisation of our jaws and the progressive disappearance of the so-called 'wisdom tooth', and not the reverse.

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