

Cybernetics and Creation

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Keywords:

Artificial intelligence, computer science, Cybernetics, information technology, modeling, posthumanism, robot, semiotics, simulacrum, simulation, technoscience.

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Abstract:

There is a genealogy to Abraham Moles' idea that the use of some 'computing machine' would allow us to take the first steps in understanding creativity. For example, in 1871 Charles Cros had devised a machine to simulate sight or hearing, that he proposed to replace the direct study of structures that determine these functions in living beings, in a treatise entitled *Information Theory and Esthetic Perception*. These were cinetic templates that he thought should make it possible to study "the apparatuses of perception, thought and reaction" which, he said, were "by nature, obscured from direct observation." Today, the question is no longer whether 'robots' are capable of intelligence or creativity. They can only exist when 'endowed' with these powers by 'naturalization,' because we neither want nor, thus, are able to consider the invention of a technology unless it is able to surpass us; meaning if they can, first of all, somehow show themselves to be in our image. However, in the area of art, it is only a matter of discouraging us from 'going there to see for ourselves,' by the production of a machine which offers all the signs of reality, but which only gives access to its double, which, in turn, we only accept because we long for it.

I. The Creativity Myth

In the early 1970s, the group “Art et Informatique” (Art and Computer Science) at Vincennes University brought current thought on the dialogue between humans and machines up to date, through a manifesto. A short version was presented in an article by Bernard Teyssède (1977: 32)

“Rather than a marriage of convenience, between artists and computer scientists, under the regime of mutual concessions (which is the common lot of couples), let us attempt the experience of parthenogenesis. Let artists experiment in computer disciplines, so as to intimately integrate their possibilities, in order to add to their longings, formalized knowledge of what they are exploring. The construction of an algorithm (or the logical expression of an aesthetic idea) does not seek to robotize the production of artworks. Nor does it target the domination of machines by humans. It seeks to generate a new order of aesthetic creativity, through original encounter between subjective imagination and the imagination of artificially intelligent automates. The computer: A machine for formulating dreams.”

The issue immediately raised by this ‘new order’ is the following: Is this simply a matter of cooperation between artists and scientists, or of collaboration, or even of ‘collaborationism,’ through a convergence of the ideologies that influence each field? It is clear that the interest in so-called ‘artificial life’ simulations lay, at that time, in how they reinforced how we thought about and interacted with the world. It arose from the major movement of mathematical modeling of natural phenomena that began in the eighteenth century, as well as from the senses or the intellect that they affected. Yet even if building a machine that gave one the impression of ‘being’ or of ‘existing’, as described by Parmenides, could be accepted, in the field of experiential or empirical science, as simply efficient, as simulations freed of their negative connotations; the same does not necessarily apply in the area of art practices, in which machines may well be nothing but a simulacrum.

In his article, Bernard Teyssède conceptualized ‘a new order of aesthetic creativity’ proposed by the Vincennes ‘Art et Informatique’ group, by calling it ‘artificial creativity,’ as opposed to ‘natural creativity.’ Yet, he immediately pointed out that no creativity is purely natural. “In any human activity whatsoever, is it possible to point to a confined field, that would be pure ‘nature,’ unfamiliar with any social practice or ideology? [...] Where is Nature?” (Teyssède, 1977: 34). And he concludes with the idea that what is ‘natural’ is not what nature has produced, but what has been ‘naturalized’ by culture.

But why would one want to naturalize creativity? According to Teyssède, some people, with computers and the emergence of ‘artificial creativity,’ consider creativity in danger of being weakened and disparaged: “What [the humanist good conscience wants] to save, at all costs, is the noun that acts as a support to the rivaling adjectives ‘natural’ and ‘artificial’: Creativity. Proposal 1: ‘Creativity that no one has ever examined, and still less revealed the processes of, is said to be natural,’ has, as a rigorous corollary, proposal 2: ‘It is using computers that makes us take the first steps towards the understanding of creativity.’” (Teyssède, 1977: 34). Mythology around the computer, in art practices, would thus find its roots in cybernetics, as a ‘general science of the workings of the mind’ – according to the definition given in the ‘Macy Conferences,’ which brought together an interdisciplinary group of mathematicians, logicians, anthropologists, psychologists and economists (Dupuy,

1994), between 1942 and 1953 – where the philosophy of the ‘subjectless’ mind, the computing machine, being the mere accessory of this project: “He/She who wants the object, wants the tool” (Klossowski, 1994).

Indeed, from the moment computers were demythologized as a ‘stupid’ calculating machines, it became possible to redeem their programmers: “Artists raised to the zenith of their concepts, who know how to handle this tool with more-than-natural faculties, and delegate ‘artificial’ creativity to the computer, because it participates in the Creator. Thanks to computers, humans are restored to their rightful place as beyond-nature: Humans act in the image of God.” (Teyssèdre, 1977: 35). Humans would be the sole possessors of ‘true creativity’ which, being creative, can only be human, but nonetheless remains mysterious, almost mystical: the artist’s talent. The ‘naturalization’ of creativity would aim solely to bring human subjects back to their transcendental dimension, without concern for the growing number of problems that can be handled by machines, or the decisions machines can make in all sorts of areas.

Nevertheless, to consider a creative process that has become conscious as ‘artificial,’ paradoxically only leads to disparaging ‘natural’ creativity, by demoting it, in ignorance, of its resources and goals. Consequently, it would only be the ultimate escape from a questioning of ‘creativity’ conceived as a knowledge project, focused on operational control, as proposed by a cybernetics, because this is indeed what one is inevitably led to, when following Bernard Teyssèdre’s reasoning: If ‘natural’ creativity exists only in its naturalized form, then all creativity is artificial, and can be modeled or simulated. That would explain why, since the end of the scientific positivism period, art has made use of science in an ambivalent, often metaphorical, sometimes even somewhat shameful ways. All the more so, since science has been able to claim it is art only by transforming itself into technology: meaning, by giving itself the goal of becoming a general treaty on art, which has only been able to do through simulation – thus, being precisely not what it does not want to be, since it then ceases to be sovereign. The revival of a ‘appetite for technology’ at the beginning of the twenty-first century, especially with the influence of posthumanism, shows, however, that this pattern can be reversed at any time.

At this stage of the paper, new questions arise: Are cybernetics in artistic practices a new tool supporting *mimesis* – art as an imitation of reality – or are they rather destined to show the very workings in the modernist prolongation of ‘art for art’s sake,’ and as the matrix of posthumanism? Given that Plato used the term κυβερνητική (cybernetic) to designate the steering of a ship, and André-Marie Ampère used it in 1834 to designate the art of governing people, and that it was proposed by the American mathematician Norbert Wiener to promote a unified vision of the emerging fields of automation, electronics and mathematical information theory, as the “whole theory of control and communication, both in animals and in machines” (Wiener, 1948), can one associate the terms ‘creation’ and ‘cybernetics’ from the poietic point of view, as ‘science of creative behavior,’ and particularly from the viewpoint of the poietics of René Passeron (1996)? As Plato suggests in *Sophist* (236 ad), should we not, rather, give cybernetics, in the field of ideas, and thus in the art that expresses these ideas, “because it seems to resemble, but does not really resemble it, the name simulacrum?”

2. Three Metapattern Positions

Cybernetics has allowed the issue of consciousness be addressed once again, revising fact that no representation resolves the fact that one feels what one feels. Not knowing itself, like any 'technoscience', neither in its reality, nor in its value, it accomplishes a principle of non-separation of representation plans, that amounts to a denial of reality. So, among others, there are three possible positions, regarding art creation and reception. First, anesthesia is the direction that all involved players in art and cultural production and reception converge to, in that they renounce all decision-making or evaluation power, in terms of what cybernetics makes possible. Secondly, pleasure is a "fetishizing" behavior, which can include the past and future of cybernetics, by establishing its abstractions as objects of desire, without regard for their goals, other than on a personal level. Thirdly, strikes, in various forms, are the realization of the myth that individuals rid themselves of their tyrants, by undertaking their own negation.

These three figures refer to the process of a twentieth century which ended with exhaustion of an unattainable achievement, and 'restoration' which marked the passage to the twenty-first century. It is not only the return of bourgeoisie with its unequivocal imperative to, "enrich yourself." It is also a mutation of technological organization, going from the system of predictable progress to that of accepted unconsciousness. Everything that technology can do today – and everything it can do tomorrow – will come to pass despite all ethics committees and targets. So the watchword of the beginning of this century is, 'try me.' Its ignorance is that of total war, which it claims to eradicate, though its own virtue, and its forgetfulness that all will contains violence.

3. Anesthesia

The transition from the twentieth century to the twenty-first century, from anti-dialectical modernity, in a precarious balance between trace and achievement; to digital postmodernism, is characterized by renunciation of the Nietzschean imperative of the "will to power," meaning renunciation of the idea of a new person who would be of his or her own invention; for that of a person conditioned by technological progress. This restoration aims at achieving what technology can accomplish, and at eradicating all strictly human goals. The 'new order' of restoration offsets morally and on the level of integrity of socially acceptable behavior, the 'unthought of' of the technology that it molds itself to.

Genetic manipulation technologies and 'human enhancement' give an accurate measure of this possible future, without offering neither it meaning nor its future projections, in that they are even capable of accepting political or ethical governing bodies; these governing bodies being without influence on their development, whose representations go far beyond our own skills of representation, starting with immortality, the bedrock of all related representations, involving energy, mastery over natural phenomena, artificial life, space exploration, and so on.

The idea of a certain autonomy of technology, capable of over-determining all ethical or political considerations, can be illustrated by the example of IRCAM's SEMANTIC-HIFI project[1], (Corteel, 2004; Millot and Pelé, 2005), which is part of the transition from content handling, to that of users, as expressed in an IRCAM newsletter

(*Veille technologique*, n° 25, 2004): “In the context of large scale digital music, the goal of the project is to develop a new generation of HIFI systems, offering new functionality for browsing, interacting, rendering, personalizing and editing musical material.”

This example, that does not directly refer to art practices, highlights the fact that artworks are, in some cases, the platform or prototype – the ‘waste allowance’ of computer science (Teyssède, 1977: 31) – of systems that are then developed industrially. The application field of the SEMANTIC-HIFI project mainly concerns home listening, where socialization, sublimation, and repression of individuals are organized, by overall thought, around the whole aesthetic ‘system’, and by its industrial exploitation, from production to reception, the concept of ‘organology’ championed by Bernard Stiegler, philosopher and former director of the IRCAM.

According to Stiegler, art and, more generally, aesthetics, are made from what he calls an “organological complex,” defined as the “genealogy of the perceptible.” This genealogy, which, in turn, is considered as general organology, deals with the history of human aesthetics, in which “the organology of the physiology of the human body, the organology of artificial organs, which are the basis of all *teknaï*, and of all art and all crafts, and organology as the thought of organizations in which taste, judgment and discernment are socially produced (magically, religiously, politically or, today, economically) – taste, as well as anesthesia that belong to the hyper-industrial society” (Collins and Stiegler, 2004; Stiegler, 2004).

But there is no need to call on to such a thought pattern to notice this technology emancipation trend, and its consequences on our behavior. It is enough that technology and techniques, particularly of looking and of listening, that are connected with it, enlist enough individuals’ energy, so that this mutation of language occurs in a form of barbarism, a ruin of the language, that is the sign of all dying oppression. Yet, it is nothing but the consequence of a nearly theological fascination with technology and its transfer to users: For all creators or inventors of technology, creation is only considered an authentic, to the extent in that it escapes and surpasses us (in short, when it is liberated). And from the moment this autonomy is effective, users are in virtually the same position as the inventors: They belong to the same cybernetic complex.

4. Pleasure

The reversal of desire-pleasure, which characterizes the system of beings, before all cultural adaptation, in the pleasure of desiring oneself, is the path of a somewhat Machiavellian pleasure, in that this ‘side-step’ is based on the idea of quality; meaning on something that is essentially uncontrollable – not for lack of a criteria, but, on the contrary, because of its present or future proliferation, which makes all exhaustivity impossible. By its evanescent and unreal nature, quality is, however, the right idea for for cultivating substantialist convictions. This support is an instinct inherent to realism. In other words, it corresponds to the belief that there is a permanent ‘reality in itself,’ embodied in exact, though arbitrarily named objects: “In its primitive, emotional form, the certainty of the realist proceeds with a miserly joy.” Gaston Bachelard (1934) thus names a complex of “little profit,” that draws attention to small things and that favors “precious” materials: Thus the importance of choice, and purity of materials used in the manufacturing of electronic devices, is often spoken of.

This “substantialist conviction” could be observed during the spring 2005 ‘Sound Days’ during the debate between the spokespeople of the SEMANTIC-HIFI project and the passionate ‘partisans’ of sound quality. Whenever one of the ‘quality’ partisans evoked this or that reduction in quality that digital processing could provoke on the audio signal, the project developers had only to counter, by referring to studies carried out on the different coding processes. These studies show affirmatively that these reductions in quality tend to become imperceptible and, in any case, are undetectable by the majority of listeners. And they did not fail to add that advancements in technology would certainly make up for the theoretical and already hypothetical gap, that might remain; a gap that, in any case, was largely compensated by the advantages it heralded, in terms of expansion of features and possible uses.

The quality issue, as dealt with by the speakers during the ‘Sound Days’, is biased, in that it refers to the manufacturing phase of content, without consideration for content reception. Yet, it also shows how this argument, based on technological progress, is irrefutable: It is based on the same principle of quality, in both its logical and emotional forms, this tenet being simply transferred into the area of ‘Fetishized abstraction’. Abstraction fetishism thus conveniently compliments and strengthens object fetishism. In all these cases, a ‘fetishizing’ behavior remains. It makes no difference, after all, whether this behavior deals with tangible single-function objects, such as television screens, or tangible, multi-functions objects, such as computers, or abstract objects, with more or less well-defined functions, such as algorithms inspired by cybernetic technoscience.

Abstraction fetishism finds ancient sources in Pythagoras and Plato, and has occurred since the arrival of the computer, in what Bernard Teyssède called “the vertigo of high precision” (Teyssède, 1977: 25). In fact, the restoration mentioned above, primarily a statement about reality – namely, that it is preferable to have no relation to it – has introduced numbers to make up for the lack of reality. This new fetish is an undefined number and can be any number, since its background is made of stock market fluctuations. In its statistical form, it is radically indifferent to reality. It is a number that the absolute opposite to number in Stéphane Mallarmé’s “A Throw of the Dice” which was, necessary and personal, “the only number that can not be another”, necessary and individual.

We must therefore not take one side or the other among the various protagonists of this debate, since their arguments deal with the same theme of «quality», and their various objectifications are all resolved by the same fetishizing behavior. Numbers as potentiality is the common ground of all these pleasures, whereas the reversal mentioned at the beginning of this part of this text, can only be countered by another reversal, namely a revolution that would bring us back to desire-pleasure: To the grasp and shock of pleasure – of the die landing on a unique number, whatever number that may be. All creation would be random, as would pleasure along with it.

5. Strike

A strike marks the point of splitting, that pleasure heralded as 'grasp and shock' of a supreme pleasure, because originating in childhood – the childhood of pleasure, or the pleasure of childhood, which is firstly and foremost of a self-centered and 'homosexual' nature. Perhaps we could reassure ourselves by saying that, after all, it is simply a phenomenon situated in time and space, since it is most often renewed in advocated and defined dimensions of demonstration, or rebellion. It only affects a small number of people – 'minorities,' who it is always possible to subdue. Whereas, according to Marcel Detienne (1998, pp. 93-94), in terms of action, the words "demonstration" and "rebellion" refer to the context of a particular "strike," that of the Samoan people, in revolt against their tyrant, in the fifth century BC.

So the idea of a strike, despite its socially regulated and union-led use, goes beyond that of a mere rebellion, because it escapes description of a fact, and takes on the more threatening nature of the uncertainty, that all words of subversion, and all discourses on revolt convey. A strike is more disturbing than a rebellion because it means abstention, the ebbing of water that reveals the obscene nudity of shipwrecks, just as its return demolishes the most painstakingly built 'sand castles' – that were built solely for the pleasure of the vision of their destruction, of their literal liquidation.

A strike consists in never allowing oneself to be fettered, and in an ability to renew a transitional moment or transitional stage, a "central position" as explained by François Jullien in his *Éloge de la fadeur* (In *Praise of Dullness*). It is the only virtue with which, like Clément Rosset, in *Principes de sagesse et de folie*, (*Principles of Wisdom and Madness*), we can describe "the feeling of mere existence ... like a thunderbolt, like a dazzling feeling of a presence." This is the opposite of the sensory saturation by which one is supposed to gain illusory access to the abundance of essence: This skill is based on a certain unobtrusiveness, a "reserve," a "gift of abstention," which, far from fearing reality, on the contrary, offers the most clear-sighted of accounts of it.

Removed from the 'mystery' that claims to dogmatically reveal the 'work of art,' administering, in religion, in blindness, and, the submission of the will, this practice of secrecy, which is nowhere better embodied than in the relationship between lovers, is a visit to childhood which, according to Roger Dadoun (1996), "places love, including sexuality, within the fiery center of the human condition." Its immaturity protects things from elsewhere or from another time than of presence that which contents itself with the limits of this presence. Roger Dadoun once again evoked Marcel Duchamp, "that singular Salt Merchant [who] would rather incite us to insipidness, fading, or 'obliteration'" to name a "mythopoietic" language stage, the only stage able to integrate part of the essence of objects as perceived through our senses, and thus in a still in a perceptual mode, towards a more subtle, and at once more fundamental perception of reality.

6. A Cybernetics Fair

In the early 2000s, the Japanese Ministry of Industrial Trade and Industry studied new safety guidelines for what they called “second generation” robots. This set of guidelines, if implemented, would be the first official version of the first robotics laws, suggested by Isaac Asimov in 1940.[2]

The idea was to translate the idea that robots must not harm humans into practical guidelines. In any case, this is an example of the transfer of rules devised in a fictional context, into the realm of reality. So, the development of ‘nanotechnologies,’ and the manufacture of machines that are behaviorally similar to those dreamt up by Isaac Asimov, would defer to ‘narrative’ rules, according to the aforementioned guidelines.

When reality interacts in this way with fiction, it seems useful to return to the concepts which make up their bedrock. The question is no longer whether ‘robots’ or computing machines are capable of intelligence or creativity. They can only exist with these features, for the above-stated reasons – that we neither want, nor can we, thus, consider the invention of a technology, unless it is able to outperform us, that is, first and foremost, somehow able to reveal itself to be in our image – and then, with respect to principle of *verum factum*. This principle, which mixes up truth – what are able to understand – with what we can produce, results in a change of category for certain objects. Therefore, each time we produce an object that has the same physical and behavioral properties as a ‘natural’ objects – not made by human hands – the latter leaves the category of natural objects, to enter that of ‘naturalized’ objects. Jean-Pierre Dupuy maintaining that alchemy was the first of nanotechnologies we must acknowledge that the idea of imitating life is not new, no more than are the technologies that have given it shape. (Dupuy, 1994).

Even if the principle of *verum factum* removes objects that are imitated through manufacture, from the category of natural objects, it does not remove them from reality. As long as they remain real, precise and complete, as is our knowledge of their features, we can not maintain any assumption of permanence in regards to such an object: Neither that an object is in virtue of what it is has always been – that what is true today was false yesterday, or the inverse – nor that it should not be as it appears, because of what it will be or might be in the future.

The manufactured, then ‘naturalized’ object, is also a real object, and participates in the ‘tragic’ situation of reality as ‘alive’. To resolve the contradiction between ‘living’ and ‘artificial,’ in the context of a general theory of reality, many philosophies have found no better than to dissolve the very object of theory by referring “to this almost nothingness that Plato called the ‘lesser being’ (*meon*) specific to perceptible things – that is, real things- which are supposed to only hardly half - exist”(Rosset, 1988: 11). This means that it would not be possible to bring a constructed object closer to a real object, except at the cost of a diminution of reality through a ‘formalizing’ process. So, the first robotics law could be applied to the manufacture of robots one could consider as ‘artificial living.’

But, it remains possible to deny this ‘scale model’ of reality, as did Clément Rosset, to refrain from making the Heideggerian distinction between to be and being, to mark out the boundaries of limits of existence, the Dionysian ‘here and now’, accepting its pitiless and absolutely irreducible nature. This “principle of sufficient

reality” which deprives us of all perspective and all solutions, and confronts us with inexhaustible knowledge, for lack of the necessary psychological means; but on the other hand, transports us to the jubilation of Epicureanism: integrating truth into material existence, good into the experience of pleasure... And contenting oneself with the slightest of mistakes.

Ultimately, the creation of an artifact, refers to but two distinct possibilities: an unreal or a real artifact. The neurosciences certainly do not emerge from Epicureanism, but at least they have the wisdom to accept their reductionism, by not speaking of an ‘artificial neuron,’ but of a ‘formal neuron.’ In this case, the guidelines intended to protect humans from robots can be respected, but without dealing with the properties of reality: By limiting cybernetics to a simple ‘attraction,’ it may also be that, as has been noted, fascination shall prevail, and the autonomy of technology will be accepted. Then the only ‘law’ of robotics will be that of reality itself, meaning no law.

7. Foot notes:

[1] This initiative is in follow up to the CARROUSO project, whose goal was the development de technologies allowing the transfer of a real or virtual sound scene towards a distant location. In this program, based on the MPEG-4 standard, the sound signals of the sources are transmitted in isolation, without the effects of the room. At its reception, the “sound scene” is synthesized, starting with its geometrical, physical et perceptual description.

[2] Science fiction author, imagining robots able to reason and carry out human tasks, he devises constructive laws able to make robots inoffensive: A robot can neither harm a human, nor remain passive in front of a human in danger. A robot must obey orders given by humans, except if such orders are in conflict with the first law. A robot must protect its own existence, as long as this protection is not in conflict with the first or the second law.

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9. Sitography:

Wikipedia's "Cybernetics" mainly refers to its applications, and its operational side and, but nonetheless contains the major references which founded its the principles of cybernetics, particularly during the 'Macy conferences' which took place between 1946 and 1953.

These conferences are the subject of an article that details the ten events in chronological order, with the list of speakers and a brief overview of the topics treated. From 1955 and 1956, the idea of 'cognitive sciences' with a much less speculative orientation, replaced the concept of 'cybernetics?' (It is better to rely on thee online courses available, than the more or less lightweight articles.)

In the 1980s, the issues raised by 'early cybernetics' appeared in some fiction and science fiction works, including the movie Blade Runner (1982). Since then, advancements in information technology have allowed us to try out certain cybernetics proposals, by programming more and more extensive networks of formal neurons. For example, by simply changing the name of an algorithm known since 1975, as 'retro propagation of the gradient [of error]' and allowing to learn about networks of formal multilayer neurons – multilayer perceptrons – Yann Le Cun has become known and recognized as "a master of artificial intelligence" or, according to his disciples, "a god in his discipline" (Le Monde.fr, 04-02-2016). He was thus able to give his inaugural lesson to the Collège de France, by presenting this 'innovation' under the name of "Deep Learning", which he devised in 1985.

To quote this article:

Gérard Pelé, Cybernetics and creation, published on July 11, 2017
URL : <https://www.wikicreation.fr/cybernetics-and-creation>