O animal e os limites do humano

Emerging hybrids, biodiversity & human futurE

Híbridos emergentes, biodiversidade e o futuro humano

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Abstract

The hybrids of modern times do not indeed settle anymore between animals and machines, but between so-called *living machines* and already *animalized technologies*. One of the most dangerous manifestations of this process (which is also the one most overlooked) is that it takes the form of an insidious spell that leads humans not only to being unable to distinguish animals from artifacts, but also to sincerely prefer the latter to the former.

Keywords

Hybrids, animals, machines, technologies

The planet Earth is now a sick planet whose increasing pollution inexorably destroys the extraordinary biodiversity. Albeit largely correct, such causality nevertheless hides other factors that may be ultimately at least as decisive in the ongoing disaster. Pinnacle of Western technology that has always been very aggressive towards the sphere of life in general, the "emerging hybrids" may represent a new threat that we underestimate the more they appear increasingly terribly attractive.

1.

Western technologies were built around the very specific context of violent opposition to nature. From the origins of European thought, technology is humanity itself – with the language – because it allows the human animal to be freed from its animality. The myth of Prometheus and Epimetheus provides an early version of this story that gives humans a separate status. The human, forgotten in the distribution of capacities between animals, received speech, fire and art from Prometheus as compensations. In this regard, a dimension of myth, which commentators still neglect, is very important because technique is given humans as revenge on the animals, and

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technique allows humans to escape Nature, to go out of the animality in which they previously were. Far from being eroded over time, such a vision of human will instead find an amazing wealth in modern times. It is found for example in Rousseau in the Enlightenments: "... all men are born naked and poor, all subject to the miseries of life, pain, sore, needs, pains of all kinds, and finally all are condemned to death. That is what is truly human, that's what no mortal can escape."[1] It is also constitutive of the thought of the founder of the United States, Thomas Jefferson. And there are many more examples at will.

2.

That autonomy of human *versus* nature not only has not diminished over time, but also was instead enhanced in ways never seen before. We can identify how it took place through three principal moments. It first started by isolating Human from Nature and from the world (and reflections by Peter Sloterdijk on the origins of the city and the importance of the walls that separate it from the rest of the world are important here[2]). It then turned into a program of enslavement of Nature before eventually leading to a plan to eradicate Nature itself. The subjugation of nature was also accompanied by a contempt asserted toward those who wanted to care more of it. As H. D. Thoreau noted very clearly, if somewhat bitterly:

> If a man walk in the woods for love of them half of each day, he is in danger of being regarded as a loafer; but if he spends his whole day as a speculator, shearing off those woods and making earth bald before her time, he is esteemed an industrious and enterprising citizen. As if a town had no interest in its forests but to cut them down![3]

In this perspective, technique is opposed to Naturenature, and any technique aims to overcome the natural human, as much as to expunge any human from any Nature through a double complementary purification that must be radically brought to completion. In the Western sphere, any technique, in other words, stood intrinsically *against* nature and *against* the world, supposedly for the benefit of human, and for his benefit alone. Such an ambition summarizes quite rightly one of the major aspects of the humanist ambition that is to put human out of nature and to glorify acquired autonomy – because the status of human is precisely to be free from any aspect of nature.

3.

The rescue of human from the clutches of nature is also accompanied by the establishment of a true thought of hate toward the animal (a step still largely undervalued, but in my opinion very important in a general history of technology). That thought

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[1] ROUSSEAU. *Emile*, p. 319 (my translation).

[2] SLOTERDIJK. *Globes, Sphères II*, p. 220-286.

[3] THOREAU. *Life without principle*, Part 1, par. 6.

operates through a passage between a state where human is separate from nature to a state where he hates nature. The history of this scholarly hate of the West for nature in general and for the animal in particular is still waiting to be written. The role of Descartes and especially of the Cartesians in the conception of the animal machine is well known. But the role of Father Malebranche was most important. Far from being a mere follower of Descartes, he has himself innovated significantly. He denies any affection to animals, a point on which Descartes remains rather vague. Malebranche first "proved" their insensitivity by the distinction he draws between the soul and body, but develops a more original argument in the fourth book in the search for truth. He explains that because such animals have not sinned, they are incapable of suffering.[4] They therefore have no sensitivity and are therefore devoid of conscience. The priest and philosopher draws the conclusion of the basic ethical thesis of the animal-machine: if the animal is a machine, man can do whatever he wants with him. Malebranche considers that the thesis of the animal machine of Descartes legitimates the expulsion of animals from the sphere of ethics. Malebranche gives extra strength to his argument by linking that ethical theory to a psychological illusion of the senses: the one who is moved by the suffering of animals, he says, in fact is simply deceived by his senses.

Here we see how a thinker, who rejects with scorn the evidence of his senses and emotional scruples of one who is ill at ease with animal suffering, enters a space of epistemic perversion.[5] It would probably be a little bit daring to establish a direct link between Malebranche and vivisection, which develops at his time, but we can at least make the items correlated.

4.

The problem of Western technology is not that it is a moral transgression, as many thinkers have said (starting with the Greeks with hubris up to and writers from *Frankenstein* to *Blade Runner*), but that it is autistic *vis-à-vis* other living beings, which is significantly different, and therefore ecologically disastrous. The problem of Western technology is not that it acts against morality, but that it constitutes itself against the world and nature. Such an assumption is eventually now very self-destructive and poses a major problem. To separate oneself from nature means in particular that one can exploit it without putting oneself in danger.

5.

Such technology is further schizophrenic, in that it establishes a fundamental break between what we really feel and what we are told to believe. In this regard, the psychological analysis of Malebranche is particularly revealing of the intellectual

[4] Merleau-Ponty said that Malebranche used to beat his dog telling that the animal had no suffering at all!

[5] For example in MALEBRANCHE. *De la recherche de la vérité*, livre 4, chapitre 11.

contortions in which we must commit ourselves if we wish to see animals as mere machines. An anarchist supporter of free epistemic competition, the philosopher Paul Feyerabend was the first to understand this situation when he showed the bad faith of those who rejected practices that were deemed indecent and foolish as witchcraft or magic.

Feyerabend even wanted to put the theories and paradigms facing each other, without the necessity that the State decides *a priori* what the legitimate way to follow is. Why to exclude witchcraft and astrology, he said in substance: If they are so bad, they will disappear by themselves. Remains the risk, of course, that they are more efficient than their detractors say. Witchcraft and astrology are not necessarily as bad as their detractors say they are. Defending the empirical and highly developed witchcraft from the fifteenth to the seventeenth century, Feyerabend wrote in a note that the reader should consult the descriptive parts of the *Malleus maleficarum* that are filled with detailed clinical reports. Later, when witchcraft was considered a mere superstition, devoid of empirical content, these reports were abandoned with the theories they had so beautifully confirmed.[6] Feyerabend says, what is fundamental is that, as a result, psychology took a big step backwards.

6.

This desire to become independent of the Nature is very clearly expressed in the program being developed by the cybernetics of Norbert Wiener during World War II. This program bounds more strongly than ever the idea of a true science of living and idea of an engineering that encroaches on living up to swallow it. Borrowing the Cartesian view of animal-machines, it gives new perspectives to it, putting the feedback mechanisms at the heart of the living and trying to introduce it within artifacts. Communication is thus replaced by an interaction based on mutual adaptations.

We should return to this "animal" that haunts cybernetics from its origins and carefully look on Grey Walter's turtle for example. These somewhat clumsy attempts to build artificial animals are nevertheless a fundamental dimension of an engineering of the creature that is one of the central objectives of the sciences of the artificial. Cybernetics can only be truly understood if one realizes that it is both a technological project and a particular narratology that consistently emphasized the living aspect of what is designed. These two aspects are inseparable and mutually feed one another. That engineering of the creature,[7] which stands as literary fiction as far as technical achievement, and that infiltrates artificial intelligence and artificial life, has two major objectives: to give the human his interlocutors that his autistic science has desperately isolated and to substitute for less mechanical living beings than has been dreamed of, more manageable animalized artifacts.

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[6] FEYERABEND. *Against method*, p. 155-156.

[7] That expression was coined by Thierry Bardini.

7.

These technologies can therefore be regarded as fundamentally autistic and even paranoid – something with which all communication is broken and illusory becomes necessarily threatening. Indeed, the language of pathology makes it possible to better characterize these technologies than the language of power with which are usually associated. Many writers and philosophers have warned against them, but they did it on a moral ground (the one of transgression), which ultimately proved to be quite illusory, whereas a more environmental range, that of ecological disaster, would have been righter.

8.

These autistic techniques have in addition the characteristic of being fundamentally paranoid technologies. They lead Western people to imagine that these artifacts could conspire against them. The engineering of the creature is grafted successfully on the theme of the enslaving machine that has a long and complex history in Western thought. We begin to find that topic in Mary Shelley's novel, *Frankenstein*, but it has since become a "lieu commun". The French thinker Jacques Ellul has given a version at once more rational and more technical, from a personal threat to even more menacing structural threat.[8] For him, it is no more a kind of creature that threatens the human, but a specifically complex organization that has nothing to do with species at such. These literary and philosophical texts concern that technical innovation is fundamentally cost prohibitive.

9.

The fear expressed by some of our contemporaries that machines displace humans in the near future must be understood in a perspective that is far from remaining purely literary. Such a machine – smarter than a human (and even, one might add, smarter than the smartest human beings) – is being seriously contemplated by some of the best and brightest researchers of our time. The moment in which machines will outdo humans, which is expected in the very near future (in 2030), is called the *Singularity*. John von Neumann (who was the first to sense such a break) explains early on that technological progress will reach "an essential singularity in the history of the race beyond which human affairs as we know it cannot continue".[9] But it is the statistician I. J. Good who will give it its current meaning by treating it as a partly non-human intelligence.[10] The

[8] His best known book on that topic is *Le système technicien*.

[9] ULAM. John von Neumann 1903-1957, p. 1-49.

[10] GOOD. Speculations concerning the first ultraintelligent machine, p. 31-88.

concept will then be taken over by the computer scientist and science fiction writer Vernor Vinge who popularized it.[11]

The movie *Matrix* shows the extreme contemporary version of such a machine. But the science fiction writer Philip K. Dick had already sensed the importance that these problems could have. Philip K. Dick doubted the ability of man to draw a clear difference between an artifact and a man. He also says later that it's one of the few ideas he has contributed to science fiction, "that a guy could be an android without knowing it". He also later built one of his masterpieces, *Do androids dream of electric sheep?*, based in part on this idea.[12] We probably understand better now the difficulty discussed. Indeed, the question of what actually differentiates a post human cyborg and an intelligent artifact has become today a brutal one.

10.

These fears are more relevant than ever, at the dawn of the 21st century with NBTIC technologies resulting from the convergence of nanotechnologies, biotechnologies and information and cognitive technologies. Such a program is in particular one of the priorities of the National Science Foundation since 2001 and billions of dollars are being spent to fund it. After the isolation of Nature, its enslavement and its eradication, the human starts a new phase of the process now under way: a general metabolic assimilation and the substitution of a pseudo Artificial Nature for the Natural one.

11.

The hybrids of modern times don't indeed settle between animals and machines, but between *living machines* and already animalized technologies. One of the most dangerous manifestations of this process (also the one most overlooked) is the one that takes the form of an insidious spell that leads humans not only to being unable to distinguish animals from artifacts, but also to sincerely prefer the latter to the former.

12.

The MIT sociologist Sherry Turkle was one of the first to be sensitive to this phenomenon. In the 2000s, she realized that adolescents she met at the Orlando zoo find that artificial turtles are not only alive but *more alive* than the actual turtles that

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[11] The original version of that paper was read at the VISION-21 symposium of the NASA Lewis Research Center and Ohio Aerospace Institute, March 30-31, 1993. A slightly different version has been published in the 1993 winter issue of the *Whole Earth Review*. <http://www-rohan.sdsu.edu/faculty/vinge/misc/singularity.html>.

[12] Published in 1968 by Doubleday, the book would become famous after Ridley Scott's 1982 movie based on it, *Blade runner*. The film script can be read on Brian Silverman website at: bri@dcs.umd.edu.

these artifacts are supposed to imitate.[13] Such a situation is not only problematic, but is also very worrying if we put in the context of loss of biodiversity we have today. One can indeed consider that it is less a marginal epiphenomenon than an underlying trend that is emerging here and that we should evaluate its consequences carefully. Other anthropological studies can allow us to understand more precisely how such a situation could have occurred. Gary Paul Nabhan, for example, has conducted worrying investigations with indigenous peoples of the Southwest United States.[14] He noted that more than half the children surveyed have never spent more than only half an hour in a natural environment, and that an overwhelming number of them have never played with natural products (leaf tree, bird feathers, small bones left, etc.), or has ever collected some of them. Lexicographical works also show a dramatic fall of terms related to natural phenomena, species names, etc., used by people.

These observations take a taste even more disturbing when one realizes that the question of the animal and of the animality is simply absent from any Transhumanist contemporary literature. To my knowledge, the evolutionary microbiologist Lynn Margulis was the first to express surprise at this. Referring to her visit to the Star Trek Museum, she was amazed that in these films, there is never any question about non-human living, and such an absence appears to be a fundamental ecological absurdity. "The human journey into deep space requires ecosystem composed of many non-human organisms to recycle food waste."[15] Further, she said that living together as symbiosis and diversity will be as crucial for the colonization of outer space that it has been during the colonization of dry land in the Paleozoic Era. "Life in space," she wrote, "if it happens, will require physical alliances, including new symbiosis between different forms of life."[16]

In this perspective, in an era of species extinction, the post human can be considered, as what has been left by humanity when humans have disappeared. The theorist of the post human does not even think he no longer needs animals, he already does not think about animals. And why would he think about them: he adapts very well to the disappearance of species starting to prefer artificial animals to natural ones. And for him, from the time the animal must be reduced to a machine, one actually has more need of more efficient machines.

14.

More generally, this strange preference for artificial animals occurs in a context where what Turkle refers to as relational artifacts appear, the Tamagotchi being a precursor. These artifacts, which can more fairly be regarded as "emotional traps" than as simple machines, lead to kinds of cooperation in the form of powerful emotional

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[13] TURKLE. A nascent robotic culture: new complicities for companionship.

[14] NABHAN. Cultural parallax in viewing North American habitat, p. 87-101; NABHAN. The loss of floral and faunal story: the extinction of experience, p. 229-250.

[15] MARGULIS. *Symbiotic planet (a new look at evolution)*, p. 105.

[16] MARGULIS. *Symbiotic planet (a new look at evolution)*, p. 106.

arrangements. They commit us very heavily on the emotional level, very effectively *mimicking* emotional relationships we build with other humans or more generally with other living beings. One might add that in parallel with this creature's social engineering, we face the growing influence of technologies of friendship, like Facebook, which contribute to redesign concepts like friendship in a perspective that makes them more precisely accessible to relationships in which artifacts are involved.

These relational artifacts do not allow us to act differently but substantially transform the nature of the relationships we have with each other. The question is not whether robots will be able to love us one day but why we might like them – and we might add: and be loved by robots.[17] We tend to think that we would be mistaken if we would take these relationships seriously. Not because someone wants to deceive us, but because we come too easily to establish deep relationships with entities with which it should be impossible, given the conditions we usually deem necessary to establish them.

Turkle is more interesting when she explains that the fact that our parents or grandparents could say "I love you" to a robot that will respond "I love you" makes us uncomfortable and raises questions about the kind of authenticity that we demand of our technology. Turkle believes that we should not have robots that say things whose meaning they cannot understand. I would rather say that we should not be willing to sell out the rich and complex meaning of phenomena that constitute us as humans to be able to invite rather primitive artifacts into our intimate ecosystems at risk of seeing them wreck these frail ecosystems with the carelessness of the wilder but also the nicest primitives.

Computational objects do indeed not just do things *for* us, but they also make things *from* us – people. They deeply modify our ways of being in the world and the ways we see others and ourselves. Increasingly, technologies are putting themselves in position to do things *with* us, especially the "relational artifacts" here defined as technologies that have "moods" and encounters with which are enriched by understanding these "eigenstates". Turkle summarizes the situation by saying that we attach to what we feed.[18] And one might add, that what is worse is that we focus too (and maybe even more) on that we pretend to feed.

15.

The relation of man to relational artifacts must be analyzed not only in terms of psycho-sociology, as does Sherry Turkle, but also in terms of evolutionary adaptation. Such an adaptation would be very special because it would probably be the first adaptation of a living being that would be directed against living beings in general through an alliance with powerful artifacts. One quite terrifying hypothesis is that such a process does not show that what these American teenagers think is not a symptom of a malfunction of their cognitive processes but rather a profound human adaptation to the loss of biodiversity, *i.e.* a world in which natural animals have almost disappeared,

[17] TURKLE. Technology and human vulnerability.

[18] TURKLE. Relational artifacts; TURKLE. Caring machines: relational artifacts for the elderly.

replaced with artificial animals. This would therefore be an environmental challenge to the evolutionary sense of the word. From the moment an artifact can be considered more alive than a living thing, notions such as "nature" or "living being" change in a profoundly meaningful way to assume that they retain one. Somehow, Nature loses here its last chance against the radical predation of humans: the intrinsic value it might have as a community of natural living beings.

16.

It is obviously unrealistic to believe that humans can safely navigate these radical transformations. Will not human come to prefer artificial humans to real ones, such as adolescents who prefer artificial turtles to real ones? Writing in 1909, the American philosopher William James asked an early question.[19] He was wondering whether a man could fall in love with a woman who would be just as artificial as a real woman – and he answered in the negative, suggesting a relatively free argument: for him, a man could only love a woman who really would admire him – which is still out of reach of a robot. Since the days of James, the situation has nevertheless significantly changed. Real robots are starting to become more and more believable as humans. Androids become particularly more and more engaging.

Committing an artifact is an artifact with which we want to engage and toward which one is being engaged. The semantic ambiguity of the sentence is precisely what is at issue. Science fiction has long dreamed of such artifacts, but such robots already begin to exist. The roboticist Cynthia Braezel has experienced what might be called a "maternal connection" with Kismet, the android robot with which she worked. When she had to part with it, she felt a strong sense of loss. To build another Kismet would not have been the same. What is actually at stake is not the intelligence of Kismet, but the experience of Braezel as caretaker. Mothering a dependant machine creates significant attachments. For some researchers, the android robot can already establish an intimacy that is closer than that given by animals.

17.

Has the human ever seriously considered that he could survive the demise of nature? The fourth phase of the total enslavement of nature is also that of its disappearance. The post-human is the one who chooses the machine instead of nature and thus pushes the European technology project, mentioned above, to its extreme the European technology project mentioned above. Post human (or transhuman) is what happens to humans after he has freed himself from his animal heritage. Kathryn Hayles defines precisely the post human as the one who is not only coupled with intelligent

[19] A discussion of that paper is in FERRARIS. *T'es où?* ontologie du téléphone mobile, p. 144 *et seq*. but is quite different from mine.

machines but the one that is coupled to machines in a so intense and multifaceted way that it is no more possible to significantly distinguish between the biological organism and informational circuits in which the body is entangled

The adhesion of post human is even stronger because his entire body is replaceable at will, and that all his psychological characteristics are directly (albeit in a more or less complex way) of the features of its construction – i.e. of its software and its implementation in the body, particularly in the nervous system. The post human has less trouble to immerse himself in a machine now that he is already a machine. Moreover, the most fundamentalist trends of cognitive science have already prepared the field. The Harvard-based cognitive scientist Steven Pinker summarizes very well the substance of that situation, explaining that once the neurological and computational coordinators of the action-consciousness are isolated, there will be nothing left to explain. Nothing could be clearer.

As for the machinery concerned, they are supposed to be so intelligent that humans will simply no longer be competitive. Post human theorists, such as the roboticist Rodney Brooks or the cyberneticist Kevin Warwick, believe therefore that the only reasonable solution for the human will be to become a machine by assimilating himself with these technologies.

18.

Is the fate of the human-becoming-machine, however, as inevitable as the techno-prophets say? Nothing is less certain. In face of the danger of destroying the planet, three major options emerge quite spontaneously. The first one, still the most widespread, is to do nothing, or almost nothing. The second one is to try to cure evil with evil and further increase the pressure on technologies to save the world. This is the shallow ecology slammed by the Norwegian philosopher Arne Naess. The final one is to stop the technological development and return to a situation of yesteryear. Not one of these options is viable in my opinion. The first option is not only sterile, but also suicidal. The second one implies that we should even be more detached from the world to keep it, which is a form of learned blindness or a quite amazing form of schizophrenia – at least disturbing in both cases. The third one is to return to an Eden age, largely imaginary and unacceptable by most people, given our recent history. But a fourth option happily exists. It is not to turn away from technology, but to divert Western components that enclose it in a sphere of aggressive and moralistic meaning (precisely that which arises from the myth of Epimetheus and Prometheus) and that lead to ecological disaster that we live today. In other words, faced with post human technologies that are fundamentally autistic and paranoid technologies, can one imagine *connective technologies*, *i.e.* techniques that seek to connect the human to world and nature and to put one away from pathological tendencies that already have so destroyed the world?

Connectives techniques are techniques close to nature (and not close to the way nature runs) and very different from traditional Western allotechniques that are built on functions against nature and abstract geometries

Other cultural approaches have focused particularly on connectivity and have developed techniques to achieve more satisfactory that task. A critical approach to indigenous technology, for example Indian technologies, would in particular allow us to see their diversity and power. But they should be recognized as genuine technologies, techniques that are established to connect the man in the world and nature, not just the techniques used to externalize it from them and increase his control over them. Such a task would require taking into account, in particular, all the techniques that help man to get in touch with the natural and supernatural beings (spirits, demons, etc.) particularly the so-called shamanic and spiritual techniques (meditation, etc.) and not consider a priori that these technologies are only trivial folkloric ones, that would be solely based on delusion, quackery and social manipulation.

19.

Western technology was conceived for the ancient Greeks as an activity that allows humans to escape Nature and take a deserved revenge on other animals. These technologies of power have increasingly become autistic and paranoid, and endanger all living beings on the planet. I have hypothesized that animalized artifacts, in particularly, have entered into cultural and evolutionist competition with these living beings. A human has little chance to escape this process of generalized trust of universal hybridization that results from NBTIC technologies. Though more serious than what we usually think, the situation is not necessarily hopeless. To restore the centrality of connective technology could substantially modify the situation, but we must recognize that salvation can only come from a revolution more radical than political revolution – a genuine revolution of civilization

Resumo

Os híbridos dos tempos modernos não residem de fato entre os animais e as máquinas, mas entre as máquinas vivas e as tecnologias já animalizadas. Uma das manifestações mais perigosas desse processo (que é também o mais negligenciado) é que ele toma a forma de uma magia insidiosa que leva os seres humanos não só a não serem capazes de distinguir os animais de artefatos, mas também a sinceramente prefirirem estes em detrimento daqueles.

Palavras-chave

Híbridos, animais, máquinas, tecnologias

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