WORLD OF PERPLEXITY

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*The powerful disintegration of the atom changed everything, except our way of thought,
leading us to a catastrophe never saw before.
The survival of Humanity needs a new way of thought.*

Albert Einstein (1955)

Only in the last one hundred years born more people than the sum of all previous centuries since ten thousand years ago.

Each year the world population grows about seventy-five million people – the same of almost one Germany, or more than one Turkey, each twelve months; or a Switzerland every month.

Each day the world population grows more than two hundred and five thousand people, in a rhythm of more than one hundred and forty people per minute.

In the last century, the world population quadrupled, having doubled in the last fifty years, reaching around six billion inhabitants.

In 2003, a report by the United Nations revealed that about one third of the people living in cities was placed in slums. In the African continent about 70% of the urban population lives in slums.

Almost the totality of the world demographic explosion is located in poor countries.

At the beginning of the third millennium more than five billion people are located in poor countries, and little more than one billion in rich countries.

In the whole planet, more than 75% of poor people lives in urban areas.

In 1950, about 30% of people all over the world, lived in cities. This number changed to 50% in 2005.

Another report by the United Nations indicated that, in the first years of the 21st century, around one hundred and eighty thousand people are moving from the country to the cities every day. This implies the construction of urban infrastructures equivalent to two cities with the dimensions of Tokyo every year – presently an impossible objective.

Such a strong planetary migratory movement to large urban concentrations, together with the emergence of a worldwide overpopulation, generated the called megacities: cities with more than ten million inhabitants.

In 1970 there were eleven megacities in the world, six of them located in rich countries and five in poor countries. In the year 2000 there were twenty-five megacities, and in 2015 it is expected to be thirty-three megacities in the world – and only six will be located in rich countries. Twenty-seven will be in poor countries.

In 2005 about one billion computers and more than one billion mobile phones were constantly used in the whole planet. One computer to each six people... but great part concentrated in rich countries. In the United States there is one computer for each two people. In Europe, Canada, Hong-Kong, Japan, South Korea and Australia there is one computer for each three to four people. In the East and South Europe, like Portugal, Spain and Greece, the number falls to one computer for each twenty people. In India, a country with more than one billion inhabitants, there is one computer for each one hundred people, but with an expected growth of about 40% per year, in the next years.

In Europe, Japan, Australia, South Korea and New Zealand, the number of mobile phones is around one per person – the double of the United States.

In 2005, in China, with a population of around one billion and four hundred million people, there were about three hundred and fifty million people using mobile phones, representing one mobile phone for each four people. Less than ten years before, there were only seven million people using mobile phones.

Around one hundred and fifty million television sets are sold every year, in the whole world – and the lifetime of each set is estimated in about ten to fifteen years. This means that in only ten years more one billion and five hundred thousand television sets will be working in the planet.

Each television set consumes, in average, about 185 kilowatts per year. Only the new sets that enter in the market each year represent an estimated additional energetic consumption of about 27.750.000 kilowatts every twelve months.

Every year, the per capita energetic consumption in Asia, excluding China and Africa, is of about 185 kilowatts per year. In Latin America this value is of about 1.400 kilowatts/year per person – number that can arrive to 7.500 kilowatts per capita in rich countries.

About 25% of the world population, something around one billion and five hundred million people, does not have access to electricity.

Between 1992 and 2002, in only ten years, and only in the United States, the commercialisation of electronic equipment growth four times.

It is expected that, all over the world, only in the next three years, more than three hundred million computers will became obsolete. Every year, about one hundred million computers are transformed in garbage.

It is also expected that, in the next times, every year, all over the planet, about twenty-five million television sets will be abandoned, becoming garbage.

Every year, about seven million tons of electronic equipments become obsolete and are abandoned. A relevant part of the components used in the production of electronic equipments is highly toxic. When they are transformed in garbage and are not treated under an attentive way, those elements, many times constituted by metals and solvents, start a dangerous contamination of subterranean layers of water, rivers, lakes and aquifers, dramatically affecting public health.

In the year of 2004 it was known that the garbage constituted by electronic equipments already represented about 70% of heavy metals and 40% of lead found in landfills, only in the United States.

Every day, New York City produces about twelve thousand tons of garbage that are transported to places more than three hundred kilometres distant, using six hundred trucks with twenty tons capacity each – what means one twenty tons truck each two minutes, twenty four hours per day!

Almost half of children in France are born contaminated with mercury, a substance that interferes in brain functions and in nervous system. It has been questioned if such a terrible contamination figure, happening in a so developed country, would be related to the inadequate treatment of electronic equipment transformed in garbage along decades.

Many of the gases that polluted air in our cities, roads and fields, were gradually eliminated with the use of new filtering systems. But, these systems only turned even smaller the pollutant particles. So, in various cases, the matter of pollutant gases was simply redesigned at a molecular level, making it not detectable, and even being, in some cases, even to imperceptibly pass through our bodies. Not detectable, they made us believe to be living in less polluted environments.

In 2005, China consumed in its constructions about a half part of all cement produced in the whole planet.

After 2005, Chinese universities started to graduate about five hundred thousand scientists and engineers every year. In the United States, the number falls to about sixty thousand scientists and engineers, around ten times less, for a population five times smaller.

The Indian market started to have, after that year, about two and half million young people dedicated to management and financial systems, while the United States have less than one million and eight hundred thousand young people dedicated to those activities.

Around 70% of Indian and Chinese still live in rural areas. But, this panorama certainly will radically change in the next years. In 2005, India already had thirty-five urban concentrations with more than one million inhabitants. In the next twenty years it is expected that, only in India, will exist more than seventy cities with more than one million people.

In Asia, in 1950, there were about twenty-six cities with population between one and five million people. This number should arrive to two hundred and thirty in the year 2015.

New Delhi and Bombay have, each one, in their urban spots, more than thirty million people. In China, the number of cities with more than one million inhabitants is already over forty-five.

China represents around 22% of the planetary population, but only 8% of spring waters world reserves.

China's grain production decreased about 30% between 1887 and 2005, possibly because the quick reduction of its spring water reserves.

The situation of India's spring waters reserves was considered as *extremely serious* by the *World Bank 2005* analysis. Millions of small subterraneous waters extracting tools were chaotically installed all over the country, exhausting hydric resources beyond the capacity of regeneration thought rains.

Only one hundredth of one per cent of the whole water in the planet is renewed by hydrological cycles.

It is this hundredth of one per cent, formed by circa of hundred and ten kilometres of rain precipitation each year, what supports a great part of live on the planet. In the whole planet, every hour, the average of rain is only twelve cubic kilometres by hours. 1.6% of the water in the planet is frozen in polar capes and glaciers; only 0.36% is located in subterranean aquifers.

It is such a delicate equilibrium what has maintained our planet like we know.

In India, the treatment of residual waters reaches only about 10% of the population. A few years ago the city of Sao Paulo, with an urban spot of about twenty-five million people, was able to treat only 20% of its residual waters, which was increased to about 60% accordingly to the most recent reports.

In 2006, more than one billion people, almost 20% of the world population, still don't have access to clean water. Every two seconds a child up to five years old dies because of contaminated waters ingestion. This represents one thousand and eight hundred children per hour, and almost sixteen million dead per year!

In the whole planet, 80% of the cities with most polluted air are located in China. In 2004, China became the second biggest responsible for carbon particles emission in the atmosphere, after the United States, already representing about 65% of the American emissions.

If, in the next years, the per capita consume of petroleum in China and India arrive to 50% of what presently is consumed in the United States the world production of petroleum should be duplicated as to attend to the global demand. Great part of geologists believes that there are not sufficient oil reserves for that.

Inspired on Richard Feynman's genial ideas, Eric Drexler developed, in the beginning of 1980s, the principles of a new science – the nanotechnology. Drexler dreamt to be an astronaut. Facing to the impossibility of that, he turned himself to the nano scale.

In the last years, researches related to nanotechnology have absorbed a great part of investments in richest countries. Since 2001, only the National Nanotechnology Initiative, a United States Department, already invested more than five billion dollars in research of this new science branch.

After 2005, Europe, the United States and Japan have invested, each one, independently, around one billion dollars in this field of research. The United Nations officially considers nanotechnology as a tool of great importance for the reduction of world poverty.

Nanotechnology: to assemble dynamic structures with atoms. In some sense, they are similar to mechanisms that no longer pertain to the animal, vegetal or mineral worlds. Neither are them about alive or non-alive organisms.

Like what happened with cinema, radio or television, to mention only three examples, also nanotechnology brings in itself, at its origin, the previous media as content. Because of that, it is normally referred – even if sounding folkloric – about machines, robots, computers and even industries created in a nano scale. In fact, nanotechnology opens a new universe that simultaneously is organic and inorganic, automatic and intelligent, implicating a new logic.

Invisible and a-sensorial structures that can be self-assembled or self-destructed.

Ten atoms of hydrogen, placed side by side, in line, represent a nanometre. A human hair has, in average, a diameter of about eight thousand nanometres.

Curiously, when took in nano scale particles have in larger surface area, in comparison with our macro scale, making that, many times, there are more chemically reactive. Thus, in general, materials have different behaviour in nano scale than when in our daily condition.

In our human scale, carbon as graphite, like what we so vulgarly use as pencils, is highly malleable, but in nano scale it become a hundred times harder and six times lighter than steel.

Many people don't know, but presently several products have already been produced with carbon nanotubes, like bicycles frames, tennis racquets or devices for airplanes among others.

Both in the United States and India, research laboratories have developed carbon nanotube structures with the objective to filter and remove pollutant particles, in liquids or gases. Other nano structures, like magnetic nanocrystals, start to be used as filters to eliminate the presence of arsenic in water – typical case that occurs in Bangladesh.

In the 1970s, subterraneous waters in Bangladesh started to be bombed to surface, for the use of population. But, they did not know that those waters were contaminated. Without other resource to potable water, the population became victim of the considered the most serious case of water pollution in History. Only more than thirty years later a new technology was developed to solve the problem, with the cost of millions of human lives.

The changing of scale in the use of materials and substances generated a new world of physical reactions: in a nano scale the aluminium can spontaneously explode.

Zinc we know well, so many times used as ceiling in poor edifications, is opaque in our macro scale – but in nano scale it is transparent. And copper, which we commonly use in electrical cables, become so elastic that can be stretched up to fifty times without break.

Hydroxipatite particles – crystals that form our teeth and that are an important substance for archaeological dating – have, when took in an atomic scale, the same structure of teeth enamel. Such condition will turn possible a perfect reconstruction of our teeth.

Nano structures have permitted the creation of various new materials, like a molecular adherent cover for cotton fabrics which, not obstructing the passage of air and not affecting the regular characteristics of fabric, creates a barrier against penetration of liquids; or self-clean glasses with the use of titanium dioxide nano particles which interacting with ultraviolet rays detach from its surface strange elements like powder or grass.

Another new material is a kind of semiconductor paint, filled by billions of nano cells able to capture solar energy. Thus, painting covering the walls surface can be transformed into powerful energy accumulators, immediately feeding building infrastructures.

Very soon, rubber used in tyres can be substituted by an element which nano structure turns possible huge reduction of erosion and great improvement of performance both on dry and wet pavements, reducing sound noise generated by attrition with soil.

With the growing application of materials elaborated with nanotechnology, the worldwide tendency will be dramatic reduction of raw matter consume, like iron, copper or even gold.

Countries that have survived selling their natural resources can soon be out of market, in a situation of profound planetary isolation.

On the other hand, the non-reduction of the use of natural resources, with the increase world consumption of products and energy, will quickly lead our planet to exhaustion.

This turns even clearly an old and polemic question – the only way-out for countries subject to famine and exclusion is education, culture, art and science.

In this sense, the whole planet should be oriented to an intense and concerted effort, a global project, dedicated to intensive education, science, art and culture, with a long-term program of various decades.

But, the intense process of alphabetisation, which has been a central element of all educational program, with the consequent development of syllogism capacities, directly related to predicative structures, will generate profound social transformations – a planetary metamorphosis on how we understand and deal with our planet.

That is, in short-term such a planetary effort oriented to education, arts, sciences and new technologies, would conduct several societies to a period of instability with the transformation of the ancient tribal and acoustic cultures.

We deal with concepts, sets of meanings, ideas. Such transformation – even if contradictory at a first sight – is the fundament of what we call *tradition*.

There is no tradition without rupture. The world *tradition* appears from the Indo European particle **tr*, which indicated the *passage from one to the other side of a river*, implying *change*, *transformation*.

We recognise a tradition only when everything already changed – we really know anything only in limit-situations, moments of metamorphosis.

In this wave of mutations, a new field of research emerges from nanotechnology: the synthetic biology.

Good part of it is characterised by the called biobots: autonomous robots with size of virus, projected to make specific operations like to identify cancerous cells. Some medicines, many related to cancer, already commercially use biobots.

In the development of new materials, proteins are taken out from spinach chloroplasts – plastic element present in the interior of vegetable cells, full of chlorophyll – with the objective to create powerful cells for solar energy storage through photosynthesis.

New types of artificial bacteria, self-reproductive and programmed for self-elimination accordingly to density, have been developed in laboratory, as to absorb and process the excess of carbon dioxide in atmosphere.

On the research of Nature, a new transdisciplinary convergence appears: *BANG – bits, atoms, neurons and genes*. A new way to approach knowledge of matter through simultaneous and interdependent study of information technology, nanotechnology, neurosciences and biotechnology – all bundled in a same discipline, or transdiscipline, unveiling a new face of what we vulgarly call reality.

A reality that unveils surprising facts.

We need eight grams of fossil and chemical products to produce each gram of microchip. That is, the production of electronic chips, present in our computers, television sets, telephones, cars and electrical appliances, uses chemical elements in a quantity up to eight times its weight. Seven parts of what is used in the fabrication of these components become, automatically, junkyard.

Both art and science, by their own nature, presuppose no final answers. There are fields in constant transformation and questioning.

When we consider radio, television or telephones, we are dealing with a formidable process of disincarnation. Not only as energy but also as information.

The voice at telephone, as well as the image and sound in movies, doesn't have body. When dealing with *real time*, communicating with someone through telephone, for example, all information happens without body. But the body has been, along thousands of years, an essential element of communication.

The first system of intelligence that started in a radical way the disincarnation process was the phonetic writing. Paper accelerated, amplified and changed that phenomenon.

Gutenberg press definitively disincarnated the personage, before pertaining, in a privileged way, to the world of theatre.

In theatre, the personage was fundamentally voice. That was the environment in which the word *personage* emerged. It happened from an ancient Latin expression that indicated a tool for actors work on the stage, used in the Etruscan world since more than two thousand and five hundred years ago: a mask destined to amplify the voice and to distinguish the principal personage – the *personare*, to sound, to listen.

In Sanskrit, the word *vac* means oral communication, but it also indicates a divine and sacred reality. It launches – like our word voice – its root to the Indo European **wek* which meant, since pre-historical times, the *emission of voice*.

Along thousands of years voice coined the principle of human identity and generated the nationalism.

Telephone was the first process of voice disincarnation and it also was the first act of the *real time*. But the voice at telephone reduces the number of listeners – from what would before be various hundreds to only one each time, like what aspired the literary, mechanical and visual world.

Literature produced reading in silence, incarnating in our own bodies the most different personages, and dramatically leading the whole world to a vanishing point: each one of us. This is the literature's logic: when one reads in silence, only *one at each time* exists.

Radio generated a sensorial reversion of the phenomenon created by literature – no longer personages happening in our bodies, but personages made by disincanarted voices. Like, in some way, something through a looking glass. It is in that time that Lewis Carroll wrote *Through the Looking Glass*, in 1872. A few years later, in 1888, Heinrich Rudolph Hertz demonstrated the existence of radio waves.

Discoveries turned into true pulsars of intelligence distributed in space-time – as to give reason to Hermann Minkowski and his fascinating space-time theory.

It would be only in 1906, just before Marconi, and to a small group of curious people in Washington, that Reginald Fessenden performed the first effective radio transmission – using a fragment of a Haendel's piece with the aid of a phonograph, and a violin solo performed by himself.

Radio amplified the phenomenon of voice disincarnation through a wireless media, being able to immediately reach the most distant places, sometimes not accessible by cable, and launching voice on a new geography – an ephemeral and instable geography.

Because of this, for decades radio was considered a question of State, and even today, in many places, it has been subject to special permissions by different governments.

What was before destined to some hundreds, in the alive discourse of a politician, and reduced to a single person with the telephone, radio expanded to millions people in a single shot, in *real time*.

The voice listened through radio is without body – it is a disincarnated voice.

In the first decades of the use of radio, the phenomenon of oratory – since always fundamental to political activities – was strongly amplified, generating Hitler and the super nationalism: a formidable amplification of the tribal sense.

Nationalism is a product of voice. It is what forges the idea of nation. The disincarnated voice is the pure voice, the total voice. From that, unique and total sensorial evidence appears: the primacy of a pure race.

The pure voice.

All nationalism is tribal in its essence.

Television disincarnates the image and the sound.

Television is the movement without body, but with its two-dimensional image, free from space, time and matter.

The great success of the belief on an Earth invasion by extra-terrestrial beings, especially between the decades of 1930 and 1960, was because of that. The general conception of extra-terrestrial beings is that of image-beings, without music, disincarnated, pure imagination while image in action, in its maximum sublimation.

However, information in television also is characterised by another phenomenon. The perception of form depends on the ocular scanning and, in special, on the called saccadic ocular movements. We scan the world with our eyes in short involuntary movements of about seven to ten times per second. Without those movements our vision simply disappears.

Television substitutes this process by the sweep distribution of visual signals produced by cathode tubes, as well as by the frequency in plasmas and liquid crystal screens.

The screens we see become, in this way, into a true sensorial prosthesis, making by the eye the saccadic movement.

And our eyes stop.

With our eyes stopped, our ears become more active and we can experiment the sensation of immersion.

What we know as immersion, typical content of the virtual reality systems, emerges with television.

So, information knows, in this way, a new changing of its nature.

Paper and phonetic alphabet – amplified by the press – generated a nature of information in high-definition and low-resolution. That is, we write a scene and it suddenly becomes into a true scenario of action, but it is a low-resolution system – letters that simulate sounds and sounds that simulate action. Two plans of degeneration projecting a simulacrum.

Because of this, everything in literature happens in deepness – like a dive inside a parallel universe, through interactive layers of signs in an ample pattern of simultaneity. A universe of fields articulated by a single attractor, a vanishing point: the reader.

Few people notice that literature is a hallucinogenic media par excellence.

It also happened with Western music history – the appearance of the symphonies, and the most complex works for quartets, the camera ensembles, the fugues and the most complex pieces for piano solo: species of layers of events in simultaneity, with tonality organising the sounds in function of a principal note, vanishing point of a strongly hierarchic processing. All turning around the same logical principle that characterises literature.

Here, cognition is considered the formation of knowledge, in the structuring of a complex sign relations network with the most diverse natures; and perception as the structure of media and sensorial systems. Obviously, both are melted in a same complex of action, but its division, even artificial, permits us to establish some interesting principles for the comprehension of the order of thought mutation.

Telephone changes the scenario of definition and resolution established by literature. While resolution is directly related to perception, definition is a cognitive process. Naturally, one always changing the other.

While our acoustic spectrum goes from the sixteen to the twenty thousand cycles per second, in the youngest and more accurate ears, with telephone the spectrum of frequency is reduced to something around only three thousand cycles per second. The rest is eliminated, virtually recreated by our minds and, so, its resolution is relatively lower.

Even before the appearance of telephone, cognitive aspects of the acoustic world, what we call definition, were always low.

The factor that designates low-definition in the acoustic world is the relation between our systems of short and long-term memories.

Our short-term memory system transfers only fragmented and partial information to the long-term system. Thus, being diachronic and ephemeral, acoustic world is obliged to a high degree of repetition, of redundancy, as to sediment itself while long-term memory.

So, to sediment information while long-term memory it is necessary to exist a high degree of the recurrence for its fixation. While visual world is stable enough in temporal terms, turning possible large periods of recurrence, the acoustic universe is extremely volatile in time.

By this way, acoustic societies normally are coined by interpersonal compromises, all person in permanent debt each other. While in the visual world debts between people are automatically cancelled, like a zero sum game, in the tribal world they never end. This makes the acoustic and oral universe to frequently accuse the visual one to be egoistic, poor in solidarity, closed, cold and threatening.

Because of this, so frequently, tribal and acoustic societies look to reaffirm, at all moment, their values, and their relational elements. Not only, also this makes oral societies be accused of lack of precision – a universe where people are permanently in debt each other cannot have a precise design. All values articulate themselves inside a complex network of strong involvement.

Precision is a logical question, a fundamental element in the structuring of thought.

Therefore, acoustic universe is characterised by high-resolution and low-definition – the opposite of literature. On the other side, provoking a sensorial reversion, telephone is characterised by a low-resolution in low-definition.

Being designed by low-resolution and low-definition, telephone never could be a media for the use of many people at the same time, and finished to be specialised itself in a single individual each time. But, having a non-precise nature it also is more resistant, quickly spreading out as an efficient tool for the person-to-person communication.

Radio, amplifying the sound spectrum of frequency and geographic amplitude, increased the definition and quickly expanded itself to many people.

Television – amplifying and changing radio's expression, and constituting a universe of various disincarnated personages – finished to revert the basic sensorial function established by paper and phonetic alphabet: designing a high-resolution in low-definition, in some sense similar to the acoustic world. That is: there images and sounds are designed in high-resolution relatively to radio or to telephone, but from the image saw we only memorise a few points per second – beyond the fact that we don't directly participate in the perception of form, performed by the frequency of the screen.

So, television becomes total and ultra superficial information.

With television everything happens on surface – everything extremely present, but highly imprecise. This made to spread out much faster among illiterate societies. In Brazil, for example, television was quickly absorbed in the slums, while in Europe it took decades to be implanted in an overpowering way.

Because of this, Brazilian and Mexican novels quickly became a huge worldwide success.

Differently from literature, where the vanishing point is the silently reader, each television set, as well as each radio or telephone, is a centre of perception and cognition, vanishing point of the attention.

But, in computer networks there are no longer centres.

The fusion of worlds and cultures generated by hyper interactive telecommunication systems in real time implies everything we know – from the information design to everything we consume.

We call this phenomenon virtual – term appeared from the Latin virtus, which means full potentiality.

Before we had the disincarnation of voice and body – now, we have the disincarnation of thought.

Voice, image, texts, and movement: disincarnated thought.

While in the universe of literature everything is formed by discrete and precise unities, in digital world of hyper interactive telecommunication in real time – and, in a certain sense, like what happens in the acoustic world – reality cannot be fragmented.

Like what happens to a tribal leader, also in digital universe the history no longer can be cut in parts.

Everything is part of a single system.

And like what happens in tribal world, our long-term memory needs a higher degree of redundancy, of repetition – and, so, we have the emergency of entertainment.

Everything gradually becomes entertainment. Cars that before had the only function of transportation are transformed in gadgets. Cities like Paris, Venice and many others, are transformed in gigantic thematic parks.

And, as only difference produces consciousness, we gradually dive inside a world without great differences or, in other words, into a universe that aspires to diversity by surface.

It is curious to reflect on the fact that literature produced the aspiration of a homogenous universe, made by discrete interchangeable particles, but that generated a world of great asymmetries; and that virtual universe projects the ideal of diversity, generating a world where even differences – evidenced by wars and misery – generally are only data for entertainment.

If, before, literary world emerged as the opposite of the oral one, voice in silence in opposition to speech, strong identities appeared from differences. Now, virtual reality's integral universe is not an opposition to speech, but yes to written word, penetrating as an unstoppable subversive element in the roots of tribal world.

In tribal world all are equal in their differences – but there are strong identities promoted mainly by repetition of social relation elements, represented by religion, family and clan.

In virtual world there are no religion, family or clan. Everything is disincarnated, disembodied.

Here starts much of the contemporary violence – which nothing more is than a search for identity.

Tribal world quickly absorbs digital tools and loses identity, not passing in a definitive way to a different world, like what happened with the transition from the acoustic universe to the literary one. All terrorist groups acting in name of tribal values do it with the use of virtual world.

Virtual world amplifies some aspects of tribal universe, because it starts from television and runs from a literary, predicative and visual culture to an integral and transsensorial universe. But, it does that on surface and with a profound change of scale.

This, suddenly, acoustic world becomes virtual, however disembodying itself, loses the person-to-person relations, becoming surface.

The disincarnated world doesn't know departments.

In virtual world, the image of an actor can be immediately replaced by that of an athlete, a scientist or a politician – all transformed into entertainment, all time.

The entertainment is the essential sign of obsolescence. When something becomes obsolete it does not disappear, as it is generally believed. The thing that becomes obsolete is that one which passes to integrate the continuous fabric of action free of criticism and consciousness.

It is what we are without thinking.

The obsolete is, therefore, past and not future.

With hyper communication interactive systems in real time, everything tends to entertainment – everything tends to obsolete.

There is no more novelty. Everything is past. Everything becomes, in some way, *déjà vu*.

By this way, the universe of hyper telecommunication interactive systems in real time is characterised by a new logic: to be and not to be. It is a strange logic both to acoustic and to literary systems.

In this new universe, even questions of *resolution* and *definition* suddenly become paradoxical.

Everything can happen.

The digital network, while a new media, profoundly penetrates in the whole fabric of action. It is present in the design, films, television, books, newspapers, radio, clothes, perfumes and even in our food. Everything compounding a strong complex of intelligence.

The dynamic structure of what Roy Ascott called *hypercortex*. A hyper structure of thought designing and continuously changing all human relations.

In a family, like in a company, in a group of friends, in a city or in a school, for example, all contradiction pass to be present – success, misfortune, ethics or disrespect: paradoxically all differences together, but always while surface. So, everything passes to have an equivalent value.

Family, geographically amplified by car, now becomes volatile and ephemeral, existent and non-existent.

But, there is in such new logical structure an unexpected phenomenon: from the hyper superficial, in the underground, hyper dense "points" of intelligence are projected. They exist, but are placed in permanent derive.

It is enough to take the world image – a single planet but also totally fragmented, the spectrum of a continuous war with its horrors side by side to fabulous scientific discoveries.

A panorama of war without end.

A process of globalisation that provokes, simultaneously, equalities and brutal inequalities.

Ignorant people elected to public positions. Scientists and researchers without job. Athletes and entertainment actors making millions; professors and philosophers abandoned by society.

Not aware about how things happen, we generally look for a literary standard logic to explain these questions – because our content still is literature.

The explanation is a predicative question par excellence.

Thus, we go to a new logic, which form is closer to poetry than to prose, and which meaning is permanently eluded by its own structure.

Paradoxically, it is a structure of thought full of mystery – and, as if we penetrate into the most absolute contradiction it is mystery what generates that we call Enlightenment, discovery. We dive into a world full of enigmas, discoveries, paradoxes and creativity, tragedies and perplexity.

When taking environment, human beings, we defend diversity. But, in a superficial world, many forget this fact when consider culture.

We forget that, after all, everything turns around two great forces, two fundamental laws of thermodynamics: aggregation and desegregation.

In 1950, Harold Innis showed us how tribal and acoustic cultures are oriented to time, through informational accumulators like stone, that is, par excellence, a strong temporal interconnector; while visual societies, articulating more fragile, volatile and precise media, like paper, are oriented to space.

While stone establishes strong informational connection through time, surviving to large periods of duration, but with low physical mobility, the most fragile and most flexible media, like paper, quickly spread out in a large geographic area.

With digital systems, there is a virtual – potential – presence everywhere. And survival in time – given everything be permanently reconstructed – becomes potentially infinite, even through a continuous cloning process.

Informational cloning, backups and copies of memory. By this way, we expand ourselves, for the first time, simultaneously in time and space, and pass to understand time and space as vectors of a same cosmic event, as showed by Minkowiski a century ago. In the same way, we pass to understand historical phenomena as atemporal explosions, in the two directions of time. In space we establish the concept of ideosphere.

We pass to understand scientific discoveries phenomenon as something like punctuated equilibria, true field folds in the space-time fabric.

This transversal cut in space-time fabric unveils another paradoxical element. Given the digital systems be formed by the number, and more precisely by zero and one, they have a high precision nature. Such high factor of precision turns everything more fragile. So, however we establish a formidable expansion in time and space, we also suffer sudden and radical cuts of memory, through unexpected lock of digital systems or even by the attack of informational virus, making that space-time presence be and, at the same time, not be a fundamental factor.

A new nature that implies a new logic which, despite unveiled along since long ago by the brilliant intuition of a thinker like Maimonides, by Charles Sanders Peirce's logical sagacity, or by the notable creativity of Stéphane Lupasco, it never was and still is not easily accepted.

Virtual universe's logic is, simultaneously, that of aggregation and desegregation, that is: viscosity.

Thus, perception and cognition patterns become volatile and in permanent transformation.

This is the new design of reality. Principles of paradigmatic transformation, where paradigm is the vanishing point of the whole process, is transformed into a process of syntagmatic mutation. It is the whole in metamorphosis, with the fluctuation of diverse paradigms acting in network.

This generates the sensation of a world where everything can happen, at all moments.

Contrarily to what happened to visual and acoustical universes, with virtual world the cyclical patterns are aperiodic and non-linear in terms of space-time. Everything can be coherent and incoherent in a given moment.

What we know as Law, as well as the ideology or styles in art, all presuppose a systemic coherence – a strange thing to virtual reality.

All Law is conventionally based on a specific corpus of ethos.

The famous defence by Pascal – *lex dubia non obligat* – is now applied as universal phenomenon. If in the 18th century it designated an aspiration to coherence, now it indicates a state of reality. It is what so many times happens when even laws are created or changed with the objective to cover crimes, to increase taxes, to eliminate rights or duties, changing the rules of the game every moment. This happens practically all days, publicly, at daily light, without protests or contestations.

Virtual world reality is a flux of continuous change.

However, apparently as a new paradox, people aspire to a new planetary ethos, through the consecration of a universal ethics, always on the surface. A universal ethics would imply a global homogenisation, which is an impossible thing to a world constituted by networks of networks of information in hyper interactive telecommunication in real time.

In the era of airplanes and television, cities were transformed in the suburbs one of the other. It is the type of transportation that projects the idea of province and court.

Province and court simply do not exist in isolated places, as well as they do not exist when everything is a single thing. However, to virtual world, everything is a single event and, at the same time, everything is fragmented. Ideas of province and court mutate to types, or the most varied behavioural models, competing among them, in the continuous overcoming of all kinds of fashion.

All dictated by consume laws.

In virtual universe there are no longer centres, neither extreme factors of importance. Everyone can be everything at all moment: total potentiality.

The called First and Second Worlds are gradually blended into a big *first world*; while Third and Fourth Words are transformed in a huge *fourth world* – no more geographically isolated, but inside a same neighbourhood, present in all cities. And the planet walks to a gigantic urban concentration.

In this complex world, profoundly disincarnated, coined by ephemeral and volatile relations, by a dynamic structure of virtual relations, everything tends to the immaterial. So, gradually, goods give place to services.

Political leaderships without ideology, without nation, formalised by numbers – this is the digital universe's very first nature – from market researches to market analysis, to economic predictions, tending to be similar to meteorological reports, and urban impoverished societies although rich in consume in entertainment.

Countries transformed into large surfaces for consume and entertainment, with the paradoxical emergence of discontinuous points of high repertoire and high competence zones.

In this new universe two figures emerge with special evidence: incompetence and irresponsibility. A little everywhere the world seems to become full of irresponsible and incompetents – save rare and notable exceptions.

The word competence appears from the Indo European root *pet* – that meant *creative energy*, to launch himself ahead, the impulse *to make things*, to create new things, to change. That particle also generated our words *impetus* and *plume*, of the birds, indicating the act of to fly – and, also, the words *perpetual*, *appetite* and *repetition*. All them indicating, in some way, that mysterious idea of *impulse*. In the 13th century, it was associated to the Latin particle *com* – which reveals not only the notion of contiguity but also of *ensemble* – generating the Latin term *competent* that meant *to suit*, *to correspond* and *reconciliation*. A set of creative impulses took as a positive thing, a benefit. Later, only in the 15th century, at the same epoch of the revolutionary invention by Gutenberg, it would appear the idea of *competence*, as a set of impulses ahead, an ensemble of impetus, of creative energy with a *vanishing point*; a capacity of innovation, of elaboration, with precise target.

Competition is not *concurrence*. While the later means *to run together*, *competition* indicates the sense of a set of impulses in an action of transformation, of changing with a precise objective.

When we think our world as full of *incompetence*, even having in mind, immediately, the idea of lack of capacity, we reveal, even not aware, that what really happens in the gradual absence of an impulse to change.

This is one of the very first signs of a world characterised by superficiality and entertainment.

The word *responsibility* has a different origin. It appeared from the Indo European *spend, that indicated *the act of to make a libation*, *to make a religious ritual*. From that our word *espouse* appeared – as a relationship consecrated by a religious act; but also the word *response*, from the Latin *sponsus* and *spondere*, indicating a kind of *return*, of *devolution* face to a sacred act.

The term *responsibility* would appear only in the 12th century, with the start of paper production in Europe, meaning in its origin a compromise with a religious act. Only in the 18th century we will have the emergence of the word *irresponsible* – in an epoch when we were already visual and literary enough as to establish a specialised designation to who doesn't follow his own obligations.

A world of entertainment is a universe of stereotypes. The stereotype is the anti-sacred. The stereotype is characterised by the repetition of formulae, of standard paths on the information, paths without discovery. On the other hand, the idea of sacred implies the discovery, the Enlightenment.

By this way, we dive inside a universe of irresponsible and incompetents – not establishing, however, judgements of value. It simply is about a new reality, not being, obligatorily, better or worse.

A reality where everything is in total instability.

Free from any centre, we became free from the weight of the exact error, of the absolute guilt, because the system becomes unpredictable, instable, *undecidable* – to use a mathematical term. The absolute error, the absolute guilt, only exists in an environment of absolute foreseeableness.

Contrarily to the erotic, pornography and obscenity emerge with literature, as a condition of fragmentation and specialisation – figure detached from the ground. But, this is no longer possible in a virtual universe.

The word *pornography* literally means the written about prostitution and only appeared, as a cult term, in the 18th century. The word *obscene*, in its turn, appears a little before, in the 16th century, etymologically meaning *bad presage* and indicating, in its origin, an offence to the habits that, only then, started to become standard.

In virtual world, *pornography* and *obscenity* gradually lose the place of importance and taboo they had before.

What pass to exist are the more and more erotic environments, gradually incorporating what before was obscene and pornographic, through advertisement, movies, television, a little everywhere – without the prominence of judgements of value. Our homes became, so, in what before was restricted to specialised magazines and forbidden books.

Even pornographic films, before hardly commercialised in an exclusive and proscribed black market, are now easily sold, a little everywhere, definitively incorporated in free market.

Sex – that is vital and primary – passes to pertain to stock markets all over the world, with thousands of products of all kinds directly or indirectly supported on images and ideas before forbidden. But, prostitution – that does not operate mass culture – continues, in the great majority of countries, out of law.

With virtual universe emergence, everything before announced by newspapers, magazines, telephones, movies, radios and television, becomes – directly or indirectly – for the first time in the History of Humanity, real time.

So, also the phenomena we know as time and space change.

For the first time we have the real time expanding in a planetary scale – no longer as an individual phenomenon, like what happened with telephone. No more the cyclical time formed by kinds of parallel layers, so characteristic in medieval societies. No longer the rigid notion of diachronic time established by Gutenberg's press, by literature, by the mechanical culture.

Past is no longer a remote thing.

What made past be a remote thing was our condition of memory. With the flux of time, images and sounds quickly disappear, in a gradual and inevitably way. This phenomenon projected the idea of *hic et nunc*, here and now. With it, the notion of aura of the single artwork also appeared.

Now, it is no more about technical reproducibility amplified to a planetary scale, but also the *real time* and a new condition of memory – a new theatre of memory.

With a world of disincarnated thought, artwork aura is dematerialised and transformed in the idea itself. By this way, aura – that before was assured by a single material support – is mutated in the principle of discovery. Art no longer has value if with it will not be an immaterial set of ideas, references in network, moments of discovery.

In such process, past becomes present. A universe populated by phantoms and fantasies.

The word *phantom* appears from the Greek *phainem*, which means *to become visible* and that also generated terms like *phenomenon* and *fantasy*. We turn visible an immense galaxy of information from the past.

We no longer take past as a remote thing. We have photos, movies and high-resolution images, texts, sounds, all conferring high-definition to the past – to what we before had as distant and nostalgic.

Cicero, Socrates, Bashô, Imhotep and Leonardo da Vinci among so many others, are all present, here and now.

We assume not only the Sumerian, Japanese, Indian or Aztec pasts while our common cultural heritage, but also everything in a multiple non-linear space-time complex. No more the present time, in the sense of an aspiration of its radical separation from a remote past. Everything flue in our memory, like a tourbillion in viscosity.

Also because of this it is no longer possible to talk about paradigmatic changes, but yes about syntagmatic metamorphosis.

We can travel to the Ancient Greece at home.

Such notable dynamic non-linear space-time structure also has direct physical implications. We are cognitively and physiologically formed, at all moment, by the transportation of all kinds of things through our planet – what René Berger so sagely called teleanthropos.

Thus, we redesign the geography of cultures, seasons, knowledge and genetic complexes through a gigantic process transporting food, blood, parts of human bodies for implants, artworks and all kinds of artefacts – material and immaterial.

What was, in the universe of literature, figure without ground, now becomes ground without figure. A complex panorama that implies every figure be a new kind of ground, on which diverse figures and grounds compete.

The literary principle of democracy aspired to attend the desires of a majority – even if ideally minorities are preserved – by the ways of a hierarchical model of command, through departmentalisation of independent powers. But now, it is no longer about a single majority – and yes majorities distributed all over the world, whose destines are strongly interlinked.

In the literature world, the public figure – recalled from the image of the Prince – was a personage: with a voice and, through which, a precise set of ideas. In the virtual world personages are transformed into a kind of tuning spectrum in continuous transition, like ephemeral theatre actors improvising on a complex in permanent mutation. Also because of this, the ideas defended by many politicians became vague and volatile.

In the literature universe, education propagated itself through sets of information in high precision – nothing led to chance. In virtual world, education constantly uses what we could call a permanently incomplete knowledge, to be constantly filled by teachers and students – both pertaining to the same educational universe.

When we deal with questions involving the virtual universe emergency, of tribal and literary universes, we deal with conflicts of thought structures, not with contents.

Contents appear only as degenerated references of those logical processes.

If television generated global village, eliminating space and time between events – changing the world geography and design – the virtual universe of interactive telecommunication systems in real time and the teleanthropos reality produced an even more radical metamorphosis, launching the human being to the imaginary of continuous entertainment.

Everything as imagination, all time.

Marshall McLuhan already announced, in 1969, the fact that we have gradually became hunters. Who before was an information collector in the world of literature and a passive receptor in the tribal world, is now totally transformed into a hunter with the most varied preys, always in action, in movement.

This is the nature of many of the pop music, rap and djs – mixing things that already existed before, in a fast process of improvisation on everything is known, in an intense exercise of bricollage – always by the surface – making use of everything what appears like an emanation of the material reality and that, in the tourbillion of the multiplicity of the production of gadgets, change all the time.

In a world of dynamic events, which are cloned and recycled at all instant, of the ground without figure, where everything is full instability, human being becomes hunter, but of a different kind.

Governments, terrorists, companies, actors, researchers, politicians, artists – all start to hunt.

But if in prehistory it was about to hunt something detached from a context; in the post-history we pass to hunt moments of the context, incorporating it, and this is the very first nature of what we call audience.

The phenomenon public appeared in the sequence of Gutenberg's movable press. Its logical structure is clear – an emitter and various receptors, a book and various readers. This is the fundamental structure of the plane perspective with its single vanishing point.

Public was about a punctual phenomenon: a single book reaching millions of readers. This is the logic of the Prince.

But what we call audience no longer is a static thing turned to an artwork, a piece of entertainment, a single book and not even to a single personage; neither about one single work nor one idea reaching millions of people. Because of this zapping appeared. It is a continuous of attention. And, as the quantity changes quality, such continuous of attention becomes superficial – and this is the logic that begins with television, radio and telephone, and that virtual universe incorporates.

The word public appears from the Latin populus, term that also launched the words publication and publicity. On the other hand, the word audience

comes from audition, to listen, from the acoustic world. It is curious to note how the virtual world, and before it the electronic, recalled from the acoustic and tribal universe the word *audience*.

The new audience is a continuous reference, turbulent, unexpected, surprising, without voice – implicating a permanent hunt. Tom Jobim was used to say that in Brazil «it is not enough to kill one lion, one must kill one lion everyday day». This is the image of the virtual universe. It is not enough to make something important in a determined moment, but to spread out to all moments.

Someone can be a great composer, artist, scientist, philosopher or an excellent writer – but, if he will be out for some time, immediately passes to the redundant continuum of the cultural fabric, even being alive. It is the perennial obsolescence.

So, in this universe in permanent transformation, everything becomes conspiracy. The word conspiracy begins with the Latin spirare that meant to expire, to exhale, to emanate, to blow. From that, also, the word spirit.

From the union of the word spirare and the Latin particle com – that indicates the idea of ensemble – we have conspiracy. It is about a set of emanations, of coherent ideas. We always look for coherence to understand a whole – even when such coherence is not part of the world that makes us perplex. This aspiration happens in all directions – because even who acts, do it understanding his world.

To this design of meanings two words are associated, in an almost secret and surprisingly way: *environment* or *ambience* and *culture*.

Etymologically, the word *ambience*, similar in several Romantic languages, and *environment*, bring in them the sense of *blow around something*, like *to surround* – very close to the sense of the word *culture*.

The word *ambience* has its etymological origins in the Greek *amphi*, that means *around something* and that was recalled from the Indo European **ant*, which meant *to blow*. *Environment*, in its turn, means, literally, *to turn around something*, *to surround*.

The world *culture* appeared from the Indo European **kwol* that indicated the ideas of *to walk around something*, *to surround a prey*, like a hunting in action. From that, also, we have the word *circle*.

So, took in its most profound sense, *culture* reveals its *environmental* nature.

The word *culture*, as generally referred nowadays, as a thing of the spirit, of the knowledge, only starts to be used after the 16th century, after Gutenberg's press. And the word ambience would begin to be used only in the 19th century; while *environment*, however we know its birth at the 17th century, was extremely rare up to the 19th century.

The verb *to conspire* already existed in the 14th century, but with the meaning of agreement, pact, not obligatorily in the negative sense. It would be only in the 15th century, concomitant with Gutenberg's press appearance, that the expression conspirer would appear – with the same sense we use until now.

As a new media brings in itself the previous one as its content, all these concepts and ideas passed to the virtual world as content, as degenerated references.

Everything passed to turn around conspiracies, environment and culture – but all as entertainment.

We can not forget that culture is everything what makes our social order – from all kind of language, to the design of our tables and chairs, to our behaviour or the behavioural laws and rules.

The world became political, in the sense of a continuous conspiracy – really existent or result of analysis, fruit of how we understand events.

And, naturally, conspiracy implies the ideas of security, vigilance and control. In this world in permanent conspiracy, trust practically disappeared as a universal value. And there, the no-information simply makes no sense. Trust nothing more is than to believe in something we don't know, but that is part of a promise, of an agreement, of the future.

One of the aspects of John Cage's *silence* is exactly this – the criticism of a society for which everything must be, in one or in other way, permanently known and controlled; a society where, relatively easy and gradually, people open hand of their privacy exchanging it for security.

The word *security* emerges from the Latin *securus*, which appeared only in the 13th century – a century of great changes. A century that lived the incorporation of Arabic numerals and with them the concept of *zero*; the systematic use of coal as source of energy; of the paving of the roads; of the emergence of glasses; the appearance of gunpowder; the beginning of a massive expansion of the use of mirrors; the appearance of the first mechanical clocks; the foundation of Cambridge, Coimbra and Padova universities; of kabala's strong development and expansion; a world of troubadours – popular singers spread out all over Europe; of Fibonacci; the crusades; Saint Francis; of the first European flag created in Denmark; Thomas Aquinas; Gengis Khan; the Inquisition; Cimabue; Roger Bacon; the first industries of paper in Europe; Marco Polo; Giotto; the formation of the Swiss Cantons; Dante Alighieri and the Cathedral of Florence among so many other events and notable personages.

Henry David Thoreau said that «all change is a miracle to contemplate; but it is a miracle which is taking place every instant».

This because change is the very first nature of life – principle that teaches us to change in a universe in permanent metamorphosis.

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