# THE SURGE OF CONTEMPORARY TECHNIQUES

## Instability, Disappearance of Industrial Societies

by Michel Tibon-Cornillot, E.H.E.S.S.

The poetic power of the Greek tragedies irrupts when one juxtaposes the framework of their narrative to the evocation of the most secret destiny of their cities, their ultimate instability and eventual disappearance. Undoubtedly the same phenomenon exists at the heart of today's living cultures: they too are organized around the obscure regions that concern their possible end, their destiny, in which they now and then express or perceive the mysterious presence of that very destiny they generally prefer to ignore.

Sailing on the ocean of their objects, like their sophisticated armaments and techno-industrial systems, men of industrial society are blinded by the ceaseless rain of gifts, by urban electric lights, and by the hypnotic flickering of cathode ray tubes. They cannot recognize, let alone accept, the ultimate instability and even disappearance of their culture, even though the devastating effects of its technical achievements are clearly perceptible.

Many avenues had already been opened up that finally exposed this black hole, the impending disappearance of industrial society, obvious. These openings were primarily initiated by European thinkers, particularly the German founders of the "continental-critical" schools of the 19th and 20th centuries: Nietzsche, Heidegger, Spengler, and, even more recently, Hannah Arendt and others. Curious spirits, sensitive to the structural instability of the "productive" world, they could not be satisfied with the empty phrases of "Anglo-Saxon philosophy" charged with plugging, in an imaginary way, the very real holes of industrial globalization—a plugging sponsored by industrial and financial priests. Notwithstanding the work undertaken by Nietzsche concerning the European nihilism, one can make these black holes clearer by focusing on the study of contemporary technical systems, the know-how which put them in place, and their relationship with the modern sciences. This essay will take up that very task, however, it will do so by pinpointing a key underlying concept: the *surge* of these systems[1].

### 1. Symptoms: Arrogance And Forgetting

For the curious and clear observer, the current situation of the sciences and techniques is problematic, simultaneously triumphant and threatened. This is the first paradox we must consider. In other words, the calling into question of scientific and technological activity grows at the same rate as the diffusion of scientific approaches develops in various domains and in very different countries, spreading a cozy blanket of contemporary technical systems to the whole world. This unstable situation is linked to the increasingly narrow interpenetrations between financial

circulation, economic and industrial development, and scientific research. This grid, the tightening of the social field by technical and scientific approaches, is clearly inscribed in a long history but is now being spread at accelerated rates. More and more populations, increasingly foreign to the Western "Weltanschauung," are directly summoned to adopt the industrialist ways of being and must respond without hesitation to this summoning. This current "forcing" is all the more dangerous as it is inscribed within the framework of the colonial and imperial episodes carried out by the white elites of Western Europe and North America over the last five centuries. These episodes are at the origin of wide-scale massacres in two Americas, China, India, and in many other regions[2].

The contemporary sciences and techniques form one of the essential substrates of the current expansionist waves, either in the explicit form of armaments sold to the "underdeveloped" customers (these "last-cry" armaments are tested by industrial nations in their democratic wars against countries possessing a richness of energy sources) or in the indirect form of economic and financial imperatives under the pressure of the symbolic models of consumption and images. In the last forty years, information technology and computers (logico-mathematical machines), entirely derivative of the history of the formalism in Western science, were diffused across the entire world and imposed as a privileged prism through which to approach all the aspects of "reality." This reality completely mobilized the digitized vision of the world and the channels and crossroads of the "control system" that allows the current domination of all laboratory products concerning satellite networks and teletechnology. It is no longer possible for scientific researchers to hide the most basic reality: the scientific disciplines and the techniques linked to them are structurally related to the expansion of modern Western culture. The current visibility of this expansion thus poses serious problems to scientific circles; they risk bearing fatal responsibility for the neo-colonial wars or the serious malfunctions related to poorly controlled scientific and technical practices. As such, it is clear that it will be necessary to systematically install watchtowers around all the laboratories, not to protect the external world from their products but to protect the researchers against the riots from the inhabitants from the external world.

This situation raises a great number of questions. Among them are the following:

• the increasingly systematic implication of science in the processes of imperial expansion makes it no longer possible to avoid those criticisms linked to the existence of quasi-ontological bonds between the exercise of science and that of violent domination. For centuries, it was enough to recognize these distortions by chalking them up to human error or blaming the vices of human nature. It was evident that if the light of scientific reason in action could be weakened by passing

over the bumps of the road of progress, the triumphal race never would stop. The present situation is completely different because an ontological mistrust is established in many intellectual domains and increasingly large sectors of the population. This radical calling into question is clearly perceptible in the nuclear crisis and appeared in an almost identical fashion with the business of GMO (Genetically Modified Organisms).

• interrogating the contemporary developments of the modern sciences and their political, economic, and financial alliances leads a considerable number of epistemologists and researchers to diligently reread the Vulgate (or Golden Legend) of the history and philosophy of the sciences. For certain authors, such as Feyerabend or Rene Thom, we must attentively read the work of "pre-modern" philosophers who had been all-too-quickly placed back on the shelf. How can we avoid the critical re-examination of an author like Aristotle whose work has in particular played a determining role in the installation of the rational thought in Occident

• other questions concerning reductionism in biology haunt our spirits. Can one reduce the living to the inert as Descartes and, after him, a good part of modern biology proposed? What place must we give to the senses and, more generally, to sensitivity in reading and studying phenomena? What is the value of the mathematical approach to a world made presumptively skeletal thanks to a series of "reductions?" The growing certitude about the implications of the sciences in the construction of a world that is disillusioned (Max Weber), operational and productive (Marx), violent and chaotic (George W. Bush), and marked by an infinite nihilism (Nietzsche), seems to have lifted some key barriers that prevented the large-scale invasion by the rapidly constructed project of industrial societies, set up in a just a few centuries.

**2. A First Diagnosis: Infinity Is A Crazy Idea**

At the heart of the most essential postulates of the modern sciences, one finds the notion of the infinite and this, in several variations. Infinity is already found in the "sacred" language of the modern sciences, mathematics. As Blaise Pascal notes, "we know that there is an infinite and are unaware of its nature; since we know that it is false that numbers are finite, it is thus true that there is infinity in number[3]." We find it in the design of the infinite and neutral space of new mechanics, just as in the indefinite progress of the human actions insofar as they are guided by the method Descartes outlined in the sixth part of *Discourse on the Method*[4]. The interminable attempt to incarnate infinity in the world is witnessed in the figure of progress, in the practice of numbers, in the increasing domination of men over the entirety of nature, and everywhere the deepest truth of the European world shines. This interpretation is central to Hegel's work where it is known that it

was used to account for Western modernity—he conceives this modernity as realized Christianity (aufgehoben)[5].

On this exact point, the position of Aristotle is at once very developed and astonishingly current. It is from this perspective that one could show how many of the texts by authors devalued in the philosophy of sciences retained all their virulence. His treatise called *The Politics*, as we will see, concentrates on a series of questions addressed directly to our generations; in a sense, this essay plays the part of a *shibboleth*[6].

**2.1. The Chrematistic Or End Of The Citizenship**

The question of the infinite arises several times in Aristotle's work and acquires a particularly intense significance in economic and technical contexts. One can summarize it as follows: "the desire for money destroys the city[7]." The philosophical tradition that wanted to expose the relation between economy and philosophy finds, in Aristotle, roots that are impossible to circumvent: economic rationality must be integrated into a rationality vaster than that of philosophy, which, alone, can give it weight. This subordination of economy to philosophy is not established in a dogmatic way. Aristotle bases it on the recognition of the latent threats that economic activity exerts on the citizens and the city, beginning with philosophy. "In this tradition, fear of economics dominates. Because, in the face of the evidence of philosophic reason—thanks to which reason is self-reflexive and self-justified—economy, if left alone, seems to be a movement without end[8]." There is an immoderation in economic activity that threatens even the existence of philosophy, because this discipline, and it alone, can deploy reason in all its dimensions, in its totality. However, according to Aristotelian thought, the point of view of totality is also that of limit and of the end. For, it does not have a basis outside of human rational activity, which is the essence of reasonable, but finite, beings.

Philosophy must keep economy within limits. The term economy returns to the *oikos* (οίκος), the house; in old french economy is *ménage (*household). The oldest meaning of ménage, this clanic/domestic economy, arrived in English through the concept of "management," which clearly reveals the economic dimension of the household. The *oikonomikè* (οίκονομική) is a domestic activity that must remain isolated from public life: "the threat of economic infinity consists precisely in the contamination of public life by the overflow of economic activity from this isolation. The economic life must thus be confined inside the gates of the house in order not to be lost in infinity. That means that the economy is subjected to a higher authority who ranks the totality. The first is the private domain, the second, the public, which is reserved for political and state activities[9]."

Economic activity is *poièsis* (ποίησις), an instrumental activity in which technical know-how finds its realization in a product where the end state is not a matter of those factors which initially were put to work in its manufacture. This endless race of the output of products, which, in turn, serve ends other than themselves, establishes an indefinite succession that must remain enclosed in the domestic sphere, a sphere which, itself, finds the its deepest meaning in the exchange between the citizens within the city. It is only within the public life that truly human activity can appear, that of *praxis* (πράξις), in which the citizen acts toward a self-reflexive end. If, by misfortune, infinity suitable for the deployment of *poièsis* escapes the framework of domestic activity and enters the framework of exchange within the city, then we pass from the *oikonomikè* to the *chrèmatistikè* (χρηματιστική) and allow the entrance of the unlimited into the field of political exchange, immediately involving the destruction of the city.

It is in this context that Aristotle analyzes the appearance of money. In *The Politics*, he precisely distinguishes money as the domestic form of the chrematistic from money as the general chrematistic, which is accumulated for its own sake. Thus he says: "the natural chrematistic is derived from the domestic economy, while commerce is the art of creating richness, not by any means, only by the means of exchange of goods. It seems that it is this last form that has a relation to currency because currency is both the principle behind and the end of exchange. Consequently, the kind of richness that comes from the chrematistic, thus the definite, is truly without limits[10]."

These essential distinctions can be revisited in connection to money by distinguishing between money without desire and the desire for money. Money without desire is that "which is used as expression of the measurement of objects of social need, thus it simultaneously ensures distribution by means of a specific type of circulation; it is not used as expression of the measurement of the products of work[11]." This money without desire allows the noblest expression of the desire of the citizens, that which all the exchangers have in common, "the desire for unity and cohesion in the city, which is also the common desire to carry out the exchange to its immanent end[12]." If this money without desire gives way to the desire for money, then collective action is dislocated and the city tears open. In Book I of *The Politics*, Aristotle forcefully shows that if money is designed to be a general equivalent of all goods, it involves the desire for each object because any richness is in itself desirable. However the desire for richness in general, or the desire in which the object is the generality of richness, means, in turn, that what is desired in the desire for this object is the concept or the idea of the richness and not a true richness. In this context where the role allotted to currency is that of the universal equivalent, the entire ordering of the various spheres is turned upside down. The specific products are put at the service of infinite desire for richness and become the means by which we service the concept of richness. For Aristotle, this situation is crazy because the infinite is a conceptual invention which does not derive from anything

existing: it is *ein Unding*, a no-thing. The infinity in question is that of the unlimited, indefinite repetition within a series.

### 2.2. The Unlimited Effervescence Of Technical Networks: The Exemples of GMO or embryonic stem cells

The study of the current situation in embryology or molecular genetics is exemplary and can be illuminated in light of the preceding developments. The general agitation that seizes tissues, cells, and genes for their industrial production and genetic modification, poses some questions. "Collateral" effects on ecosystems are increasingly perceptible and relate, in turn, to the great ordering of plants, animals and primates. Have we not located this infinite and foolish deployment about which Aristotle speaks, on structural levels, in the current context of biomedical achievement? Does not one of the key elements characterizing contemporary biomedical developments concern the financial appropriation of the living organisms, a process that tries to combine financial profitability and biological reproduction? Contemporary biomedical developments are realized and diffused in a privileged way in laboratories, both private and public, "enslaved" by economic logic and the chains of corporate production. In the exemplary case of the genetic engineering, both the modification of bacterial organisms, plants, and animals and the patent filings that set technical and financial precedents, fall under this movement of financial appropriation of living organisms.

The totality of this research and its new perspectives profoundly modify the relationship between technlology and the embryo. The embryo is no longer conceived in its relation to reproduction but instead as a kind of Pandora's box able to meet the demand for needed cellular collections. Hailed this manner, the embryo is no longer an embryo but a magic pocket, a small bank of ES[13] cells, endlessly producing both the living and economic currency thanks to the technical hijacking of the plenitude of the living. Moreover, at this level of reflection, the link between the technical manipulation of ES cells and the techniques of mammalian cloning clearly emerges, no longer according to the norms of human reproduction but of industrial production-productivity.

## 3. On A Biological Origin Of Techniques

The contemporary sciences and techniques are organized around living organisms, either in their simulation, mechanization, or modification. It is a curious situation where the living becomes a major stake in the rationality of sciences even though the rationality at work in the study and control of organisms borrows its models from physics, where success relates to inert matter! We will later see that the constitutive reductionism in biology, that which denies the existence of a

border between the living and the inert, is highly effective; let us, however, hold that this step is not enough to explain this success. We must introduce other distinctions that, this time, do not only concern the scientific step but also technical know-how.

### 3.1. Genesis Of Techniques And Evolution Of The Human Body: Some Remarks On The Involuntary Origin Of Techniques

#### *Techniques As "Organic Projection"*

In the second half of the 19th century, primarily in Germany, an anthropological concept concerning the origin and the development of techniques was born. This theoretical orientation was rooted in Leibniz's comments[14] about the direction taken by German mechanics, primarily automatic, but was also found within the framework of the German notion of the will and reason; the latter allowed us to distinguish the order of the speculative conscious from the unconscious push of the movement of the will. One of the founders of this philosophy of techniques was called Ernst Kapp, who write an important book Grundlinien einer Philosophie der Technik (1877). For him, the first tools were designed to keep human organs in motion. The bludgeon, the striker, and the stone axe all prolong and extend the physical movement of force executed by the arm. The gesture accompanying the hand's movements invites us to see in the various tools, a prolongation projected from the closed, opened, and folded hand, as well as the accompanying movements of the arm. This thesis of "organic projection" thus finds its first foothold in the analogy of form between the external organs of the body and tools.

Such an argument could not however account for the technical lines related to fire or the wheel. The theory of organic projection must thus be deepened with the following claim: the closed fist for example can only be analogous to the hammer if it is likened to a closed hand, i.e. if it is related to a movement—that of the closing of the hand. Thus to be precise, is necessary it to claim that that various positions of the hand, cupped, closed, opened, and held out, do not really serve as a model for the hammer, the shovel, or the hook; in reality, we have drawn a functional analogy between the structures of movements executed by the body and the tools that express them. By being aware of the gestural body, the theory of organic projection allows us to meet traditional criticisms levied against it.

This theory also took another interpretative direction by generalizing to the projections of internal organs. In this new context, pliers or a hinge would be a projection of a joint; a pump, the projection of the heart; a chemical filter, a projection of the kidney. How could we not see, for example, in the multiple communication systems, the basic model of blood circulation, or in the mechanic assemblages, the structure of the skeleton? Certain authors, somewhat pre-empting the

state of the art of their times, envisaged the creation of "thinking" machines manufactured on the model of the brain of which they would be a projection.

Such are thus the fundamental postulates of the theory of the organic projection founded and developed by the German anthropologists, postulates that are at the core of contemporary debates, and particularly central to the present task here of developing the concept of "the surge of contemporary techniques."

***Techniques At The Heart Of The Hominization Process***

This theory makes it possible to regard technical and scientific activities as autonomous activities, prohibiting the reduction of techniques to the sciences. Indeed, viewing the origin and development of techniques in the context of the theory of "organic projection" prevents us from confusing their formation with the rational activity that inspires the development of the sciences. The key significance of this philosophic theory is that techniques are inscribed into the field of fundamentally instinctual and unconscious activity. The interpretation of technical activity within the framework of the theory of organic projection falls under the context of a broader understanding supported by the very movement of general evolution of the living and of matter. Ernst Kapp for example, while refusing the nihilism from the Schopenhauerian perspective, proposes to restore the projective dynamics of technical activity within a vast progressive movement of control and adaptation.

Several authors have tried to reintroduce the fundamental concepts of the thought of Charles Darwin within this framework of the anthropology of the techniques. In the French intellectual context, the paleontologist Leroi-Gourhan offered original ways to understand the significance of evolution, linking techniques and hominids. For him, the birth of techniques and the process of hominization are incomprehensible without one another. It is impossible to understand human anatomy without taking account of the totality of the technical prolongations that essentially constitute it. In the first volume of his work, *Le geste et la parole*, called *Technique and Language*, he proposed that we see the standing or upright position as the first, and most important, criteria of human being. From this one could deduce two corollaries: "they are, the possession of a short face and that of a free hand during locomotion...the freedom of the hand almost inevitably implies a technical activity different than that of monkeys and, this freedom during locomotion, linked to having a short face without offensive canines, warrants the use of artificial organs as tools. The upright position, short face, free hands during locomotion, and possession of removable tools are really the fundamental criteria of humanity[15]."

While Leroi-Gourhan elaborated the above criteria in the Fifties, those that located the appearance of techniques at a very early stage in the process of hominization, it would be

confirmed until later by modern paleontology with the help of the most advanced methods of radioactive dating. The oldest tools found in the excavations of the Valley Rift indeed go back two and a half million years. Putting aside that it is nearly impossible to grant preeminence to any particular trait, Leroi-Gourhan mentions that, to him, cerebral development is a secondary criterion: "it plays, when humanity is achieved, a decisive role in the development of societies, but it is certainly, on the strict plan of evolution, correlative of the vertical position and not, as we believed for a long time, paramount[16]."

The appearance and development of techniques thus rooted in the process of hominization at such a basic level raises one of the most complex problems in contemporary paleontology: knowing the place tools have and the gestures that they induce in the very direction of the evolution of hominids. In a word, the relationship between tools, techniques, and the human body is so direct that one could not understand their structures and evolutions in isolation. The study of human anatomy and its evolution should be understood, to be comprehensive, as a simultaneous analysis of the body and the tools that constitute it. Summarizing the very original approach suggested by Leroi-Gourhan in connection with the evolution of techniques we can say that recognizing the extent of their antiquity, and their fundamental role in the movement toward hominisation, "biologizes" them. In order to account for the general processes marking the evolution of tools and techniques, we once again meet a fundamental concept of Ernst Knapp, that of "ex-sudation" (Organprojektion), developed in his work "Grundlinien einer Philosophie der Technik[17]" in which he tried to systematize the idea of a biological origin of techniques.

***Power And Availability Of The Human Body***

An interpretation emerges little by little from these descriptions. By creating detachable, swappable, manual tools, we can acquire powers and abilities previously impossible for the human species. For example, with the bludgeon we acquire the muscular equivalent of the orangutan fist, with the axe or the claw we gain the equivalent of the tiger (felinus) feats, and, with the taming of horses, we reach horses' speed (equinus). The hominid thereby effects in herself, through each group of tools, the equivalent of those speciations obtained, at the price of a genetic drift, by multiple animal species; the animal species achieved this corporeal specialization over the course of millions of years. The hominid adapts them without it being necessary for her to specialize corporally. **Each group of tools must be conceived like the equivalent of a speciation.**

This first orientation of techniques is organized around the swappability of tools; their "detachability" makes it possible to explore the world according to their specialized achievements while maintaining the availability of the body. The second direction of the techniques relates to the process of increasingly rejecting all the instruments external to man: "dental actions pass to the

hand which maneuvers the removable tool then it moves from there and become part of a gesture which frees the arm in the manual machine. The evolution continues and the muscular impulse itself is freed from the body when the use of animal power appears, that of wind and water[18]." It is thus that the perfectly involuntary inspiration for this process appears, little by little, like evidence: availability, this astonishing property by which"the human species periodically escapes an organic specialization which would bind it definitively, while limiting itself to its life role. Any adaptation of the hand of the first anthropoids into a tool properly stated would have created only one group of mammals highly adapted to restricted actions and not the human whose physical (and mental) maladaptation is the significant genetic feature. For example, the tortoise could have hidden under a roof, the crab could have extended its hand with a plier, and the horse could have become a rider. This possibility becomes available again each time, as memory transported in the books, as force multiplied by the ox, as the fist isimproved by the hammer[19]."

These quotations were necessary in order to render comprehensible the very particular relationship binding the human body to its techniques. One can read in these developments many attempts by the body not to specialize, not to transform, as if it were necessary that the mankind maintains its immaturity; without an original specialization, humans can unceasingly invent new combinations. This availability maintains a presence in the active, experimental, and virtual world and is magnified thanks to the birth of language and symbols. Techniques and languages are indeed inextricably dependent; they had to emerge simultaneously insofar as the sudden appearance of tools went hand in hand with the end of the search, the release of language, lips, and larynx, thus opened the field of the phonation and the emission of articulated sounds. Word and language allowed the development of a virtual space, that of the symbols by which the world can be brought closer without being traveled. It is unnecessary to further stress either the extraordinary development that these processes of symbolization underwent within the framework of the formation of social groups or their feedback on technical activity.

**4. The Alignment Of Techniques In The Imaginary Of The Modern Sciences**

The concept of availability proposed not only a profound interpretation of the developments of techniques within this huge temporality spread out over millions of years but it also made it possible to convincingly uncover the fundamental role held by techniques even in the process of hominization. Present at each of the crossroads of this long path, techniques were undoubtedly hypostatic well before rational thought even appeared. At the existential heart of talkative and cruel hominid primates, techniques are on the side of their destiny, well before any consciousness and

subjectivity are taken up. They are on the side of this involuntariness, the presence of which was seen under the aforementioned guise of surge.

But if the concept of availability creates a path towards an involuntary origin of techniques, it cannot account for this surge because it points to quite a different movement. It is thus necessary to further deepen the analysis to understand the joints connecting the assumptions of availability with the immoderate and uncontrolled slope one increasingly meets in contemporary techniques.

A first statement is essential: the concept of surge relegates current technical performances to unconscious, involuntary processes that well situate any rationalization. This archaism, this unconsciousness that accompanies their clarification and development, locates them at the core of the most profound human behaviors. In that, they reveal the analyses and the conclusions concerning the archaism of techniques and their implication eve in the processes of hominization.

On the other hand, the current orientation of their developments follows a deeply divergent course. The contradiction is not initially semantic (or logical) but historical. The concept of availability essentially concerns techniques that were developed in traditional societies. Without losing their deeply "destined" position as the key to the formation and development of mankind, contemporary techniques were altered and reoriented within the deepest imaginary structures of modern rationality. It is on this level that we situate the second source that inspires contemporary techniques, this *hybris* (ὕβρις), this immoderation that characterizes the emergence of current technical surges. For barely five centuries, human technical creativity has been aligned around the organization of the imaginary and symbolic structures of the modern West. The very power of techniques multiplied in such a way as to expose and effect the infinite will to power that characterizes societies embedded in Judeo-Christian creationism, which attribute to man a co-kinship with the creative act undertaken by their all-powerful god and give an essential primacy to mathematics, by the means of their combinative power and their "deterritorialising" formalism.

The dominating character of Western culture, a character exalted by the Judeo-Christian beliefs founding it, infinitely multiplied the effectiveness of this great hominid predator. The systematic revival of predatory domination found possibilities of planetary expression in the birth of the sciences, techniques, and, in their field of privileged application, industrial production. For a few centuries, hominids have been on a path that enabled them to enlarge the many ecological niches they had already invaded to include the entire of the world. The project of domesticating the biosphere has been clearly asserted and the results of this enterprise are starting to be perceptible:

• many vegetable and animal species disappeared and disappear at increasingly fast rates, particularly among the higher mammals whose niches were closest to ours;

• this general domestication is accompanied by increasingly devastating nihilistic behavior.

For the majority of actors developing the contemporary sciences and contemporary, the acceleration of the process of hominid domination across the entire planetary environment seems to fall under a traditional technical process that one can control. However, the increasing haste with which the predatory activity of the hominids is deployed introduces unforeseeable and singular disturbances, i.e. the surges in question here.

**5. On Regulation To The Surge Of Contemporary Technical Systems**

For a long time, technical phenomena have been evaluated according to their connection to the rationality of modern sciences: techniques became “techno-logies.” The extension of the ""logos” to such various and ancient practices did not facilitate the emergence of analyses able to account for the specificity of technical know-how. Technique-technologies were reduced to the subordinate status of servants to the sciences; worse still, they became applied sciences and disappeared as an autonomous activity. Passé in common language, these approaches still dominate the majority of research about techniques.

While the numerous urban, social, and environmental disturbances linked to the usage of laboratory products and their industrial applications never called the rationality of the sciences, techniques, and industry central to modern states into question, they made it necessary to develop a regulatory slope of reason capable of stabilizing the impetuous character of instrumental rationality at work in industrial societies. Rooted in this context are the risk-regulating (Kantian and Neo-Kantian, various Anglo-Saxon ideologies) and risk-administrative approaches. All contemporary analyses of risks and possible solutions are rooted in the smoothing work of normative rationalization, which is the main focus of the activity of administrative and political institutions.

But, for several decades, the sudden appearance of original technical results has marked many events. Their immoderate power can no longer be approached in terms of regulation-integration because it is moreover the overflowing of an increasing power that has became the decisive question. In a word, the central question in connection with the contemporary techniques does not initially concern their regulation but their measureless surge. It is undoubtedly necessary to return to the First World War to locate the “great passage,” which allowed certain artists, philosophers, and writers to approach science, technique and industry in terms other than those of the classic approaches in order to point to “das Unheimliche”, the worrying strangeness of it[20]. They were witness to the enormous artillery bombardments of the First World War: the operations (battles of the Marne, of Verdun and Sum) during which several hundreds of thousands of men died in just a few months[21].

### *I'm Making An Alarm Clock That Will Wake Up The World*[22]

The perfecting of nuclear weapons, particularly the hydrogen bomb that marked entire generations, makes it impossible to deny the presence of this immoderate dimension appearing with increasing frequency in current technical products. It is in this sense that the statement made by Edward Teller, the man at the origin of the design and the manufacture of the hydrogen bomb, gets its currency: "I made an alarm clock that will wake up the world." The scale of energies and effects deployed by these machines completely escaped the framework that was confined by the dimensional scale of our body. We entered a cosmic scale, between earthquakes and tidal waves.

The immoderation and concomitant nihilism reached a higher stage insofar as the power of destruction sought through the multitude of weapons is concentrated and purified in the manufacture of some bombs.

### *The Immoderation And Thoughtelssness Of Techniques*

The central question of the contemporary techniques is not that of their regulation but that of their surge, i.e. their uncontrollable effects in areas as various as civil nuclear power, human reproduction, genetic modification, depletion ecosystems or the strength of weapons. These surges can be conceived of as so many demonstrations of a source of a power still unknown to us. However the trace left in these areas is becoming observable, like the undertow surging on the rocks and expressing the invisible power of the swell. These demonstrations of immoderate power can no longer be read as the consequences of the deregulations that would have allowed their appearance but rather as a multiplicity of symptoms expressing the increasing pressure exerted by unleashing immoderate forces.

It will thus be admitted that there is an involuntary origin of techniques that cannot be directly accessed by the exercise of a self-sufficient scientific rationality. This assumption can only be fertile if accompanied by a method allowing us to find a path to make it possible to determine this origin. But it is precisely on this point that philosophy of techniques[23] can begin, however in a completely different context than that of the philosophy of sciences.

## 6. Philosophical Insolence: The Failure Of The Philosophy Of Science

It is no longer possible to rely on the "standardized" developments of philosophy of science; it is a vast corpus, whose ambition seems directed in toward the desire to unceasingly validate the exercise of the still developing modern sciences. This philosophy of science and, more particularly, its Anglo-Saxon version known as "cognitivism," suffers from a major weakness: its incapacity to escape its fundamental postulate, which is the central relationship it has with the modern sciences and its claim to membership in the same rational platform.

Fundamentally, philosophic inspiration massively overflows the boundaries of scientific thought and practice and, thus, should not be confused with the sort of philosophy studied in university philosophy of sciences. This original philosophy seeks its inspiration in much more radical questions and its interrogations are otherwise more insolent. What is the legitimacy of modern sciences at a time when the devastating effects of their results appear with increasing frequency? How must we interpret the relation between the appearance and development of the modern sciences and the development of technical results, which draw their dynamics from very different orders of creativity?

It is no longer a question of interminably guaranteeing the validity of the sciences thanks to the exercise of a certain institutional philosophy but, quite the contrary, of wondering whether the current commitment by industrial societies in the great way of science, industry, and finance, is not a fatal cultural impasse.

(translated by Jami Weinstein, Vassar College)

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[1]. Nous empruntons le terme de déferlement (Brandung) à Ernst Juenger, *die Schere*, Ernst Klett Verlag für Wissen und Bildung, Gmbh, Stuutgart, 1990, fragment 44; traduction française de Julien Hervier, éd. C. Bourgois, Paris 1993, pp. 40-41.

[2]. Notre séminaire de philosophie des techniques à l'Ecole des Hautes Etudes en Sciences Sociales s'intitule cette année universitaire 2004-2005 « Impact génocidaire du déferlement des techniques contemporaines ».

[3]. Pascal*, Pensées*, pensée 680, Le livre de poche classique, Paris, 2000, page 458.

[4]. Descartes, *Discours de méthode pour bien conduire sa raison et chercher la vérité dans les sciences,* Pléiade Nrf Paris, 1953, pp. 168 et sq.

[5]. M. Tibon-Cornillot, ***La radicalisation du fétichisme. A propos de l'argent, "la vie mouvante en elle-même de ce qui est mort"*** - Rue Descartes, n° 28, Revue du Collège International de Philosophie, pp. 51-82.

[6]. Le terme hébraïque *shibboleth* qui signifie « épi » se trouve dans la bible, livre des Juges, 5-6. Il est rapporté que sa prononciation permit au Galaadites de reconnaître pendant la nuit leurs ennemis, les Ephraïmites qui s'étaient mélangés à eux dans l'obscurité. Il signifie en philosophie « signe de reconnaissance », « critère de distinction ».

[7]. M. Tibon-Cornillot, ***La radicalisation du fétichisme. A propos de l'argent, "la vie mouvante en elle-même de ce qui est mort"*** – Ibid., page 53.

[8]. E. Berns, *Philosophie de L'économie,* intervention faite dans le cadre du colloque *Philosophie et Economie* organisé par le Collège International de Philosophie le 25 novembre 1999.

[9]. E. Berns, *Philosophie de L'économie,* page 2.

[10]. Aristote, *La Politique,* Paris, Vrin, 1962, I-9, p.60

[11]. A. Berthoud, *Argent et désir d'argent chez Aristote et Marx*, in *Conceptions de la monnaie, un enjeu théorique*, Cahier d'économie politique, n°13, Paris, éd. Anthropos, 1987, p.3-4.

[12]. A. Berthoud, *Argent et désir d'argent chez Aristote et Marx*, Ibid., p.4.

[13]. Les cellules ES (les Embryonic Stem cells) se caractérisent par la précocité de leur prélèvement dans l'embryon, pendant une période au cours de laquelle ces cellules peuvent à la fois être cultivées in vitro et en même temps conserver leur capacité totipotente. Elles peuvent alors, en fonction de procédures techniques connues, donner naissance à des lignées cellulaires spécialisées, des cellules musculaires, nerveuses et même des cellules de lignée germinale (Le Monde du 6 mai 2003).

[14]. A propos de la distinction leibnizienne de la machine et de l'organisme, on peut lire *Le système nouveau de la nature* 10 et la *Monadologie* 63, 64, 65 et 66.

[15]. A. Leroi-Gourhan, *Le Geste et la Parole, Technique et Langage*, Albin Michel, Paris, 1965, p. 32 et 33.

[16]. A. Leroi-Gourhan, *Ibid.*, p. 33.

[17]. Ernst Kapp - *Grundlinien einer Philosophie der Technik* - George Westermann, Braunschweig, 1877 - On lira particulièrement le chapitre II intitulé "Organprojektion".

[18]. A. Leroi-Gourhan - *Le Geste et la Parole, Technique et Langage*, Ibid.- p. 47.

[19]. A. Leroi-Gourhan -Ibid.- P. 48.

[20]. Le concept d'inquiétante étrangeté (unheimlich en allemand) est développé par S. Freud dans les Essais de psychanalyse appliquée, Gallimard, Paris, 1975, p.165 : « L'inquiétante étrangeté sera cette sorte de l'effrayant qui se rattache aux choses connues depuis longtemps, et de tout temps familières. » Nous nous référons à cette notion dans notre article « Des automates aux chimères – relecture hoffmannienne de Freud » in revue Topique N° 54, Paris, octobre 1994, p.315-338.

[21]. Faut-il rappeler que le bilan officiel de la première guerre mondiale fut, pour la France, de 1.500.000 morts et 5.000.000 blessés ; il faut ajouter à ce bilan environ 500.000 disparus. Le total de la population active française tuée et blessée au cours de cette guerre fut de 7.000.000 environ. La population totale de la France étant de 39.790.000 en 1914 dont 13.500.000 adultes mâles entre 18 et 50 ans, on peut considérer que plus de la moitié de cette population fut tuée ou blessée. Le total des pertes pour l'ensemble des nations engagées fut de 37.581.000 personnes. (Sur ces estimations, on peut lire Données Statistiques relatives à la Guerre 1914-1918, Imprimerie Nationale, Paris, 1922).

[22]. G. HERKEN, Consels of War, Alfred A. Knopf, Inc., 1984, p. 57: "I'm making an alarmclock that will wake up the world".

[23]. On trouvera les premiers développements de cette philosophie des techniques dans les textes suivants *Démesure des techniques contemporaines : du réductionnisme technologique aux sources involontaires des technique ,* in *Gilbert Simondon, une pensée opérative,* publication de l'Université de Saint-Etienne, juin 2002, pp. 214-247 et dans l'article publié sous le titre « *En route vers la planète radieuse : déferlement des techniques, insolence philosophique* », in *Rue Descartes - Revue du Collège International de Philosophie*, «A quoi sert la philosophie des sciences», 41, 2003, pp. 52-63.