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Collective Intelligence, A Civilisation: Towards a Method of Positive Interpretation

Pierre Lévy

I foretell the coming of one planet-wide civilisation based on the practice of collective intelligence in Cyberspace. However, before coming to the crux of the matter, I would first like to justify my methodology, which is not that of scientific prediction but rather of poetic imagination. To contrast prediction and imagination in this manner is not to imply that imagination equates with falsehood and illusion. On the contrary, I believe that imagination, and especially collective imagination, *produces* reality. In choosing imagination over prediction, I mean to underline the fact that the future has not yet been written and that we are probably much more free than we think. We are responsible for the world which we create together through our thoughts, words and deeds. That is why I am convinced that it is much more constructive to use our own powers of perception and freedom of choice in a creative manner rather than denounce, judge and condemn the world as it is, that is to say, at the end of the day, others. Does this mean that we should abandon our critical faculties, our ability to differentiate? Of course not. Rather, every positive thought, word and deed subtly indicates the path which it has chosen *not* to take. The fact of indicating and then taking a certain path implies a 'critique' of those not taken. When we exercise our freedom, and our poetic freedom amongst other things, we necessarily evaluate the alternatives before making a choice. However, in doing this, creative imagination summons a world yet to come rather than reinforcing negative stereotypes, prolonging conflicts or entrenching differences.

It does not do this from nothing, nor does it simply follow its own whims. Proceeding relentlessly by direct observation and attempting to overcome all prejudices, I endeavour to identify, from amongst the thousands of embryonic forms which the current situation has created, those which, given the opportunity to develop fully, will be most propitious to increasing our freedom. As I conceive it, creative imagination cannot therefore be dissociated from a process of reading and interpreting—a sort of profound vision—for

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which reality and meaning are not a given, but are instead potential, only to be revealed by an act of free understanding. From amongst the infinite number of virtual paths possible, creative interpretation selects one. However, this freedom is not arbitrary—it must refrain from relying on pre-existing concepts and vested interests in its projection of meaning. It attempts to give a certain life back to the text, the image or the situation in its entirety, a life whose outpouring will overturn prejudices, predictions and beliefs. The material objectivity of the world, the reality 'which everybody can clearly see' (and which changes with each culture, period, theory, subjective point of view) is only ever a sclerosis of creative intelligence, an inability to capture the evolutionary and organic nature of the world. Thus I conceive of situations as landscapes of possibility which my perceptions, interpretations and deeds will develop in one direction or another. At any given moment, the world is made up of a mosaic of signs, each of which opens a door onto another mosaic, and so on infinitely. Which handle should we turn? Which link should we click on? In the Romance languages, 'semence' and 'semantics' share the same root, both connote the virtual, the potential of the future, be it in the domain of organic life or in that of meaning. In the immense landscape made up from grains of meaning, which seeds should we water?

The most interesting question is not therefore 'is this interpretation true?,' but rather 'what type of path does this interpretation open up?' To which reality does it give rise? Will it harden our everyday experience, render it more solid, material and painful? Or will it give rise to an increase in freedom, a further refinement in the play of signs, an affirmation of life in the world and of the pleasure of existing?

If I choose to interpret the more 'positive' signs, those which carry freedom within, it is not because I wish to claim that 'all is well,' nor that society is not unjust, nor that all suffering has vanished. It is rather to conjure up as vividly as possible, in my mind as well as in that of my reader, the paths which lead towards emancipation. For there can be no doubt regarding the best route to take: that of freedom.

Our Responsibility

The Internet is a truly Surrealist mode of communication from which 'nothing is excluded,' neither good nor evil, nor their many forms, nor the debate which would vainly attempt to separate them. The Internet represents the unmediated presence of humanity to itself since every possible culture, discipline and passion is therein woven together. The fact that everything is possible on the Internet reveals mankind's true essence, the aspiration towards freedom.

Just like truth and falsehood, good and evil also belong to the world of language and grow in complexity with it. What is this chaos which dominates Cyberspace just as it does the contemporary world? Where can order be found? This is what we would like to know. We look high and low, join different clans, argue, lose the run of ourselves, fight.... We denounce 'evil' on all sides, always ready to point the finger at others. We eagerly swarm over all sorts of 'goods'. And, in doing this, we complicate everything, we accelerate the process of evolution, just like the wind and certain animals disperse plant seeds far and wide, contributing to the evolution of the vegetable ecology. The Internet will reveal the true hierarchy of good, because what is at stake is the essence of language: freedom. This hierarchy is complex: hyper-textual, interwoven, alive, mobile, teeming and spinning like a biosphere.

Many of us already take part in the on-line exchange of ideas, information and services. We engage in dialogue in virtual communities housed by mobile networks which are

continually being reconfigured. Soon we will all have our own web site. In a few years, we will avail of avatars or digital angels—capable of conversing on their own—to send our memories, projects and dreams out into Cyberspace. Every individual, group, life-form and object will become its own self-medium, emitting data and interpreting itself in a mode of communication whose transparency and richness will stimulate through opposition.

Omnivision will replace television: no matter where we may find ourselves, we will be able to use Cyberspace to direct our gaze to any part of the world which we choose. And the intensity of that gaze, just like the insistency of our questions, will give rise to an infinite amount of new details. Driven by our desire to know, we will learn everything it is possible to learn, from the constellations to social situations, from scientific experiments to interactive fictions. To whoever can formulate a question, all will become visible from every point in space or time, every direction, every level. However, this 'all' or this 'every' do not predate our questions and techniques. Rather, they result from our questions, they are its never finished—unfinishable—task. Reality—including the reality of biological life —will become more and more alive, intelligent and interconnected; it will resemble interactive simulations more and more and will be increasingly designed in the digital matrixes which make up virtual worlds.

We will take part in on-line role-playing games whose aim will be to invent virtual worlds which resemble the real world as closely as possible (and vice versa). The winners will be those who conceive of the most ingenious new forms of cooperation. We will learn the ever-changing rules of creative collaboration and collective intelligence in a universe fed by heterogeneous sources of information. It will be impossible to tell whether the virtual communities which provide this apprenticeship are on-line universities, communications companies, games worlds or deterritorialised democratic agorae.

No reference, authority, dogma or certitude will remain unchallenged by the future which awaits us. We are now discovering that reality is a collective creation. *We are all in the process of thinking within the same network.* This has always been the case, but Cyberspace renders it so evident that it can no longer be ignored. Now is the time of responsibility.

Such power, freedom and responsibility can only oblige us to be audacious in creating new paths to the future. In one sense, nothing will ever change. As always, we will be born, suffer, love, weave beautiful and meaningful patterns together, and then we will grow old and die. However, in another sense, we are now in the position to invent a new human reality, just as at the end of the Neolithic period mankind evolved by inventing agriculture, the town, the state and writing. The present mutation is, however, much more rapid. In place of agriculture, biotechnologies now offer us the risky possibility of guiding the biosphere's evolution in real time. The convergence of life—which is increasingly genetically modified and artificial—and technology—which is increasingly alive and intelligent—will leave us free to pursue more creative enterprises. Instead of towns, we are now constructing one planet-wide metropolis, connected by air, road and rail links. We are in the process of building one transcontinental, omnipresent capital which will comprehend high-finance, science, the media and entertainment industries: therein, everything circulates, people, signs, mobile communications machines, interconnected means of transport. Linked by bolts of information which flash between them like lightning, the skyscrapers of Hong Kong, New York and Sao Paulo sing the praises of the Almighty Dollar (higher praise than that given to their respective gods by Egyptian pyramids or European cathedrals). The unending conversation of Cyberspace carries on the process started by the semi-divine priest-kings of Antiquity when they first engraved laws on stone tablets. We

discuss the changing meaning of laws in an intellectual climate where documents and facts are never further away than the next hypertext link. The pros and cons of every issue will be redistributed in numerous virtual forums, like so many synapses in one giant brain whose neurons flicker on and off, and we will vote for new laws electronically, each law so voted being regarded as provisional and bound to be superseded by ongoing developments in our collective apprenticeship.

However, as we all know, bombarded as we are with media information, our civilisation is teetering on the brink: war, misery, ecological disasters. If we were to take certain paths now we might irretrievably compromise our freedom, and even our survival. The very fact that we are now in a position to destroy everything should make us aware of our responsibilities and our freedom. However, if we do not succeed in convincing ourselves that we are free, collectively free, collectively intelligent, that we are linked by language in the one network of thought and decision making, if we do not manage to convince ourselves that we can consciously increase our collective freedom and intelligence, then we are in danger of being condemned to wander indefinitely.... or of becoming suddenly and ignominiously extinct.

I am now going to risk formulating a proposal. We must move in the direction of a more powerful and deliberately assumed freedom and collective intelligence. This is a paradoxical aim since it evaporates once it reaches the horizon of the opening-up of meaning: a collective apprenticeship which has attained the meta-level, and which is becoming ever more meta. Prolonging the process of biological evolution, cultural evolution continues the opening-up of the scope of meaning.

I would therefore claim that we are approaching the dawn of a new civilisation whose explicit aim will be to perfect collective human intelligence, that is to say, to indefinitely pursue the process of emancipation into whose path language has thrown us. If I have worked so hard at understanding the significance of Cyberspace, it is because it seems to me to be the most up-to-date tool available for improving our collective intelligence, the most recent path discovered for opening up our possibilities of collective choice.

There are three different dimensions along which our collective intelligence can grow. There is the dimension of power-sharing along the lines of Cyber-democracy. There is the dimension of productivity and prosperity along the lines of Information Capitalism. Then there is the dimension of spiritual and artistic grace in which the multiplicity of virtual worlds and games contributes to the comprehension of the sacred world.

The foundation of all other forms of collective intelligence, their base, and the structure which is the slowest to change and the hardest to move is that which relates to power. The intermediary layer, that of wealth, is more mobile, adventurous and speculative. Finally, there is the experience of life become the free-play of symbols, a game which has no other aim than the exercise of a freedom amazed by its own infinite nature. This state of grace is that of happiness as well as that of art and spirituality. The high tension and lightness associated with this state of grace carry in their wake the whirling dance of wealth and the heavy tread of power. Art is turned towards exploration, it conjures up the future and comes close to the exaltation of mysticism and prophecy.

Towards a Cyber-democracy

However, let us begin by examining the heaviest, the most opaque, the most difficult. Let us begin by looking at the structures of power. The first form which Cyber-democracy takes

is the digital town, a localised virtual community which renders the social links between those who occupy the same territory more dynamic. It optimises the possibilities of exchange between resources available and projects requiring them, leaves the decision-making process more transparent and allows for a local democracy in which everyone can participate. Indeed, much more so than the nation, it is the town or metropolitan area which constitutes our true living capsule and place of real interaction, the town is one of the building blocks of our planet-wide collective intelligence.

Cyber-democracy equally requires that public administration, whether it be at a local, regional, national or international level, follow the example of e-commerce enterprises. That is to say, it must become more transparent, be accessible night and day and consider us as citizens to be served rather than as subjects to be administered. Around the world, e-government seems to be moving in just such a direction.

The new possibilities of on-line expression, dialogue and coordination which political and social movements benefit from, as well as the blossoming of virtual commercial agorae, can now ingeniously organise the distribution of political information and debates regarding the different possibilities of action in a manner which creates a new public sphere, one which is much more rich, open and transparent than the press or television. Finally, on-line voting, which has already been envisaged in many countries, will allow members of the public to express themselves on a wide range of topics more directly and more frequently than is currently possible.

But the great mutation—and the great hope—to be brought about by Cyber-democracy resides in the possibility of one planet-wide legal, judicial and governmental system. As a network of interactive communication which will soon cover most of humanity, Cyberspace makes democracy at the level of the human race possible for the first time—one no longer limited to traditional historical frontiers. Not only is one planet-wide Cyber-democracy now possible, but it is becoming more and more *necessary*. Ecological problems, science, technology, trade, communication are all world-wide phenomena, but legal and judicial systems would remain fragmented? Everything can be made compete: medicine, education systems, religions, cultures, ideas, merchandise and businesses. Only justice is not subject to competition, because its very nature is to mediate between competing parties. When different judicial systems are in conflict it is justice itself which is annulled. And yet, today, everything is uniting—everything except national judicial systems which remain divergent and dispersed. The current planet-wide economic, technological and ecological processes can only be balanced by a legal and judicial system which is itself planet-wide.

But the need for legal and judicial systems to be large enough to correctly serve humanity has a deeper, more fundamental aim than simple governance: this aim is peace. So far, cultural evolution has succeeded in outlawing slavery, proclaiming the rights of man, ensuring the notion of universal suffrage and has begun to ensure the equality of the sexes. But we have not yet attained all our goals. To our shame, we are still subject to war, to the fact that we incite to hatred, sell weapons to each other and, ultimately, kill each other.

Should we so wish—and assuming that we have the courage which our freedom demands—we can now relegate war to a period in our pre-history. Rather than making a list of all the obstacles which stand between us and this goal, we should instead consider the concepts and reasons which prevent us from imagining a peaceful future to be mere illusions. Wars are always fought for futile reasons, for signs and for ideas, whereas ideas should be seen as an inexhaustible source of play.

It is only one world-wide government which, by implementing laws democratically passed by the collective intelligence, has the possibility of establishing universal peace.

Henceforth, war is a form of cultural backwardness. In a civilisation founded on collective intelligence, human aggression could be sublimated into economic competition, guerrilla warfare fought with information or virtual conflicts; but a world-wide judicial system would definitively outlaw murder. *Once peace has been established by a world-wide government then, perhaps, it will become possible to resolve the pressing problem of our material and spiritual misery.* Peace and freedom are the *sine qua non* of prosperity: they are the conditions, not of the end of history, but of the beginning of our real history, that which will see the continuous development of our collective intelligence and the construction of a city open to all life forms.

The new law will be supple and complex, but one. It will emerge from the resolution of problems in many different virtual communities. In Cyber-democracy, the law will aim to protect the act of creation, and will attempt to provide economic, technological and artistic processes with as much support as possible. The law of collective intelligence releases creative forces.

Theory of Information Capitalism

Once peace and one world-wide, democratic law have been established, then creative efforts will no longer be threatened and prosperity will take off. Information Capitalism is the machine needed to enrich Cyber-culture. As its name indicates, its principal goods—be they its raw material or its finished products—are information and ideas. This economic regime will of course still produce material goods—though these goods will become more and more 'intelligent', just as their conception, manufacture and sale will grow into increasingly more complex cognitive and informational procedures. There are at least three ways in which Information Capitalism is similar to communism.

Firstly, information and ideas cannot be held to be the exclusive property of anybody in particular. A person who sells information does not lose the use of it once it has been sold; unlike, for example, an item of clothing or an apple. Moreover, information is now ubiquitous in Cyberspace and multiplies almost without cost. Information is 'free'.

Secondly, the ultimate source of wealth has now become clear: the intelligence and collective creativity of groups of humans. While collective intelligence's force depends to an extent on technical parameters, and notably on the development of virtual worlds favouring cooperation, it also depends on the education, skill, honesty and courage of individuals who establish means of exchange and partnership. It becomes profitable to invest in knowledge and honour when prosperity depends on the quality of conversation. Collective intelligence will be all the more productive for coordinating the efforts of free individuals.

Thirdly, there is the convergence of two separate trends: the remarkable growth in share ownership and in the on-line playing of the stock markets on the one hand, and the continuing mergers of multinational companies on the other hand. Soon, only three or four giant companies will be in competition in any given sector of the world-wide economy. These companies will become a sort of planet-wide public service, while ordinary citizens and producers will be able to sit in judgement on them simply by exercising their free choice of consumption and investment. Information Capitalism will move towards the common ownership of the means of production: the network, information, company shares. In the transparency of the Internet, the great conversation of the world-wide market will catch up with the free speech of democratic agorae. Cultural evolution creates new modes

of social organisation, new techniques, new aesthetic forms which oblige us to exercise our freedom more and more. In this sense, the Internet and 'capitalism' are intimately linked. By 'the Internet,' I mean continuous invention in the freedom of communication, and by 'capitalism' I mean the uninterrupted invention of new economic forms. Because *capitalism is not a system* (it is only a system for those who think in terms of systems). Capitalism's—especially Information Capitalism's—unique characteristic is the ongoing search for new organisational forms, ever more supple and intelligent. Its companies constitute delicate patterns of networked virtual communities, all of which 'simplify their hierarchies.' It invents new means of exchange which are more complex and deterritorialised and new markets which are more virtual, transparent and rapid. It produces goods which cannot be appropriated: free information, free knowledge, freeware. It calls for producers which are free and independent, yet associated in one collective intelligence.

The scientific community was the first community to explicitly organise itself according to the rules of collective intelligence. Each member of this community must be aware of the findings produced by others, produce original findings him or herself and help others to do the same. As it happens, it is precisely the Internet which the scientific community chose as the means of communication capable of allowing it attain its goals. In adopting the Internet, Information Capitalism is, at least in part, adopting the methods of collective intelligence employed by the scientific community. All it needed do was replace knowledge with merchandise and then turn knowledge into the primary merchandise, that which produces all others. The medium is the message. In Information Capitalism, the largest companies become types of on-line universities or research laboratories quoted on the stock exchange; they produce knowledge, develop skills and organise cooperative undertakings.

In this new competitive game, the most competitive are also the most cooperative, the most convincing are also the most transparent. Information Capitalism will carry most of humanity along with it in a never-ending dance of apprenticeship. This is a meta-game in which the best players succeed in bending the rules, succeed in initiating some kind of revolution in merchandise, in sales, in finance, in law, in the structure of the company or of the market in general... As it moves towards a communism of intelligence, Information Capitalism is starting a permanent revolution.

Those who would denounce this shout out: 'Look at these predators'... and they are right. All infamies must be uncovered. But Information Capitalism succeeds in channelling aggression and greed into a symbolic and legal game. Evil is sublimated into the generation of wealth. On the battlefields, fire and steel shed blood in the name of symbols and ideas. In the new marketplaces, we do battle with ideas and images with the aim of exchanging signs, magical objects, communication and knowledge. Having turned to information, capitalism has abandoned the industry of carnage in favour of that of the image.

General prosperity will be brought about by the free association of those who produce ideas, i.e., collective intelligence. Since true wealth is not material, goods, money, the market and the techniques of Information Capitalism will all become 'virtual'. As it becomes more and more symbolic, the play of Information Capitalism comes to resemble art and grace.

The Ascension Towards Grace

Art precedes the market, it invents it. Companies are now imitating art more and more: a style, a brand name, a designer label, a certain manner, know-how, sensibility or taste.

Information Capitalism needs 'creators'. Companies are in the process of becoming their advertisements, logos or 'cultures'. If art speaks to us about the manner in which we produce meaning, and therefore speaks to us of how we speak, then Information Capitalism is selling us new means of speaking, new communicating objects and networks. In discovering new manners of producing meaning, art also discovers the next object to be sold on the market.

However, despite these similarities, and despite the fact that it is itself an object to be sold, art exceeds all finality and all notions of economic value, and this because it carries us into the domain of gratuity. This artistic–religious grace is not concerned with wealth or power, but with the 'production of meaning,' the autonomy of the 'production of meaning,' the exploration of freedom. As we all live in language (including all cultural signs and not simply linguistic signs in the narrow sense) this 'production of meaning' can only be collective. The artistic–religious collective intelligence does not simply investigate new forms of semiosis, but also new means of *sharing* meaning, that is to say, it implicates us one with the other, turns us into autonomous and unique sources of meaning. This dimension of grace, *the mutual implication of independent sources of meaning*, also called love, is not necessarily limited to the human race, but is rather infinitely open.

Just as with spiritual quests, artistic work is judged by its ability to displace meaning. The artist prays or meditates in the sphere of signs. If information is that which can change the meaning of a situation, and if really important information can change our way of seeing, then art is a religion of information.

All the great mutations in the history of language have also provoked—or rather *are*— mutations in the nature of the divine. The ideographic writing systems allowed for the development of the first complex polytheistic religions—complete with their own clergy and theology. The alphabet carries monotheism: the two inventions are contemporary and all the important monotheistic religions (or universalist ones, such as Buddhism) are transmitted in alphabetical texts. The invention of the printing press was a factor in the development of the Reformation and in the creation of lay religions such as liberalism and socialism. This suggests to me that the coming of Cyberspace, which is a further step in the evolution of the power of language, is also a *religious revolution*—digital art forms bear witness to this as, indeed, do more traditional means of expression.

Although henceforth indefinitely reproducible, or rather capable of being rendered actual by virtual matrixes, and having therefore transcended the problematic of the original and the copy, works of art remain something other than a simple reproduction. They reflect that inimitable voice heard by those whose ears are turned towards the source. Because it is not concerned with the effect it may have, nor with any future success, great art, which is instead turned upstream of perception, forges the future. As Nietzsche said: 'great events are carried on the wings of doves.' Hovering at the edge of the perceptible, the work picks up imperceptible signs, subtle signals. Artists are looking for that which eternally has not yet been named. The work, which explodes into our shared space of meaning, demands that we ask it the following question: what do you mean? What unheard of forms of meaning are you suggesting? What messages are you carrying from creative force?

The arts of today—cinema, video, interactive games, virtual worlds, digital music, genetic art—are made with computers. They are all connected by the network in one critical dialogue. Art is now transmitted by digital means, that is to say, precisely by that which demonstrates the present increase in the power of language. Just as it is for the mystic, reality is also a tremendous flow of signs for the artist. The artist must turn towards the inner screen of his consciousness in order to see forms take shape. As it happens, forms

take shape in digital matrixes, in networks, in interactive devices and in the cooperative procedures of virtual worlds. A work of art can never be finished, it is rather constantly growing and open to cooperation; it envelops us just as the network—our new collective nervous system—does.

Art also bears witness to the mutations taking place in our bodies. These are now carried by safer and faster vehicles, adulated in stadiums, gazed at on porn sites, sculpted by exercise and health foods, remodelled by medicine, drugged by the pharmaceuticals industry, extended by various prostheses, becoming part of other bodies thanks to organ banks and blood transfusion, exposed to planet-wide epidemics, inherently part of the biosphere which they eat and breathe, genetically modified, cloned, conceived in vitro. And yet, still mortal, still craving love, the body does not disappear in Cyber-culture: it is instead transformed into a hyper-body, just as our minds all join together in the network's hyper-cortex.

When I surf the Net, I am exploring the intelligible world, the world of signs and of language, the virtual universe. But the Net is a world which is open, alive, sensitive, evolving, a world which invents its own laws; along with millions of others, I transform and enrich it with my acts. Freedom of expression and communication are constantly growing, overcoming numerous obstacles in the process. Cultural evolution frees up the forces of creation, allowing for the production of new sign systems and new languages which are alive and autonomous; from Information Capitalism's systems of transaction to on-line games, from virtual worlds to biotechnology, from digital art forms to robots with artificial intelligence. These new languages will become ever more interconnected and will evolve and multiply in ever more varied, complex and surprising ways; they will thus present to those gathered the surrealist mirror-image of the collective intelligence.

Henceforth, culture is the life of those signs which have become independent biospheres spinning in Cyberspace.

The Direction of the Evolution

Man constitutes a bridge between Heaven and Earth, he forms a passageway between the natural and the supernatural. Through him, the life of signs is elevated from the life of the body where it was born and attains its autonomy through art, religion, technology, writing, science and through the world of ideas which is today growing ever more complex and functioning like a second biosphere in Cyberspace. Human language is a virtual flower which blossoms infinitely as it grows towards the invisible centre of Gaia.

Cyberspace is a poetic figure which has suddenly appeared at the horizon of human experience. The constant and surprising nature of its acceleration reveals, in the present, the infinite openness which is the essence of man. The process of cultural and technological evolution is creating closer connections between us which actually open up our mental space. Cyberspace has become the placeless place where humanity's unceasing dialogue with itself can grow and expand. Writing, the alphabet, the printing press, the audiovisual media and now Cyberspace have all increased language's power. It is only now that we are beginning to understand the essence which drives us as humans, and this because evolution is bringing us back in time towards a principle which we can see more clearly every day. Language is a *machine which weaves together the sources of meaning* that are our minds. It is a *machine which accelerates the passage of time* and which allows us to learn more quickly from ourselves and from the world. It is a *machine which produces collective*

intelligence and one which is now beginning to take control of its own evolution as well as that of the life which it supports. By looking to the future of Cyberspace, we are actually travelling back into ourselves, to the period before time where language has its origins.

Life became language around the birth of man and language becomes life when turned towards its eternal future. Despite what the idolaters and materialists think, infinity is not revealed to humanity in one 'message', but rather through language itself, through its unlimited ability to generate meaning, that is to say by the sudden emergence of freedom in the history of the world. Each of us relives the history of our species in our own lives: that of being the point through which freedom emerges from the base matter where it has been growing since the beginning of time in order to turn back on itself and recognise itself for what it is. In the blueprint of creation—or in the adventure of evolution—this is what our species must do: in that ambiguous zone where lines are transformed into dotted lines before disappearing into nothingness, we must draw the line an artist would. Language travels through us and outwards, taking shape in millions of language and culture machines; this allows us to create a new form of artificial life, one which has no name or ego and which is calling to the future, stretching out towards an untamed form of freedom.

The organic life of micro-organisms and plants slowly emerged from inert matter thanks to the digital codes of DNA. The nervous system's digital code then evolved from this plant life to produce the colourful and varied world of the animal kingdom. The digital code of human language has since opened up the infinite possibilities related to art and religion: questions, narratives, signs, knowledge. Language allowed the new life of signs, culture and technology to grow within the old one. Language is alive. It is striving towards a form which will be lighter, faster, more changeable than organic life. With writing, language acquired an independent memory. It has since become universally effective, digitalised as it has been by the alphabet. With the printing press, writing invented a system for reproducing itself. As language passes through the different phases of its evolution, human culture also becomes more powerful, creative, rapid. Following the progress made by the media, culture has become more diverse and rich: it now counts new artistic, religious and technological forms as well as industrial and political revolutions. Cyberspace represents the most recent development in the evolution of language. The different elements of our culture—texts, music, images, virtual worlds, simulations, software, money—are now reaching the ultimate phase of digitalisation. They have now become ubiquitous in the network—once they are somewhere, they are everywhere—and are connected by one burgeoning, multicoloured, fractal and inflationist fabric, a fabric which is in one respect the meta-text which surrounds human culture. Software is a living form of writing and has given signs a certain independence, an ability to act by themselves in the digital matrix which is their home. Cyberspace is in the process of becoming the ecosystem for the world of ideas, it is a bustling noösphere which is transforming rapidly and which is beginning to take control of the biosphere, directing its evolution towards its own ends. Life in its entirety is rising up towards the virtual, towards infinity, through the door opened by human language.