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The Animal as the Future of the Human: The Zoo-futurist Perspective in Question

Dominique Lestel

SUMMARY : “My article proposes a reversal of perspective organized around three ideas. 1) The first idea is to think of the specific status of humans in relation to other animals, not in terms of unique characteristics that would set them apart from other animals (the logic of ‘Proper to Man’), but in terms of their capacities (metabolic, behavioral, cognitive and cultural) to relate to other animals in a way that no other animal is capable of doing. To my knowledge, this is an idea that has never yet been systematically studied. 2) The second idea is that one of man’s possible futures, but also one of his hopes, is to reanimalize himself, i.e. to become more animal than he is. A growing number of artists are moving in this direction, more and more humans feel they belong to another species, etc. This emerging phenomenon deserves serious philosophical consideration. The modification of the Earth’s ecology (pollution, etc.) and the dream of space exploration are leading the species to modify itself accordingly. 3) The third idea is that, in order to meet certain challenges of the future, particularly the distant (or even very distant) future, philosophy must not hesitate to transform itself in depth. One way of doing this is to get closer to science fiction – which the covid-19 crisis and the recent confinement of half the planet in a few months has shown to be a more realistic literature than we might have thought.”

In a very religious space such as that of the Middle Ages, the “Proper to Man” referred to the theological characteristic: the soul. With the secularization of European societies, the reign of “Enlightenment” and the emergence of a Darwinian conception of life, the situation has become more ambiguous. The proper to human is now expressed through particular phenomenological characteristics: among others, language, reason, culture, empathy, metacognition, to mention only a few striking examples. Far from clarifying the situation, such a transformation has only made the notion even more difficult to conceptualize in a satisfactory way. Empirically, because the new animal sciences repeatedly show that what was supposed to distinguish humans from other animals is found in other species. Conceptually, then, because notions that were thought to be clear are in fact not so clear. Technologically, finally, because the human difference is no longer only challenged on the human/animal front but also on the human/machine front with the appearance of very powerful AI and robotics. Does this mean that a notion such as the “Proper to Man” should be consigned to the shelf of the obsolete? The die is far from being cast and the perspectives that are opening up to philosophers are already fascinating.

1

The notion of the “Proper to Man”, which has long been considered as a pivot of Western cultures, is a very complex notion that is more difficult to think about than what we usually imagine. It can be characterized by the conviction that humans possess at least one characteristic that not only separates them from animals, but distinguishes them so much from them that it takes them out of animality. The notions mobilized for this purpose have been numerous and have varied throughout history. In the Christian West, the soul played the leading role, mixed with less spiritual skills such as language or reason through which it could make itself visible. In a more materialistic and atheistic West, strongly influenced by the Darwinian perspective, the soul has lost its importance in favor of the more natural characteristics that traditionally accompanied it. In fact, there are many animals that have characteristics that are not found in any other animal, without these

characteristics taking them out of animality. The “Proper to Man” is therefore a hybrid entity, both zoological and metaphysical, which attributes a special status to natural characteristics.

This secularization of the “Proper to Man”, the supposedly properly human characteristics, confronts the notion with serious empirical and conceptual difficulties. It comes up against four major problems in particular.

1. The first one takes the form of counter-examples to be managed. Ethology and comparative psychology have shown for some decades that the majority of supposedly properly human characteristics can be found in certain animals. A somewhat brutal but difficult way of expressing this is to say that it has become almost impossible to find a human characteristic that is not found, in one form or another, in *at least* one other animal species.

2. The second problem that arises from this is that of the inadequacy of the conceptualization given to a phenomenon or a complex activity. A telling example is that of the primatologist Barbara King who shows that the chimpanzee mother who tolerates her son’s stealing of the food she is going to eat, *and him alone*, can be considered as a passive teaching situation since the little one learns in this way, through the mother’s activity, what he can eat and what he must avoid ingesting.¹

3. Hence the third problem encountered, which is that of intercultural differences and the ethnocentrism adopted to account for the “Proper to man”. Members of some cultures may have developed skills that Westerners have lost, never developed or destroyed—such as the ability to interact with ghosts. What about animals?

4. The fourth problem is new, and also the most problematic. Today, almost all of supposedly properly human characteristics that are highlighted are cognitive skills, and the spectacular progress of AI is leading machines to do not only everything that humans can do—but especially to do it better. This was already the case with the computing

capacities of computers, disproportionate to those of humans. But it is now the most human of human skills that are being challenged: language, but also the most elaborate cognitive skills such as reasoning, decision making and complex strategies. The very recent revolution in programming in terms of neural networks (Deep Learning) is shattering any remaining illusions – a situation that appeared in all its glory (or horror...) in 2017 when an AI program, *AlphaGo*, beat the world champion of Go.² No one today is able to give an example of something that could be done by humans and never by a machine.

The situation is therefore delicate for the advocates of a “Proper to Man”; should we abandon the notion for all that? It is not so simple. The defender of the notion can indeed counter-attack by means of three distinct strategies. *Strategy 1*: bring out new discriminating characteristics. For example, by pointing out that what is proper to Man is not to have characteristics found in at least one animal species, but to have them all at the same time. *Strategy 2*: consider that what gives a special status to humans is purely cultural. This is, for example, the approach taken by Cora Diamond when she explains that a fundamental characteristic of what it means to be human is that it is not because one is human that one cannot eat one, but precisely because one cannot eat one that one is human.³ *Strategy 3*: to stop making the “Proper to Man” a status that distances him from other animals and to transform it into a characteristic that brings him closer to all other animals than any other animal is capable of doing. This is precisely what the zoo-futurist perspective is moving towards.

2

The Zoo-futurist perspective engages humans in particular forms of identification with animals.⁴ Zoo-futurism does not come from an existing movement that claims to be such. It identifies a phenomenon that is becoming more and more important but that still remains largely unthought and that refers to the desire of a growing number of humans to animalize themselves, not in a purely metaphorical way, but through anatomical,

physiological and metabolic transformations. My intuition is that this is less about the drift of a few sick minds (or not just them) than the premises of an unprecedented relationship to animals and animality. Philosophically speaking, what does this “reanimalization of the human” mean and to what extent does it force us to rethink what “being human” means? Zoo-futurism thus designates the attempt to think of the boundary between humans and other animals in a way that is different from the sterile framework of “Proper to Man”. The questioning of this dichotomy is not new. The Zoo-futurist perspective is, however, more radical than the animalist movements that question any form of “human privilege”.

Far from claiming any equality of status between humans and animals, the Zoo-futurist perspective believes that the animal and animality constitute an attractive horizon for the “human-in-becoming”.⁵ Above all, it opens philosophy to a hitherto neglected question, which is that of knowing what it means to “be part of a species” and “to be part of one’s species”. It questions the relationship of the individual to the species and to phylogenesis from the point of view of the first person, and it tries to conceptualize phylogenesis itself as a space in which one can circulate rather than as an inheritance from the past that one would have to assume more or less passively. It takes evolutionary thought out of the conventional framework of biology and opens up new perspectives on what the future of “humans” and of living beings in general might be.

The Zoo-futurist perspective thus wants to think of forms of identification with the animal which materialize through multiple and interwoven processes of physical and metabolic transformations—and the artistic space today provides the most fascinating examples of this—for example in the installation by Eduardo Kac during which a human can become a bat in the middle of the bats thanks to a device of augmented reality⁶ or in the performance of the A.A.O. collective, during which Marion Laval-Jeantet was injected with horse blood and experienced very peculiar existential modalities.⁷

These processes of identification with the animal exceed the space of becoming-animals which remain largely psychological and of which one finds many examples in the anthropological-historical space, in the psychiatric space, in the ethological space, in the

literary space and in the artistic space. The study of shamanisms shows that many shamans are involved in becoming-animals that is difficult to reduce to simple models—as shown by the Amazonian shamans who are reputed to be able to transform themselves into jaguars as part of their practices.⁸ But such a tendency exists in the very heart of Europe and not only in distant lands. Thus, in the Jura, hunters obsessively talk about the need to identify with the hunted deer in order to achieve success, as well as with the dog that accompanies the human.⁹ It is not surprising that psychiatry shows many fascinating examples of the animalization of the human, because in our cultures it is one of the few fields where such desires find a certain legitimacy. In one of his best-known books, the neurologist and writer Oliver Sacks describes the case of a student who took too many amphetamines and turned into a dog.¹⁰ Many testimonies of people who have taken psychotropic drugs mention situations in which the subject becomes “animalized”. Sociology is no exception. I will just give an example of contemporary phenomena of animalization of some humans such as the Human Pups—adults who disguise themselves as dogs (leather, hoods in the shape of dog heads, canine tactile interactions such as belly rubs or tickling the ears and meals eaten from bowls on the ground and who live as much as they can like dogs).¹¹ A dedicated website, *NEPups*,¹² clearly explains that “it’s all about liberating the animal part in you”. Ethology is also a fascinating space of becoming-animals that embark on still very different paths. Margaret Mead and Gregory Bateson had thus been durably impressed by the capacity of the Austrian ethologist Konrad Lorenz to become the animal of which he spoke during his conferences. More generally, many field ethologists are able to slip into the skin of the animal they study in an amazing way.

All of these examples highlight a phenomenon that has so far remained largely neglected by philosophy—the desire of a significant number of humans to animalize themselves, or to reanimalize themselves, present in a recurrent way in history in all cultures and at all times in diverse forms. This phenomenon is both highly complex and extremely diverse, and it is necessary to be careful not to give too quickly an interpretation of it that could satisfy superficially rationalist explanations and that would erase some of its disturbing asperities. It cannot be satisfactorily explained by forms of trans-specific empathy or through a form of “biostalgia” that would express a certain nostalgia for the species we were and no longer are, or

for the species we could have been and never were. What is at play here is far from being clear but it is doubtful that one can think of the majority of the available testimonies through the very Western dichotomy that carefully distinguishes what is “real” from what is only “imagined”.

3

The major objection to the Zoo-futurist perspective is the belief that the natural world is well-ordered and that it is not possible to do whatever one wants in it. One must follow the “laws of nature”. The desire to change species or to “explore” species that are not one’s own is an attitude that sounds strange to our ears because we are convinced that we are part of one species, and one species alone, and that we cannot change that. Such a conceptual rigidity is based on a largely erroneous representation of what a species is. Hence the need to recall a major truth that we tend to forget: no biologist is able to define a species in a way that all of their colleagues agree with, so much so that the question of species turns out to be an ethical question before being a scientific one.

In a text that remains in my opinion the best on the subject, the philosopher Philip Kitcher shows that it is impossible to define species in a purely analytical way, in other words, to define it at all.¹³ He believes that a “cynical” definition of species is the most correct: species are groups of organisms that are recognized as species by competent taxonomists, i.e., those who are able to recognize species “correctly”. At best he is willing to concede that species can be divided according to a “software” that would be specific to each but looking for a “hard wiring” to do so is a waste of time. It is therefore impossible to agree on a definition of species that everyone can agree on. In Kitcher’s view, biologists have multiple, non-homogeneous conceptions of species at their disposal, which they mobilize according to needs and circumstances. In 2003, there were between 9 and 23 definitions of the species in biological literature!¹⁴ The human species is obviously not an exception. The sequencing of the human genome has been an objective failure from this point of view. If humans share 99.9% of things in common at the genetic level, nothing has been identified as absolutely common to all human beings.

The situation is further complicated by the fact that humans share a large part of their DNA with a wide variety of species whose proximity to humans is far from being self-evident—mice, of course, but also worms or yeast. As a result, Leon Eisenberg can write that we recognize a human when we see one without being able to characterize it rigorously as a species.¹⁵

To forget the notion of species would however be premature. First, because the difficulties encountered in defining a phenomenon do not mean that the phenomenon does not exist. We can clearly see the difference between a cat and a crab, but it is difficult to characterize these differences from a notion such as that of species. Secondly, because morality has taken hold of the notion of species; it actively mobilizes it to counter any form of hybridization of humans with other species. It is even today one of the strongest taboos of our societies and bioethicists appear in this respect as the new censors of the moment. Humans are masters at hybridizing species with each other. Since the Neolithic period, it has been the basis of all domestication. Humans, however, are supposed to keep a privileged status. Significantly, it is not even the introduction of non-human genes into humans that leads to the most heated debates—such a possibility is not even seriously considered; it is more paradoxically the possibility of introducing human genes into animals that arouses indignation and opprobrium. In 1984, the ethics committee commissioned by the British government and headed by philosopher Mary Warnock recommended that interspecific embryos be limited to the two-cell stage and that any project involving hybrids that was not related to fertility problems should be considered a crime. Peter Morris rightly wonders what such legislative hysteria¹⁶ means when there is no rational reason to refuse prohibited practices, and he draws on the work of anthropologist Mary Douglas to suggest that mixing species remains a major taboo and is perceived as something disgusting. We are in the most traditional moral register and the situation is even tending to deteriorate. Thus, in 2011, to give just one more example, the British Academy of Medical Sciences proposed to prohibit the transplantation of human neurons into monkeys in order to increase their cognitive skills, which humans have until now had a monopoly on—like language, the manipulation of germ cells in such a way that human/ape hybrids are viable and... give

animals a face that resembles humans.¹⁷ Such prohibitions, let's face it, are quite pleasing to the evil-minded who see in them the hope of exciting extraspecific affairs (like "extramarital affairs") to come. The legislator, stiff in his official clothes, rarely makes a fool of himself by prohibiting purely imaginary practices.

In such a burning moral context, what does the "reanimalization of the human" that Zoo-futurism proposes mean? The proximity of humans to other species remains an explosive subject. The human/animal boundary is so delicate to deal with because it is not only extremely fragile but also constantly shows dubious porosities which are of lasting and deep concern to human societies, Western societies in particular. This boundary is all the more worrying in that it appears less as a biological given that should be taken into account than as a cultural imperative that should be constantly recalled and reactivated, even if it is by law. For the Zoo-futurist position, the reanimalization of the human constitutes a way of characterizing the human in an unprecedented way, since it is no longer a question of looking for the specificity of the human in a splendid biological isolation that has never existed with the other species, but in its cultural and technical capacity to get closer not only to other species, but potentially to all the existing species, in one way or another. Phylogenesis thus goes from the status of a heritage to be assumed to that of a playing field in which one can express one's humanity in a different way. The ultimate stage of Zoo-futurism being, one suspects, to invent new biological species that it would be possible to "visit". In the end, the Zoo-futurist position proposes a fertile, exciting and non-judgmental alternative to the transhumanist movements that activists dream of as perfect, immortal machines beyond the reach of the insidious diseases that threaten us all. Instead of this sanitized and devitalized future, the Zoo-futurist perspective proposes to human beings not only to become more animal, but to become so in an unprecedented way.

4

Traditional academic philosophy, whatever its conceptual options, will view the Zoo-futurist perspective with suspicion, calling it "science fiction". It will be right about the

diagnosis while drawing the wrong conclusions. A promising future for philosophy lies precisely in its capacity to hybridize with science fiction, which is emerging as the most appropriate literary and artistic form for thinking about some of the most audacious trends of the time. Gilles Deleuze had anticipated this mutation when he wrote that “A book of philosophy should be in part a very particular species of detective novel, in part a kind of science fiction”.¹⁸ Science fiction then becomes a way of thinking about the world and science fiction literature is one modality among others. What is commonly called “science fiction” covers indeed two very different approaches: a way of thinking the world, on the one hand; and a way of practicing this thought, on the other hand. What we designate as “science fiction” is a particular way of thinking the world through a particular “vehicle” which is the novel, the short story, films or mangas²⁰—but it can just as well be a more conceptual essay of philosophy. The philosopher then finds an interest in science fiction that concerns as much the narrative forms that are mobilized in it as the ideas they engage that are tested in it.

Avoiding Major Pitfalls

Such an approach allows one to avoid the four main pitfalls encountered by those who want to establish points of convergence between philosophy and science fiction. The goal is not to determine, as in foresight, what would have the greatest chance of happening,²¹ but to build the space of possibilities by daring to discuss even the most improbable scenarios *a priori*. We must avoid neutralizing the power of non-standard ideas by turning them into ways of talking about something else—for example, “late capitalism”—but take extreme hypotheses seriously and see how far we can really support them without encountering friction or resistance.²² It is no longer a question of seeing science fiction only as sources of above-ground thought experiments (for example with Putnam’s brain in a vat) which only serve to illustrate an idea, but of setting up *fictional mises-en-scène* through which to think about notions still uncultivated. Finally, we must reject the temptation according to which philosophy should henceforth be expressed through science fiction stories that would replace more traditional philosophical expositions.²³

that are mobilized by analytic philosophy but that are quickly neutralized by an excessive importance attributed to prior definitions by considerably limiting the scope of the exercise.

The World as a Space of Improbable Possibilities

A further step in this direction leads philosophers themselves to consider ways of philosophizing that are inspired by science fiction writing without themselves going through more or less entertaining narratives. The philosopher must himself imagine divergent worlds, explore their coherence, taste their promises, embark on the path thus opened up and make of them intellectual devices from which to think a present that overflows into the future. From this perspective, the particularity of science fiction lies in its capacity to show the world as a space of extraordinary possibilities which are always only imperfectly accomplished, which can always switch to other possibilities –future, or not–and which have the rare and intriguing property of being only a *posteriori* part of what could have happened. It is then always possible to bring out possible parasites through discursive technologies such as fiction. One of the first to have theorized this situation is the French philosopher Charles Renouvier when he published in 1876 his essay on *Alternate history* [*Uchronie*]. Its basic premise is frighteningly simple: what happened could have happened differently. Such a proposition has a subversive charge that we are far from having explored, and reducing it to the idea that we must make room for the contingent in the world greatly impoverishes its meaning. A correlate of this proposition is clear: if what happened could have happened differently, then what could happen could happen differently than we imagine, even about what we are sure of. By rewriting history, alternate history allows us to better understand the world we live in today.

Zoo-futurism as Science Fiction and as Philosophy

The Zoo-futurist position must therefore be considered as a philosophical hypothesis *and* as a science-fiction scenario–this ambivalence is at the heart of the

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attraction it arouses in us or, on the contrary, of the rejection it causes. My perspective with Zoo-futurism is neither ironic nor metaphorical. Wanting to change species (or even to feel that we are of another species than the one we happened to be born into) or wanting to explore non-human species seems extravagant today because we are still haunted by the humanist vision that has developed since the Renaissance according to which humans are unique and must be given special treatment, but I am willing to bet that it will be more widely accepted in twenty or fifty years. Animalists are excessive in equating animals with species of humans, but they make a convincing case that the human being should no longer be considered the intangible frame of reference to which traditional humanism has accustomed us. They place too much emphasis on an outdated paradigm of living in harmony *with* one another when the central issue is increasingly becoming one of living *within* one another—each becoming an ecosystem of at least many others.²⁶ Re-animalizing ourselves does not consist in going backwards, on a partly imaginary phylogenetic axis, but in reactivating neglected evolutionary potentialities. The end of History may be closer than we imagine (or than we fear) but it will certainly not be Hegelian—even if reread by Kojève.

5

Philosophy is rarely at ease with imagination because most of its practitioners today have a very austere conception of its practice, and imagination is too often perceived as contradictory to the seriousness of a rigorous rational analysis. Contemporary philosophical thought shows a suspicious attraction for reasonable forms of thought, whereas the world is anything but reasonable.²⁷ The Zoo-futurist perspective deliberately settles into a more playful and daring intellectual space, that many academics still look at with some concern. A place must be given again to what might be characterized as *extravagant forms of thought*, which have no reason to be far-fetched or absurd for all that. The adjective “extravagant” must be understood here in its original sense—*veering off well-trodden paths*. The originality of such a request is only relative. Extravagant thinkers have always existed—and the best ones have shown a singular

fecundity, whether it be Chuang Tzu in China or Giordano Bruno in Europe, or many others—but academic philosophy has always been uncomfortable with such artistic thinkers;²⁸ it is difficult to be both the Guardian of the law and the one who transgresses it. The proliferation of ruptures that fracture the world today make it difficult to grasp with traditional intellectual tools. Some theorists no longer hesitate to predict a new “Dark Age” in which the world we create with our most elaborate technologies becomes more and more difficult to think about,²⁹ contrary to the hopes placed in technological and scientific progress by the Enlightenment thinkers. Others explain to us that from an evolutionary point of view, human cognition is formatted to have a pragmatic access to the world that has little to do with what it actually is—and that we should expect surprises³⁰ when it comes to the nature of the world. One can deplore these adventurous lines of flight or, on the contrary, rejoice in them and consider that they offer formidable opportunities for a philosophy that would not come to think the world after the fact, but would actively participate in its invention. The Zoo-futurist perspective, which is very speculative and which assumes itself as such, must be seen as a part of a renewal of philosophy which no longer hesitates to give imagination a central place and which agrees to hybridize with science fiction. It is not a question of reducing philosophy to this speculative tendency but of developing alternative ways of practicing it by embarking on paths that remain untouched and that could provide interesting contributions to the understanding of the world-in-becoming. The philosopher should not hesitate to become an intellectual adventurer again.

Translated from French by Priyanka Deshmukh

Endnotes

1. A good synthesis of Barbara King’s approach can be found in: B. King, *The Information Continuum. Evolution of Social Information Transfer in Monkeys, Apes and Hominids*. Sante Fe: School of American Research Press, 1994.
2. D. Silver, J. Schrittwieser, K. Simonyan, *et al.* “Mastering the game of Go without human knowledge”. *Nature*, vol. 550 (7676), October 19 2017, p. 354-359.

3. C. Diamond. "Eating Meat and Eating People". *Philosophy*. vol. 56 (206), Oct. 1978, p. 465-479.
4. There is no movement that claims to be Zoo-futurism. This term first appears in a lecture I gave in 2013 at the ENSAD and in 2016 at the University of Paris 1, a synthesis of which can be found in: D. Lestel. "Posture zoo-futuriste et 'réanimalisation de l'humain'". *Anthropologica*. Vol. 62 (1), 2020, p. 151-162.
5. "Human-in-becoming" and not "human-to-come" which expresses an evolution that is too linear and too conventional for the human of the future.
6. S. Milevska, 2000. "From a Bat's Point of View". *Eduardo Kac. Telepresence, Biotelematics, and Transgenic Art*. Maribor: Kibla Art Gallery, 2000, p. 47-57.
7. See M. Laval-Jeantet. "Que le cheval vive en moi !". C. Pirson (ed.). *Art Orienté Objet. Marion Laval-Jeantet & Benoît Mangin*. Paris: Éditions CQFD, 2012, p. 248-269.
8. E. Kohn. *Comment pensent les forêts*. Bruxelles: Zones Sensibles, 2017 and E. Viveiros de Castro. *Métaphysique cannibales. Lignes d'anthropologie post-structurale*. Paris: PUF, 2009.
9. B. Hell. *Le Sang noir. Chasse et mythe du Sauvage en Europe*. Paris: Flammarion, 1994. Through the metaphor of "black blood" evoked by the hunters concerned, the author shows that it is a physical transformation that gives a special place to smell, but not only. "Under the influence of the black blood, Man approaches the animal stage. His social nature is gradually diluted. He loses the ability to express himself like humans. His voice becomes hoarse. Sentences give way to grunts. He even forgets his identity. He no longer remembers his name" (*ibid.*, p. 82).
10. O. Sacks. *The Man Who Mistook his Wife for a Hat*. New York: Simon & Schuster, 1985. In his autobiography, *On the Move*, Sacks admits that it was him.
11. Such practices come from the BDSM community but in this case, the sexual dimension is apparently absent or at least very secondary and we are in another phenomenon.
12. See for example the website "An Illustrated Guide to Human Pup Positions" [URL : <https://www.devianceanddesire.com/2016/10/illustrated-guide-human-pup-positions/> (Accessed on 23/12/2020).]
13. P. Kitcher. "Species". *Philosophy of Science*. Vol. 51 (2), June 1984, p. 308-333.
14. R. L. Mayden. "A Hierarchy of Species Concepts: the Denouement in the Saga of the Species Problem". M. F. Claridge, H. Dawah & M. R. Wilson (eds.). *Species: The Units of Biodiversity*. New York: Chapman & Hall, 1997, p. 381-424.
15. L. Eisenberg. "The Human Nature of Human Nature". *Science*. Vol. 176 (4031), April 1972, p. 123-128.
16. P. Morris. "Blurred boundaries". *Inquiry*. Vol. 40 (3), 1972, p. 259-289.
17. A. Abbot. "Regulation Proposed for Animal-Human Chimaeras". *Nature*. Vol. 475 (7357), 2011, p. 438.
18. G. Deleuze. *Difference and Repetition*. Trans. by Paul Patton. London & New York: Continuum, 2001, "Preface", p. xx. In the purely continental tradition of philosophy, I had considered naming this essay "On a Sentence by Deleuze" [« Sur une phrase de Deleuze ».]
19. The use of this notion of "vehicle" is only a superficial borrowing from Buddhism, as everyone can see.
20. A notable example is *Ghost in the Shell*, which first took the form of a manga before becoming a film.
21. See for example G. Hottois. *Species Technica*. Paris: Vrin, 2002, p. 218.

22. A perspective that we find for example in Fredric Jameson's work when he explains that his model is the historical study on the historical novel that Lukács published in 1936 (cf. F. Jameson, *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions*, London & New York: Verso, 2005, p. 284).
23. A perspective that we see for example in Guy Lardreau. *Fictions philosophiques et science-fiction*. Arles: Actes Sud, 1992.
24. I. Stengers, 2000. "Science-fiction et expérimentation". G. Hottis (ed.). *Philosophie et science-fiction*, Paris: Vrin, 2000, p. 97-113.
25. G. Deleuze and F. Guattari, *What is Philosophy?*. Trans. by Hugh Tomlinson and Graham Burchell. New York: Columbia University Press, 1991.
26. In *Métamorphoses* (Paris: Payot & Rivages, 2020), E. Coccia proposes an original and stimulating perspective.
27. That the world is not "reasonable" does not mean that it is not "rational".
28. A philosopher, unfortunately a little forgotten, Jean-Noël Vuarnet, published a small fascinating book on philosophers-artists: J.-N. Vuarnet. *Le Philosophe-Artiste*. Paris: 10/18, 1977.
29. See for example, J. Bridle. *New Dark Age. Technology and the End of the Future*. London: Verso, 2018.
30. D. Hoffman. *The Case Against Reality: How Evolution Hid the Truth From Our Eyes*. Great Britain: Allen Lane, 2019.