

The Ecology of Consciousness

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Translated from the French by

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FOREWORD

We all want to live, and live happily, without taking the bread out of others' mouths. No one should pay with his life for the comfort of mine. Often, the price to be paid passes through the environment. To destroy an environment is to rip away the air, the water, the bread and even the landscape from the children of the future. To live to the detriment of others is simply not compatible with happiness, at least for a consciousness that is frank and honest with itself. This simple law of consciousness is simultaneously a source of anxiety and hope.

Anxiety, for with the development of the industrial and commercial structures of the nineteenth and twentieth centuries, if anything has become difficult, it surely is living without taking bread, water, air, or freedom away from other people. To clothe oneself, to eat, to drink, maintain a home, travel, etc. without abusing a human being somewhere in the world, without endangering an animal species, without destroying the balance of the soil or climate, seems almost out of reach. In the present structure of production, the lives of some take from the lives of others and this creates a "bad conscience" that is repressed and unhealthy. For all those who wish to improve the world by bringing to it more lucidity, intelligence and wisdom, it is an appalling challenge. For guilt is not the beginning of wisdom, on the contrary, it blinds us even more. How then can we foster the birth of consciousness without being tripped up by the reactions produced by guilt? And during this time greenhouse gases, for example, are expanding exponentially.

There is hope, for if the search for lucid happiness is a deep law, it gives us courage because we know that we will not let go of ourselves as long as we have not succeeded in living in a certain harmony with nature and our fellow human beings. Our consciousness is going to work on us as long as we have not achieved this. It does not proceed like guilt, through accusation; on the contrary, it invites. When we take a breath of its air, we feel as if we have left a confined world that is suffocating between submission and a sense of guilt. Yes, consciousness harasses us, but like a desire or a need, like a thirst. It seems that the foundation of all these changes is there. Consciousness never gives up, it clears a path to new attitudes. In the beginning, it touches only a few people, then small groups a little bit everywhere. And then, a miracle! Civilization turns upside down, a world dies, but another one was already there for a while and getting ready to take form.

The aim of this work about consciousness is to maintain a critical reflection about the metamorphoses through which a human being passes in her or his personal and collective life. If we succeed in better seeing the process, we can offer a better support to her or him. No stage in personal and collective life is an "evil", but a fixation, and consequently a maladjustment, brings with it many misfortunes.

I am addressing here those who hope for fundamental changes and are working for them. I would like, along with them, to base hope on lucidity, for it is not sufficient to know what isn't working, we must also find our way toward new visions.

Let us return to the thesis. There is perhaps a base, a pedestal on which to place our feet: precisely measuring ecological disasters (and social problems are problems of human ecology) drives us to action only if consciousness is fundamentally incompatible with a happiness taken from the happiness of others. This is the essence of ethics, and if it is the essence of ethics, then consciousness is a guarantee of evolution, of adaptation and of harmonious participation with the environment. Now, it is possible that the human being cannot escape her or his consciousness. Hope comes from this and, with it, the courage of action.

Only on the field of consciousness does information produce indignation; on all the other fields it produces only habit and normality. This is why information by itself never brings change; it can even contribute to a failure to act. Is the planet getting warmer? Let's take advantage of this in order to develop the North's petroleum resources!

In the present situation as it really is, we are almost forced to live opposed to our consciousness, we are reduced to living in a state of "bad conscience", in repression and consequently in neurosis. This is not very good for the mental health of persons and of groups. Nonetheless, consciousness continues its work, harasses and annoys us like a tireless gadfly.

And this gives reason to hope, because nothing is clearer, more objective, simple and irrefutable than consequences. We must not believe that ethics belongs to the world of opinions and subjectivity. Ethics is the instinct of preservation made objective. Isolated on different planets, different ethics would yield different results. Some ways of living would destroy their conditions for existence in a few centuries, others would teach collective survival by employing consciousness as an adaptive force.

We exist in reality, which means that our behaviors produce consequences which we cannot avoid, but simply recognize. There is no carpet under which we can hide the consequences of our way of living.

In the real world, consequences inevitably form loops: we are a living matter that depends on nature. And this nature we depend on also depends on us (we are billions). From the point of view of the nature we depend on and which depends on us, we are a species apart: the one that is incapable of unconsciously arriving at a neutral ecological balance, the one that must arrive at this balance consciously and freely. Either we improve our environment or we destroy it. To improve it supposes consciousness; destroying it is done unconsciously, in the repression of our consciousness, in servitude regarding the structures of power we have "unconsciously" allowed to be constructed over us. The blame cannot be placed just on the "crazy people who lead us", it rests also on the unconscious ones who

let them act. Perhaps it is impossible to awaken the consciousness of those who profit from the present pigheadedness, but in the suffering of those who feel the consequences and perceive them a metamorphosis is taking place, I think.

I am appealing to those who work with social issues, to the dissatisfied, to the militants who believe that it is only through consciousness, the right information, enlightened intelligence, education, lucid action that human beings can advance, never through manipulation and imposed strategies. I am appealing then to those who believe in thought and in changes that are conscious, lucid and internal, in changes in vision and the actions which follow from them. The numbers aren't important. Rubbing our eyes helps us more than blending in with the blind leading the blind. We have forgotten that democracy is not the law of the silent majority, but the conviction that consciousness is on the move.

Pretension? Perhaps. But I don't pretend to see clearly, I simply maintain that it is possible to see more clearly and that this is worth the effort, for as soon as vision is improved, if only a little, action is already a thousand times more effective. My ambition is solely to reaffirm the work of the mind as the fundamental basis for action.

Let us return again to the question: is it really viable to live to the detriment of others? People will tell me: "Assuredly yes, since we have been doing it for such a long time! Or even better: living to the detriment of others has made us so flourishing a species that all the primitive tribes and the other animal species are disappearing in order to leave us their place..." We can make that response because we weren't actually there in the past - at least, we weren't there with our technological powers. Because if we had been there with our present powers, we wouldn't be here to sip a coffee.

But if we are the only toxic animal, and also the only conscious animal, consciousness is life's greatest error. Many have preached this: consciousness itself is supposedly the sickness, a mortal sickness, a sickness that eliminates the species which carries it...

One can see things otherwise. Let us imagine that consciousness is unbreakable, that it is impossible to get rid of. When one attempts to amputate it, it huddles, hides, twists and suddenly springs out again, turning itself against the one who is trying to abandon it. Now, it haunts his dreams, pursues him secretly, threatens him with truth, throws at his head the consequences of his acts... Perhaps this simply demonstrates the fundamental dimension of consciousness. Try to betray it, and you will find yourself with serious problems of maladjustment with yourself and with the environment. True for the individual, and the personal and familial drama proves it. True for society, and the social and environmental drama demonstrates it.

It is not consciousness that is the problem, but the fact that it is there to stay and that if we don't want it, too bad, it will lynch us and set its heart on a less refractory species.

I know very well that this is not the fashionable thesis; the majority maintains rather that the human species (the conscious animal) is maladapted in its essence and that it is following its normal destiny in preparing its own disappearance. They assert, in short, that consciousness is incompatible with life, which can persist only in the unconsciousness of instinct. Consciousness is only an accident of life that repairs itself through auto-amputation... As the oilmen say: all things combustible will be finally burned. Law of fire. We are only a bit of wick between the discovery of fire and the fire that burns the house. Who can pretend to slow this mechanism of asphalt, of concrete, of steel and of law? All the world depends on it...

As for me, I maintain that consciousness is in the process of learning how to take care of life. Yes, guilt drives us to bury our heads in the sand; yes, the systems of social and economic reproduction are driving us to rush a little faster against the wall of consequences, the locomotive is hurtling down the slope and no one can stop it; yes, this will be painful. But I remain convinced that, during this time, another world is getting ready, one which will feed from the ashes of this one. I want to belong to it.

I am not saying this in the grip of an emotion. This is not one opinion among others. I am defending the triple thesis already thousands of years old: the thread of life and the thread of consciousness will not give way: they form a unique network of links that is time itself freeing itself in space; in us, they awaken the desire and the ability to participate in creation as it moves. One does not arrive at this triple thesis other than by relying on the history of thought. A great chain is needed, one of thought, of trials and errors, a lineage of women and of men, and we don't even arrive at a complete philosophy. There are still plenty of gaps. But it is already much better than perpetual oscillation between transient opinions.

Life and consciousness are bound together like heat and complexity. Life will by necessity choose life, if not, it is not life. Consciousness will make this choice freely, for if not, it is not consciousness. It is possible, then, that the harmony of consciousness and life may not be attained at this stage of evolution by us humans. On this road, we are no more, perhaps, than a scout too poorly prepared. One day, however, a conscious animal will inevitably achieve the exploit of surviving himself, of surviving his technical intelligence, and he will then be a lucid companion of life, a positive collaborator.

This hypothesis is not verifiable in advance, for if not it would not be an act of life and consciousness, it is verifiable only through conscious action. And one of the aspects of conscious action is to reflect while acting. This is what this essay on consciousness aims at: to nourish hope by demonstrating the intimate relation of

life and consciousness, and to orient the action of consciousness in such a way that it will succeed in freeing itself from the process of repetition and reproduction that is smothering it.

In order to hope lucidly and act effectively, we must take several paths:

1. That of psychosociology: we will seek to define what consciousness is in us (the psychologists' "self"), but also how it succeeds in freeing itself from the conditioning which occasions the reproduction of familial and social dramas. The human being is so easily manipulated. The superego controls its mores, reactions become schemas for behaviors and the past begins to determine the future to the point where the capacity for adaptation no longer allows facing up to consequences. These accumulate and the human drama becomes a tragedy. But the self truly does exist, so liberation is possible. The human being can put his feet on the ground and face reality: adapt and then participate in the harmony of nature.

2. That of physics and biology: consciousness is not merely the capacity for freedom in the face of social conditioning, it is also intelligence at the second degree. And at the basis of this intelligence rationalities are to be found, logics, and various sorts of mathematics. The link between consciousness and reality is also the link between rational, logical and mathematical experience and physics, chemistry and biology. To know "our" rationality and to know reality form a single process, that of science, which reveals to us not a chaos of forces, but an intelligible universe which corresponds to our intelligence. The experience of the close link between thought and reality reverses the pessimistic hypothesis of previous centuries which presented us as strangers in Nature, dangerous and maladapted. Today, scientific experience creates a new hope: Nature and the human being belong to the same intellectual family and consequently we can participate in life without destroying it.

3. The synthesis of the first two ways. Science is done in such a way that all it can report about nature is the rationality of its own intelligence and this gives it a power it can learn to master. But this is not sufficient, for mastering a power obliges us to discover a meaning to life - if not, why master it? Power becomes an end in itself and the drama is surely this. For power, as an end, is domination, subjection, which means killing, since killing consists of transforming a living being into a manipulable thing, or, if you prefer, transforming nature into natural resources. At the same time, human beings abandon their power over power, for they possess a consciousness that transcends functional intelligence (the intelligence of means), their consciousness can grasp and will finalities. Along this way, they discover in the depths of themselves structures, bases and dynamisms which appear to be primary. Consciousness then discovers in itself a foundation, broader than that of science, which allows it to end up with an ethic more fundamental than that of adaptation: the ethic of participation.

4. Going beyond "evil". On the way of consciousness, it is impossible to avoid the problem of evil and of freedom. Yes, we can participate in the life of nature.

Yes, we do have power over nature, but that is precisely what has led us to three grave monstrosities: the exploitation of human beings by human beings, wars, and ecological destruction. How is this possible? Is evil inevitable? Is it part of nature, like a set of forces that lead to death? We will make the effort to go to the bottom of ourselves. Might not there be an essential turbulence in the play of life and death? Perhaps we will discover a way of playing with contradiction that is compatible with duration. If there is an ethic of participation, it compromises with the worst in order to make the better. This may be able to guide our actions in a struggle where the "evil" (that of the past might suffice) might serve as a fulcrum for arriving at a life turned toward creation.

By these four roads we will advance along the unique ridgeline of the mountain of consciousness: time. To make our way is always to come to terms with time. Through these four roads, perhaps we will get to see that consciousness is time¹. If such is the case, we will have to conclude that life has no choice about consciousness because it is already on the way to consciousness. Consciousness is what calls the tune in what we call the "unconscious", but which already is consciousness, and even consciousness packed tighter, surer and more coherent. The unconscious is consciousness in the shadow of its youth. But this does not mean that it will out of necessity end up at light and freedom. It probably needs all our cooperation.

I should warn the reader: exploring consciousness is not an easy adventure. Leaving the world of opinions to enter philosophical reflection is vital to democracy. This is why thought and reflection have always been the first victims of the powers that be. For power, opinion is harmless, for one opinion always has its opposite; opinions neutralize each other. The danger is thought, for it can render useless a whole collection of churches, simply because people don't believe in them anymore. Except that thought is demanding.

But for those who work with social issues, for the workers of consciousness, for those who believe in lucidity, not just in negative lucidity, but in constructive lucidity also, for those who will always refuse to employ anything other than consciousness in order to advance, to think is worth the trouble. It is not simply about achieving an effective action, but also about entering into the very substance which suits our nature - the mind likes to think like the fish likes to jump in the water, the bird likes to cast itself into space, and the ear to let itself be transported by music. Consciousness finds its happiness when walls collapse before it and holes of light appear.

¹ As most of the great philosophical traditions suggest, as Teilhard de Chardin and Bergson "intuited", and as Louis Lavelle has so well demonstrated in Du temps et de l'éternité (Of Time and Eternity), Paris, Aubier, 1945.

No one can hold back the one who wakes up with a start because the temperature of his house has become excessively hot. If submission is a repression, action emerges with awakening.

But always and unceasingly we will hear, like a gong striking our heads, that lucidity leads to despair and that it's better to continue not to complicate life and amuse ourselves while the "great ones" of this world quietly push us into the oven. After the two world wars, after the "cold" war, which killed as many people as the other two combined, after the nuclear threat, after the dramatic deterioration of ecosystems, at the time of the clash of civilizations, we might easily despair of humankind. I agree. It is not, however, a reason to despair of consciousness which can change humans, draw them into a metamorphosis: the civilization of the mercantilization of life must be abandoned like a cocoon so that the butterfly can fly away.

Despite the horror, the concentration camps have also given us a glimpse of how the worst can produce the best. In L'espèce humaine (The Human Species), Robert Anthelme, who survived the camps, says this about Jacques, a doctor he describes as a "saint", not in the religious sense of the word, but in a deeply human sense: "Look at him [he imagines himself addressing the SS], you have made this man putrified, yellowish, which ought to most resemble what you think he is... Oh well, I'm going to tell you this and it's likely to lay you out cold: you have permitted him to make himself the most perfect man, the most certain of his powers, of the resources of his consciousness and of the consequences of his actions... Understand this: you have acted in such a way that reason has been transformed into consciousness. You have rebuilt the unity of man. You have constructed invincible consciousness. You can no longer ever hope to succeed in making us be in your place and in your skin... Nobody here will ever become his own SS."²

The most absolute evil, when it attacks consciousness, does not create evil, but the vaccine against evil. This is why it is important to remove man from all his reflexes of submission. And this can only be done by laying consciousness bare, nothing more - and above all: nothing more.

² Robert Anthelme, L'espèce humaine, Paris, Gallimard, 1999, p. 99 and 100.

PART ONE : The human psyche

It seems natural to begin this study of consciousness with we humans. Because, for us, it appears first in our own thought. It calls us into question.

In order to approach it, we will open several windows. But we will nonetheless follow a precise itinerary, the one that leads to the heart of our existence: if I give no value to what surrounds me, I lose the desire for life. How does it happen that we have to give value to beings in order to have value ourselves? Similarly, if no one awards me a value, I don't find any in myself, and suddenly nothing has any value in my eyes, and as a result the existence or non-existence of the world makes no difference, for in any case I don't care about it. If, on the other hand, I discover my value, I say: What a magnificent landscape! What a beautiful house! And I want to take care of it ("ecology" means taking care of the house).

Consciousness is what gives value, and value is the blood of conscious beings.

But consciousness (the "self") is from the beginning wedged between the moral imperatives of the imitation of others (the superego) and the spontaneous reactions of emotional life (what some have called "infantile reactions"). Affected by these two sets of forces, it is driven to repeat familial dramas and copy social ones. How can it win its freedom? If it does not win it, all the human psyche is nothing more than a vast stubborn determination to destroy everything. It is up to it to find a way of participation compatible with life, on the personal and collective levels. It is this way that we are going to explain.

CHAPTER 1 : Acquiring Value

Let us begin with an acute question of our strange existence: is life worth it? From the start, we notice something troubling. If we attribute zero value to something, whether it is a mountain, the ocean, or the entire earth, it is as if it were not. We no longer see it. It no longer exists for us. One who doesn't grant any value to anything lives in a world that seems empty to her or him, as if the world no longer had any reality. If, one fine morning, my soul were so sad that nothing was worth anything, then the most beautiful landscape in the world would be as if it did not exist and all happiness would collapse on itself. If this depression were perpetuated, I would die of it.

By what mystery does reality remain deprived of all significant substance for as long as I deny it any value? It is my gaze that breathes its importance into being. If I don't produce my act, living is as distressing as dying. The difference between

lethal gray and vitalizing colors comes from my own action. I am the differentiator. If a starless night can seem more luminous to me than a day with glaring sun, this depends more on the shining of my consciousness than on particle physics.

The opposite is just as troubling: when I no longer attribute any value, I no longer care about life, and when I no longer care about life, life appears to no longer care about me. It seems as indifferent to me as I to it. Having fallen to the zero point of value, I can't even know any longer if it's me who grants no meaning to life, or if it's life that grants no value to me. Is it life that is empty or is it I who am not filling it with my judgement? I am no longer able to know it.

In the depths of consciousness there is an act which gives the world its value and without that act I am as if I were not. It is this sense that we are dealing with an "ontological" act, that is to say an act which gives color to things, but then this color turns back toward me and gives me the feeling of being, and then this feeling of being really does give me being, for without this feeling, I would allow myself to die. And this doesn't depend on the exterior: people have let themselves die amid abundance, while others have been resurrected to life in a dungeon full of rats.

It is not suicide that is the mystery, but the fact that human beings can live or not live depending on the grade they attribute to trees, to mountains, to skyscrapers. The mystery is the total depression resulting from the simple fact that consciousness is suspending its act of giving value to life. By a way that is indirect but unavoidable, my existence is bound to my own inner act. Not a conscious act, but an act of the consciousness. Not an act of the will, but a pure act (an act that rests on itself).

Fortunately, infants seem moved by a desire for life that drives them to fill themselves with wonder. Once they are filled with wonder, their desire for life develops and they then perform the act of giving a value to houses, to streets, to cats and birds. It seems to us that the initiative comes from a surplus of vitality, and that it is only afterwards that the child casts her/his light and gives color to the world. But it is not that simple. The child to whom we grant no "ontological" value (linked to her/his person and not to her/his behavior), won't grant any value to anything whatsoever. He or she can even let him or herself die through lack of value. So, by what does the story of the desire for life begin? How does it happen, that condition of human existence we call "the will to live", that gushing spring of value that makes life worthy of being lived?

The child will make different tests. The first: am I worth the trouble? The "operational" question: how many people are ready to make how many efforts for me? How many sleepless nights? How many crises will they endure before they let go of me? The child who receives no answer to this question will let her or himself die. This is what really does happen to infants with whom no one forms

any bonds of attachment. A child whom no one troubles her/himself about does not receive enough value to live.

Nevertheless, to be worth the trouble is not enough; the child would also like to be worth it in terms of pleasure. How many people truly feel pleasure in my presence? When I arrive unexpectedly, can I read joy in Mommy's or Daddy's eyes? Some children create no pleasure at all in those around them. A form of impatience always surrounds them. Their mothers are depressed, their fathers, morose. Their antics arouse nothing but grumpiness. A sad fate.

The value of a child is the same as the value her or his family gives him or her. The child must be able to gather enough value to turn others toward him or her. I am worth something and that is what people turn towards me. They turn towards me and this is what gives me value. In reality, it is preferable that I not know too much whether it is my value that turns people toward me, or if it is people who, in turning toward me, give me value. A healthy uncertainty. Starting point. We never know with certainty if the hen precedes the egg, if the "you" precedes the "I". This not-knowing really does make the "I" and the "you" be born at the same time.

But trouble and pleasure are not sufficient; the child wants to feel useful as well. To how many people am I useful? Who needs me? Who regularly calls upon my talents or my skills? No, no, you're only a child. Everything is set up around you. At the daycare center, the whole world shines on you - even the little chairs are made for your little behind. But you are not useful. Breakfast is made without you, and the housecleaning is done without you, too. The more the environment is organized with us in mind, the more useless we are. We put ourselves out for children, the elderly, and handicapped persons, but how can they measure their utility value?

It's good to feel useful, but if no one is ready to pay me a salary for my skills, what am I worth? If I have no marketable value, am I worth something? In a market society, this value measured by the salary becomes a fetish. Without it, all the rest seems to collapse. But alas! It is an insecure value. It can be lost simply by an automobile accident, an illness, aging.

Let us continue. The child wishes also to leave a mark in some people's memories. How many will remember me after my departure? How many times will they think of me when I leave? To mark the memories of others, the child is ready for the meanest dirty tricks. Terrible is the fate of the one totally forgotten! Think of the homeless who, in winter, die of cold. No one claims their bodies. No one is aware of their disappearance. After a month of not being claimed, they are incinerated in the presence of an indifferent official. A greater misfortune cannot be imagined.

Each type of value - effort, pleasure, utility, mercantile, memory, etc. gives me an importance that measures, so to speak, the weight I have for those around me. Similarly, my value will be measured by the influence I have on people and on

things. If my ideas and my words influence no one, am I someone? There is also the value of belonging to a family or a group. We would like, in addition, to be the one at least one person loves the most. There are many other powers of relation connecting us to life.

Each type of value is like a cord, a line that binds me to others. Without these lines, it's as if I were dead. To gain in value seems not only to be a motivation, but a necessity. As a result, it is preferable to be hated rather than be the object of indifference. To be worth being hated is a last-ditch value that makes life still possible. But to be worth nothing is equivalent to death.

A human relation is the encounter of two human beings who feel that each concerns the other, who are aware that their course can be changed by the encounter. If it has no effect, it is worth nothing and, above all, it doesn't create the feeling of being worth something, either in oneself or in the other. Everything happens as if something should happen in order for me to really exist. If no one reacts to me, I disappear in the universe of objects, in the decor of unimportant things. The equation is perfect between value and the feeling of existence. The value we grant a being is what gives her or him a psychological existence.

However, in infancy, the action of others must precede my own. Everything happens as if giving birth were not birth's final act. It is necessary to add to the nine months of immersion in the amniotic liquid at least four or five years in the fluid of care and attachment. And even afterwards, value, which is an act of consciousness, remains a social link also, which is to say that, if no one exchanges with me any value that is "ontological" (connected to persons and not to their behaviors), my poor self won't live for very long, its pure act can simply stop... Depression, gradual abandonment of life...

Let us go further. I am worth the trouble, I make an impression, I am useful, they give me a salary, they remember me... Good! However, these values are all relative, I can easily lose them, a simple accident and I find myself disfigured, disabled or handicapped. This is a latent anxiety deep in all of us: I am kept alive by my value and my value depends on my relations with others. In a society which concentrates on monetary value, the anxiety is even greater, for a person's value becomes extraordinarily arbitrary.

Fortunately, a humane society seeks its foundation elsewhere. Dignity remains the principal value; I am dignified if I have an intrinsic value. What is a mother, what is a father? It is someone who grants her or his child a unique and priceless value from the sole fact that that child exists. Even if he or she becomes ugly, crippled, autistic or even criminal, he or she will be loved and no one will be able to replace her or him. The value of being is unconditional. It is well known: when parents fail in this task and they have no substitutes, the child experiences great difficulty in succeeding in the world, in existing as her or his own being (this is the case in serious disorders of attachment).

A family fulfills its principal and ultimate end if the relational network it forms rests on the value of dignity sufficiently for each family member to have a will to live.

There is still more. It is often asked, and in every way: is there someone who believes in me? The child needs someone to discern a potential value in her or him.

One ingredient is still lacking. All these values would be far from sufficient to ensure that a single child has the desire to live. A child cannot arrive at life without the proclivity for bonds of attachment to hold to for the long term. If no one has spent time beside me, what am I worth? To be worth the trouble for five months, to be worth one single moment of pleasure, to be useful only to fill a hole here and there... This is not enough. Every human being desires eternity as the horizon for each of her or his relations. This is the very essence of attachment.

What is a family? Two beings are attracted to each other, one moment of Eros, and then as the encounters continue, the relation is strengthened, a conjugal love is born. The family is Eros attempting the adventure of duration. The child will be born from it.

The truth in all this? If my value depends on lies and illusion, I hold to nothing, I float on words that are never backed up by my acts. I don't cost much, so I'm not worth much. The price must be paid. To say "I love you", but to retreat from any behavior that might prove it is a little too easy. Truth is the value of values. Without it, the whole castle of relations holding me out of emptiness collapses.

The stakes are high: if no one reveals my value to me, what proves that I exist? Human relations are a kind of net that saves us from emptiness by exchanges of values. In social emptiness, we disintegrate, we lose even the feeling of existing.

There is something distinctive about beings endowed with consciousness: the objective fact of being is not enough. We enter conscious existence by passing through the consciousness of others. By this passage, we acquire value, that is to say, a reality (for others and for ourselves) without which we disappear as conscious beings. Conscious beings are dependent on conscious beings. Such is the lot of a human being; he stays in being so long as he is held by a consciousness other than his own. His/her pure act is pure relation. In complete isolation, the human being survives only if she or he believes that someone somewhere grants her or him value (God can be part of the equation).

CHAPTER 2 : The forms of inequality

Social connections are vital flows. This value linked to the being of a person is her or his ontological value. It is the lifeblood of her or his desire to live. It ought to be a society's primary value. Moral values come after that. What is it about?

Values in accordance with behaviors. In a viable family as in a viable society, moral values must remain independent of ontological values. If I am worth the trouble simply to the extent that my behaviors are deemed moral and normal, then social anxiety increases, for the value of my person depends on the judgement of others concerning my behavior.

In a secular society, moral values and normative values coincide. After normative values come economic values, the values of exchange, in other words. The characteristic of an exchange value is that I can obtain something equivalent. For example, I can exchange my car for a piano, and I can also exchange one social worker for another. When ontological value is mixed with economic values, this increases anxiety. In a society where ontological values are supposed to be linked to moral (or normative) values, and moral values are in addition supposed to be directly linked to economic values, the anxiety level will be very high, for the desire to live will finally depend on my mercantile value which will itself depend on no matter what accident of life or of society.

In a society ruled by competition, there is not just one, but at least four kinds of inequality or of difference in levels. First, the difference in levels in the distribution of the instruments of power. Power is not linked to the qualities of the person, but to the use of instruments of force: force of deterrence, like weapons, force of rewards, like money, force of manipulation, like that of advertising and the media. Through these forces, behaviors can be bent, can be modeled so as to get work or conformity to models from them. This is the level of inequality of influence or political inequality.

The second inequality is due to economic values. At the top, there are the rich and at the bottom, the poor. This is unevenness in the rewarding of the values of exchange. The lower you are, the more dependent and vulnerable you feel.

Next comes moral inequality. At the top, there are those who can be proud of themselves and at the bottom those who ought to be ashamed. A society proposes models of beauty, of health, of success. At the top, you feel normal and proud; at the bottom, you feel maladjusted and ashamed.

Finally, ontological inequality. At the top, you feel worthy of living. You are invested with a value of being that comes from the gaze of others. You are worth something. Beneath a certain threshold, you are no longer worth the bother; it is social degeneration. You are barely a human being.

In aristocratic, bourgeois, religious or traditional societies, the levels of inequality are relatively independent of each other. One can enjoy a good moral value without being rich, for example; possess a strong ontological value thanks to solid social bonds without having political value. In short, one can be low on one ladder and high on another.

In a "mono-unequal" society like ours, the levels of inequality are very unified. At the bottom of the ladder, one feels powerless from the point of view of political

influence and at the same time very poor in one's ability to satisfy one's needs, ashamed as if one were guilty, and excluded from social connections to the point of doubting whether one has a value in oneself.

But what happens when a human being is unsure about her or his value? At the zero point of value, hate can constitute a form of entrenchment. At least they hate me! Quick! I must hurry to my telephone or my Facebook wall to reactivate that hate which gives me a feeling of existing. She loved me, she detests me. I have avoided the worst: her indifference.

More generally, the feeling of power seems to be equivalent to the impression that one is worth something. If my own being has no worth, the number of people I subject to my power proves my existence. If ten people fear and obey me, I am worth ten. As president of a big company, I am worth a lot.

However, does exercising a power of deterrence, rewards or manipulation produce the same result as being appreciated for one's own value? Of its own accord, a bird comes and perches on my finger. It appreciates me. An act of freedom. I capture it by force. Is the effect the same?

The values of entrenchment -- to nourish hate, provoke fear, dominate, buy votes, pay salaries, seduce, manipulate an ideology, arouse sympathy through sacrifice, sequester through the power of a cult -- do these produce the same effect as being freely appreciated? Here, the effect is not dependent on my being, but on my weapons, my ammunition, my lies, my money, my body's most ephemeral characteristics. It is not me they appreciate, but the instruments of fear, of reward, or of manipulation that I employ. The result is that the more I am feared, the more they submit, but the more they submit, the more I doubt my value. If I didn't have a cent, would she love me? Were a fire to disfigure me, would she still sleep with me? If my lies were discovered, would she still follow my doctrines?

CHAPTER 3 : *All of us*

What purpose do most social encounters serve? To recall in one way or another an implicit social compact: "As long as you consider me valuable, I consider you valuable." This interdependence of values that we mutually award each other creates a specific "us" or "we". It's the "we" of all of us who, in an implicit alliance, award each other value. A sort of collective life raft.

This solidarity is concentrated on what we have in common (rather than on our differences) and all the more so since nature appears indifferent. If the sea, the lakes, the mountains, the vegetables and animals were to seem concerned with us, aware of our destiny and contributing to our happiness, they would doubtless be included in that solidarity. But in the societies that believe that they are not "primitive", this is rarely the case,

The basic membership group is generally the family. In other times, it was a form of solidarity that endured beyond death. Each generation had as its mission to relay the moral, social, and material heritage so as to contribute to a better future for all the descendents to come. Property was much more familial than individual; it could, then, pass through the dead and serve the children of the future who themselves had the duty of transmitting and increasing it.

On this basis, many other solidarities were formed. We are a nation, a religion, a community, a business... because we guarantee each other a minimum of respect and dignity. This is the "us", discernible from an alliance in time and space: a bringing together of persons who encourage each other to recognize a value of belonging, subject to some conditions to which they must submit themselves. This "us" is circumscribed and defined. There are those who are of it and those who are not: other families, other nations, other religions... They don't recognize me as one of their own, and I do the same. It is not to our advantage to recognize each other. From the "stranger", the "infidel", the "heretic", the socially "down and out" I expect no support; on the contrary, between us hostility is latent or explicit.

This kind of "us" includes those who have accepted a pledge of allegiance that is almost always implicit. It excludes the others, those whose humanity we doubt because they do not share our values (in the form which suits us, in any case). The "others" are excluded out of hand. Warning! Those who call "our" common values into question are already on a dangerous slope: they can find themselves outside the "family", the "Church", the "nation".

The internal cohesion of an exclusive group and the relations between exclusive groups are modulated by three levels of values. The first level, "ontological" value, is the association of being and value normally shared among the members: this person is worth the trouble, that one, a little less so because he or she doesn't adhere as strongly to our (moral) "values"... Ontological value, as we have said, is attached to people and not to their behaviors. The distinguishing quality of a closed group is its linking of ontological value with moral value. The second level, just this "moral" value, is the sharing of a world view that justifies the hierarchy of moral values according to the importance awarded such and such a behavior, attitude or thought. For example, in a certain group, for a certain society, a certain idea of power and strength justifies and promotes aggressiveness and self-acclamation. Here the value is attached to ways of thinking, attitudes and behaviors. The third level, "exchange" value, is a value attributed to a good or a service according to its power to be exchanged for another good or service. Money can serve as an intermediary, but not necessarily. One of the properties of this level is that the values on it are necessarily finite, measurable and substitutable.

Associating the first two levels of value leads to the following law: the more I espouse the group's "moral" values, the more I am worth in this group's eyes. A high "moral" value will lead to a high "ontological" value. Everything takes place as if a person who adheres to the group's moral values possessed a greater "quantity of being". The more a person strays from the group's moral values, the

more she risks becoming an object of shame, and being treated as if she were worth nothing.

It is rather easy for one exclusive us to "exchange" values with other exclusive groups (for example, between nations), but the exchange will be made with the aim of gaining something at the other's expense, in other words, when all is said and done, in taking up his time. This is characteristic of unequal exchanges: I exchange a good or a service that has cost me little time for a good or a service that has cost you plenty of time. At least, I try to do this, and this very behavior is what the "market morality" expects. In a market society, exchange values are dissociated as much as possible from moral values, but it's simply to place the former under the aegis of a big exchange group, the "market", in which it is understood that morality consists of paying the smallest price for the greatest quality possible. In market actions, this morality eliminates for the time of the transaction all the other moralities.

The membership groups (family, religion, nation, race, sex...) define moral values which are easily recognizable and prepared to create a hierarchy, a selection and exclusion, according to the degree of agreement or disagreement with these values. They associate, then, "moral" value with "ontological" value and, in a strictly market society, money and the possession of capital become the signs of ontological value. Since exchange values reward market morality (the power to negotiate on a winner-loser basis), and since market morality acts in a market society like a morality above the others (a meta-morality), it is only normal that the signs of wealth measure ontological value. How much are you worth?

The normal values we are speaking of here are not to be confused with the preached or declared values. The values spoken about are generally contrary to the moral values practiced by the group. The values evoked in speeches are strategic; they quite often reverse the "real" morality of the group, which is generally very "immoral". For example, it was part of the real morality of a seventeenth-century Catholic (or Protestant) merchant to get rich at the expense of the Amerindians. The merchant who did not share this morality risked exclusion. But to attain this goal (get rich at the "savages' " expense), it was necessary to make oneself and others believe that one's action was guided by unselfishness and charity. This was all the easier since in reality very little ontological value was granted the Amerindians. The French or English who disagreed with this reversed morality, those who arrived in New France or New England with good intentions, paid dearly for their consistency with the preached and declared Christian values³.

To get past these narrow "usses" in order to arrive at a universally inclusive "all of us" is a vertiginous leap rarely achieved. It demands that we discover our own

³ On this subject, read Denys Delâge, *Le pays renversé* (The overthrown country), Montréal, Boréal, "Boréal compact, 1991.

ontological value outside of the groups we belong to, sufficiently in any case to raise our consciousness and see beyond and above their moral and economic values. We must succeed in grasping the ontological value of beings independently of the moral values created by membership in such and such a group, and be able to say: "All of us humans are, without exception, brothers and sisters. We have an intrinsic value that does not come from the value we mutually award each other, and this value of being does not result simply from an alliance of common interests." In a leap of consciousness, and thus an act of the self, we freely recognize all human beings as our own kind without demanding anything in return. It is not a pact or an alliance with an eye to any group's interest; it is a jump of consciousness which, necessarily, will sooner or later include all human beings and even the earth as source and condition of living beings.

CHAPTER 4 : Desire for truth

We are going to stop for a moment on the "content" of the nucleus of the "self", on the content of consciousness called value, and which presents itself in the violent form of desire. Later, we will see what constitutes an obstacle to consciousness (the superego, for example).

In the movie *Atonement*, directed by Joe Wright, a girl, when interrogated about a friend accused of sexual assault, lies out of jealousy (she had hoped to have the friend as a lover). She confirms what she did not see: "He raped my cousin." For the young man, the consequences are terrible: loss of reputation, mortgaged future, prison, scorn. The girl becomes a woman, then an old woman. From her old age, she looks back at her life. The horrible lie is there, at the beginning of her life. The sin is too enormous for forgiveness. The slander remains an indelible spot in a life totally devoted to others in some respects.

In watching this film, I envied this woman: her lie was so overwhelming, so obvious, so terrible, it was so precise, so tragic, so limited in time and space that it illuminated her life completely; it gave her life a truth that no other life could boast of approaching. Like a spot on a white wall, the lie revealed the truth of her life.

We understand the importance of "evil", then, when it is thoroughly localized. To be able to say: my crime is there, at this precise spot in my life, to be able to name the act, the moment, the place cleanses the rest of her life. To localize the evil has always been the principal function of the doctor, the shaman, the priest or the psychoanalyst. Evil spirits may be concentrated in this ulcer, a virus may be responsible for this epidemic, an original sin may explain our misfortunes, the trauma may have upset this man's entire life... This kind of diagnosis identifies the cause of "evil", circumscribes it, names it. It is now a target to be aimed at. On the moral plane, to say that it is at this precise place in my life that I suffered my principal narcissistic wound, to confess, like Saint Augustine, a sinful period

running from such and such a date to such and such a date, to be able to say: There, at that place, I made a mistake, is a privilege not given to everyone.

In general, there is not one lie that reveals to a life the full measure of its truth. Not to have committed a serious act against truth leaves that life in a fog. The non-sinners, the non-criminals, the innocents of social life suffer from this apathy that devitalizes the whole of existence and produces a doubt which conceals all the truth of its being. This is why it is the "sinners" who are saved; the others feel obligated to be happy.

Guilt spread out over peccadilloes is more dangerous than a guilt that is concentrated and purged. This is doubtless why an evil as grave as the pollution of the planet produces no fruit: it is spread out over all of life, and even over all the actions of all generations and all of everyone's behaviors. It is not a wrong that someone can atone for. The remarkable thing is that the wrong grants an almost transcendent value to a person. "It's your fault" sanctions a freedom. Suddenly, one self is responsible, the others disappear in the pack of innocents. The more numerous the innocents are, the more the one responsible is invested with a great value. By being accused, he receives this enormous benefit: "Except for you, everything is going fine. If you hadn't committed this wrong, the world would be better." Here is how by becoming guilty you launder the world, and even your parents, and even your children. We like guilt to be thoroughly concentrated in one discernable event, but we desperately seek to give it away as soon as it strikes us.

To perceive the lie, yet to want to hold it back is at the same time to discover that truth is one of the sensitive spots of consciousness. That is why the lie is a marvelous sin. It is able to reveal that sensitivity to the truth. If it is true, as clear and distinct as a drop of blood on a white cloth, it has preserved the truth. Beneath my lie the truth remains. That man has not raped my friend, he is not a rapist, he has remained intact beneath my lie.

And yet the question arises: is truth what exists beneath the lie? Is there something true that precedes the lie, survives it and follows it? What is the fact beneath the words, lying or true? That man didn't rape the girl, granted, but is he true? To what point is he that? Is he that as much as the tree I see outside?

When we go out looking for it, we realize that truth is not as definite an object as we think it is. The boundary grows blurred as soon as we advance. In reality, that boundary is a meeting. Two beings advance toward each other, and the other is never an object, he or she is always a subject, though she or he appears in the form of an object.

Here we must grasp an unsettling characteristic: consciousness cannot prove itself totally in the other. It grasps itself by a sensitive end (the "self"), but the other end remains unfamiliar and mysterious. For at least a million years, humans felt that the mountains, the rivers, the lakes, the vegetables and the animals were their peers, equal in consciousness, then the circle was limited to vegetables and animals,

next uniquely to animals, then only to themselves. Consciousness immediately becomes asymmetrical: in self it seeks the truth, in the other it huddles up in the form of an object.

Truth works in the consciousness that advances. It is only in my advancing consciousness that I see it working. In the beginning, the "truth" may be what a clear consciousness sees. The mountain is true once my consciousness is clear. Within consciousness, there may always be an awareness of the relative degree of clarity, as if consciousness could always sense the extent of its own falsehood. *It may always be true in its ability to sense the degree to which it is false.*

We must admit it, for if there were lie upon lie about the lie and so on ad infinitum, there would be nothing other than the lie, the truth would not exist and, by this very fact, the lie would not either. But that's just it, experience shows us that we can progress in elucidating what is false without however arriving at the true. All I have a hold on is the truth of my desire for truth. All I can be aware of is my degree of clarity: as for the truth of what I encounter, it escapes me, it belongs to the being I encounter.

If her view had been clear, the girl would have no doubt seen that she loved that man, that she was very strongly attracted to him, but that he was not attracted to her, that he thought of her as a little girl, that this was the reason she was angry with him, and that this was why she believed he had had sex with her cousin just as she would have wanted him to have sex with her. This clarity of consciousness would have led her into her soul's abyss and, indirectly, into that man's soul's abyss. She would have begun her journey into the human mystery. She would not have found an underlying truth in any particular fact, she would, rather, have begun to live in truth and feel that she was in search of a real man.

The question is surprising: why does consciousness seek truth? Why does it want it more than life? How can it finally prefer a cruel truth to a gentle reassuring lie? No sooner is an illusion seen than it falls, and we go little by little into the raw flesh of being (ours and the other's). It is true that the heart hesitates, that, to avoid the shock, it tells itself beautiful stories, but at the bottom of consciousness this vital desire for lucidity never dies.

It is as if it were worth much more to see oneself as true at the price of taking note of one's "immorality" than to know that one was "morally" beautiful, but totally false. As if ontological value had priority over moral value. This search for truth belongs to consciousness alone. Everything else yearns to remain in the house of its most reassuring illusions. *The desire for truth forms the nucleus of the "self".*

To seek to be true is, then, to live under tension. If consciousness works to strip thought of its lies, fear works in the opposite direction. We lie out of fear, above all fear of ourselves. The more I am afraid, the less I am able to confront the

darkness, the confusion, the torsions and the distorsions in me that form a fog in my vision.

CHAPTER 5 : Security and Truth

Fear lies in wait: do you truly want to know the truth? From the standpoint of truth, death can be seen in two ways. If death is an absolute end, perhaps the fear of it consists of never knowing the truth. My life will forever be blurred by lies. Yes, I have constructed a résumé which makes me a man acceptable in my own eyes, but I know very well that I could just as well construct one that was dark and morally painful to see. The story I like and the story I repress will always be there, able to be untangled, able to be sorted out. But if death is just a widening of consciousness, perhaps the fear of death is the fear of learning the truth. My life, there in front of me, pure and raw, can I really look at it? We are always wavering between the fear of never knowing and the fear of knowing.

Nevertheless, in spite of fear, in spite of the spell of illusions and the apparent security of systems of illusions, consciousness finally releases its acids, beliefs disintegrate, a plank sometimes gives way and lets us glimpse the truth. They will tell me: no! They can knowingly choose the lie: the need for security prevails over the desire for truth.

Yes, the need for security almost always does prevail. This is true for all that is not present directly beneath the point of consciousness. But that's just it, consciousness is working, and this is why stubborn unconsciousness can never be content with a single layer of lies. The subject must always attack, add to his defenses, seek at all costs to convince the others. The results of this are wars or consequences.

Lies never bring peace. Choosing security rather than truth appears to lead straight to inner conflicts, distorsions, perversions, and this betrayal of self poisons relations among human beings, and with nature. Afterwards, we don't want to see the consequences of these lies.

In short, if we look at it twice, unconsciousness works for consciousness by the accumulation and concentration of psychological distorsions and material consequences in front of the fleeing subject, the strategy of "hit a wall, and maybe you'll wake up". Unconsciousness is deep consciousness. What is called clear and limpid consciousness, explicit consciousness, is only the surface. In the darkness, consciousness is working as if at a forge, bending the metal, ensuring that body and psyche reflect reality. This is why we can live in the lie, but never live quietly in it.

Lies increase in thickness to save the lie that wants to come out from under the carpet. This adding on of lies is inevitable because underneath the explicit and

reflected consciousness the implicit and reflective consciousness is at work. "Bad faith" twists what is inside us by adding lie to lie, and unconsciousness works in the psyche, in the body, and in reality by accumulating distortion on distortion and consequence on consequence. In short, the lie can never go in peace in life; consciousness cannot be forced to suspend its characteristic act (its characteristic act is its looking at its own limpidity) nor the "unconscious" forced to end up with purely positive consequences. Bad faith inevitably drives us to defensive actions, to attacks on the other aimed at parrying attacks on oneself. And everything goes from bad to worse. We can then, it is true, say no to the truth in the name of security, but in reality, it is truth that is the best way of security. It is what brings inner peace sufficient to confront the consequences. Seeing the consequences better, life makes the best of reality.

The survival instinct is, perhaps, not disconnected from the desire for truth. To be able to face the facts is to be able to adapt. And as for the facts, we see them better to the degree that we are capable of acknowledging the truth. Yes, my factory pollutes because it is hard for me to admit that I am the prisoner of a market system obsessed by a way of seeing profit that is not at all profitable. While I am not admitting the obvious, the consequences accumulate. To let the consequences accumulate is to not adapt. And in real life this equals marching toward your elimination.

All we need do for the moment is observe that the hypothesis that the self has the capacity for truth does hold up since we have survived. When consciousness sees, not only does it see, but it sees itself seeing, sufficiently in any case to feel the part-lie that might come from a lack of limpidity on its part. It possesses, then, a kind of illusion-detector that comes from its own transparency in regard to itself. Armed with its desire for truth, it can clean itself, which makes it capable of adapting.

Truth is a value imperative for consciousness just as it is for life and survival. It is not uniquely a moral value, it is above all the value of values for ontology. If I am not true, all the values awarded me or which I award myself, and even all the values I award others no longer have any value.

Yes, we all live in the lie, such is the human being. But if the part that lies gains the upper hand, I am literally floating in emptiness. At the bottom of my self, I feel nothing, perhaps I even feel that I am my own traitor.

Anyone who has experienced a confession with no leniency, no complaining and no holding back has experienced something extraordinary: at the end of it, the person has admitted that they are not worth much and yet they have felt in their confession a nobility of truth that gives them a very great value. To feel true is without a doubt the value of values. Confession gives us back our ontological value.

CHAPTER 6 : Truth and hope

If I turn toward nature, which appears at the periphery of my active consciousness, I see... so many things. An entire life would not be sufficient to skim over the world of flowers or insects, mammals or mountains, stars or galaxies. Nothing is ordinary, either in the firmament or on dry land.

Human feet widened and flattened from wandering over the enormous tectonic plates that slide and bump against each other like rafts around a sphere of rock in fusion. We reel, drunk with astonishment, so deeply moved that if we plunged our heads into our own theater, into the house of our beliefs, our hearts might explode perhaps. It is possible that the lie is just a means of protecting ourselves from the esthetic shock of reality! Through our beliefs, we wish to reassure ourselves, but above all we fabricate the ordinary, starting with the marvelous. We are fabricators of the ordinary. Plunged into the mill of our beliefs, we succeed in opposing our mental platitudes to the real.

Let us take one way among others of fabricating the ordinary with the extraordinary. I am beginning to believe that human beings can make do with eating light ("prana", the food of the gods). Some might succeed in doing without food completely. This is extraordinary! Consequently, eating deer meat, transforming the body of the deer into one's own body is ordinary. However, the actual digestion of meat is far more complex than that of light. Each time we have approached "ordinary" reality rather than imagined exceptions, we have found something unbelievably more extraordinary than our dreams and illusions. Is it really more miraculous to transform water into wine than to transform grapes into wine? That the process is natural seems to me to add to the miracle and not subtract from it.

In fact, the encounter with reality is a great shock, not because of the "not enough" but because of the "too much". This no doubt is the reason why we make things ordinary. We succeed in believing that if a set of explanations can reduce the complexity of the facts into the simplicity of a few causes and a few laws, this would strip reality of its exorbitant and insupportable character.

But it's nothing like that. The encounter is a shock every time precisely because, every time, reality surpasses all limits. It's even the most certain and the most documented thing in the world: what is there exceeds all imagination. We can never succeed in saying: it's only that. The "only" is always an illusory reduction, a way of cramming into a box something which won't fit into any container. To say that it's only a tree, that it's only a woman, that it's only chance, is always an illusion made laughable by each raw encounter.

Yes, it is possible that everything is due to chance, but then, what chance! What a mystery, this chance that does everything! Who can define it? Who can diminish its mystery? What mathematical formula can make this chance ordinary? If the formula were perfectly simple, it would be even more admirable! A "scientist"

reminded us recently that there may be billions and billions of universes and ours by chance was the only one suitable for the creation of life (which supposes constant adjustments of incredible precision). But how would this be less fantastic than to all at once have a viable universe?

No sooner does the human eye see a bird leave a branch to hunt flies over the sea, than it knows that it will never succeed in hanging over the landscape there in front of it and that no concept will ever be able to subtract anything whatsoever from the fact that the bird is there, in full flight.

We do not fabricate just the ordinary. Sometimes we fabricate the dramatic and the terrible. Not content to confront death (we know that it will arrive, but we don't know what it is), we fabricate ideas of death, we make fears for ourselves that we struggle with later. Alas, this has very real social and ecological consequences which worsen our life on earth. Fear creates its object.

Human beings find themselves fractured into a fan of banalities and dramas. They slice the fan and take a piece out of it. A young man sees only his fiancée, a mother, her baby, an anorexic, food, a fanatic, enemies, a scientist, phenomena, a CEO a market... We inherit fragments of the world. Under the starry heavens, all our houses are small.

But let us return to value and the truth of value. What is value? Objectively, value is the future of being. To discover that this little pebble here is worth as much as that star there is to discover two things: they are and they should be. To discover that this slaughter, this massacre, this genocide are abominations is to discover two things: this has been and this should not have been. There is no future for such a crime. What is worth something has a future, what is worth nothing has no future. It can even happen that a crime is so scandalous that its future becomes incompatible with consciousness. It is one or the other. Confronted with such a crime, some suppress their consciousness and keep silent, others wake up and cry out in the street.

Such is hope: consciousness knows its future (not in its form, but in its value). This is its objectivity. What it feels as "good", it feels as enduring, what it feels as "bad", it fights against. This is obviously another kind of objectivity than that of phenomena (which are always in the past); nonetheless, the future too is objective as demonstrated by our own death awaiting us. We don't know what death is, but we know that it will arrive. When a given future is certain, its contents are uncertain. I know that my friend will give birth, but I have no idea of what the child will look like, nor even if it will live. Conversely, when the contents are perfectly defined, their future immediately becomes uncertain. The clearer the idea of God is, the less God's existence is probable. The more precise I make my prophecy, the more I reduce its probability.

There is a fundamental law here: when we know the future, we don't know its form, it is a vision of consciousness and not of the imagination. Consciousness aspires to more freedom, participation and justice, and this inevitably does occur,

but no one knows what form this will take in the future. In short, the values of consciousness are open: clarity of essence, wavering of form. Democracy will prevail without a doubt, but no one can say what form it will take.

Why does consciousness aspire only to open values? Because it is in essence adaptable and participative. Now, a closed value, that is to say a value defined in advance, is not adaptable, and so it ends up by creating, always and continually, consequences it refuses to see, which accumulate, which form a wall... A wall we break our teeth against.

A value has truth only if it is open. Otherwise it is a terrible lie. To define beauty in advance and then impose it always sounds a false note. The values of consciousness are on the contrary like seed, they develop according to their essence, but they will take a form adapted to the circumstances. Consciousness is knowledge of the "right to the future", but it is not knowledge of the future's form. I know that the world is called to justice, but I don't know the form justice will take, for justice is something we have to make together in an increasing adaptation to nature.

The cosmos seems to follow two trajectories. Along a route, it goes from unconscious being to conscious being. If being did not precede consciousness, consciousness would have no hold, would have no object and would collapse. In that direction there is a whole road of causes and effects, of facts, of stories which seem to be constructed in unconsciousness and gradually acquire consciousness. A coming out of the shadows. This historical process can be applied to the cosmos, to our birth or to every genesis. In another direction, the cosmos goes toward what is hoped for: harmony, beauty, justice. It passes from consciousness to being. All works of art are at first vague dreams around indefinite values. These values are gradually defined in consciousness and then clear a path toward reality. Consciousness will not let go, its right claw will antagonize its left claw until it makes itself into clarity and the world into value.

CHAPTER 7 : Birth and conjugation

In the mother's womb, responses to needs come from inside immediately and are diffused throughout the body in the proper proportions. Oxygen, water and food enter through a large tube as if through an intravenous. The need is filled before there is time to feel it. It is impossible, then, to demarcate a boundary, a separation, between a lack and a response. As we reigns, inclusive, fusional, impalpable. No thirst, no hunger, no asphyxiation and no cold; the energies arrive preventively. No waiting, no questions, no hiatus, no time, the outside circulates in the inside like ground water pumped by the veins of a tree. The perfect flow of fluids in the pipes of life.

And then a great tearing. The whole body is pressed in a bottleneck. Nerves are crushed by the pressure. A periphery of pain is configured, differentiated and gives a feeling of form. The head perceives its own periphery in the funnel of the vagina. And then needs are separated from responses. Mouth goes off to one side, nipple to the other. Skin is separated from warmth. Air must be pumped, and it burns the lungs. A plug of mucus blocks the entrance...

The screaming. The ultimate attempt to link need and response. But it takes time. The response doesn't come immediately, it doesn't come perfectly, nor in the right measure and the right proportions. The appeasement is a long time coming, and it is too much or not enough, never the perfect dose. It is in this state of in-between that consciousness comes out of its sleep. But it is not just a distance of thirst, hunger and desire, it is also the feeling of a distance between two poles, the pole that must find a response, on pain of death, and the pole that must bring the response, on pain of screaming.

Food, air, warmth, everything is now outside. Lack alone is inside. The contents are the outside, the container, the inside. The connection is the lack which rouses itself to call for a response. In this connection rests a knowledge (I was everything, I have been divided) and a feeling (I am an all perpetually in the process of being reconstituted). Something enveloped the story of this explosion named birth as well as the prospect of that union named satisfaction.

"You're what I lack", howls the baby to its mother from its convulsing stomach. The you is constructed starting from a polarization of the fusional we into two components: fullness and lack. The you is the positive pole of an electrifying thirst. The milk is my body outside of my body. It must come into my body to become my body. The you is thus my future I. It is the source, I am the reservoir. It is the energy, I am the sucking.

In the baby's howling is the very foundation of consciousness: the outside must change containers, be transferred to the inside--- this is life's emergency. This tense distance between two poles is life. Life: a current of gaseous and liquid fluids between a positive terminal (the you) and a negative terminal (the I). The outside is the you, and it's from there that my life comes, it's there that my life is before entering the container I.

The problem is that the you isn't very prompt in obeying the will. The thumb, for its part, obeys more quickly. It's true that it's not so easy to align the thumb with the mouth and that sometimes I get it in the eye or in the nose... But at least I don't need to cry. A certain number of components are the first to respond; fingers, toes, wrists, heels, but it's an empty response. What obeys so easily doesn't fill the stomach. The you is at the other end of the howling, and it comes in *its* time and not on time. There's the problem: "its" time. There's the solution: howl louder. The you is the time spent waiting, the texture of time which escapes the will. The thumb obeys me; it is my time, the milk obeys the screams, but in its time; it's the you. Only screaming at the top of my lungs and stomach brings the

you to me, while the thumb (the I) obeys without a scream, but also without substance.

The you is the "object" claw of the crab of being, which consists of object and subject. This object claw is full of food, and it meets the mouth in need of it. The you is different from the other claw, which arrives before the screaming, but is empty. Something responds directly, something responds indirectly. The thing that responds directly is connected to me by silence, an obedient silence, my embryonic "will". But what is within the circle of my will and has no need to scream is a response good only for waiting, a form of patience. My thumb, my patience. The you arrives after long hard screaming, but it carries a cargo, it is my substance.

The you, then, is separated from the fusional we by a positive and a negative. Its positive: its response is full. Its negative: I don't directly control it. The you is my body's future essence, but it is outside my will. My will is the essence of my lack; I live through the you.

The I will gradually be constructed by opposition to the you. It is a negative: it cannot live from itself. But it is also a positive: it wriggles as it waits. The I can also scream, later on speak words, later still equip itself to lay claim to its life. The words will be structured screams, I will need more information, but less energy. Words are like appendages to lacks, bringing from outside all that is my life.

Strangely however, certain responses don't need screaming in order to come to me. Air comes in without my protesting. There is something that is not formed in the you because "it" responds immediately to the demand. Sometimes a problem comes, an inflammation of the throat which demands by a scream that someone soothe the pipe through which the air wants to enter. But in the course of time the air is a rhythm that makes us forget our greatest dependence: one minute without air is suffocation.

Every minute, the air makes me live. This is not like the you, it is not even like the embryonic I (the thumb), it is always there, always obedient, always full and responsive. It is like Mommy was before the birth, it is like the fusional we of the beginning, it is a trace of the original we, the yoga of everything. It doesn't offer enough resistance, hesitation, or lack of rhythm to establish itself as a positive-negative (a response outside of will, in other words, which comes by screaming and later by words). It is a positive-negative which rejoins consciousness in its origin and reminds it, breath after breath, that separation is only a fragile and superficial act of disjunction-union, of mediation, of "temporalization" in the universal circulation of energies and information. Only an illness can awaken this it, make it leave the fusional we, make it enter the field of an explicit consciousness of lack.

It should be noted that consciousness cannot be separated into unconsciousness and consciousness; it is implicit or explicit, but never totally nothingness or totally being. By essence, it is the union of the separated. For all separation supposedly

absolute would be equivalent to two realities incapable of relation and thus non-existent the one for the other. The inevitable connection is consciousness, which is always implicit (its first unity) and explicit (the enveloping of two or several poles).

To say that everything begins by a fusional we is to say that a fusional we remains the substrate of all that is connected in the actions of life. This we retains its hallmark in the it of air, the archetype of a presence so constant that it is forgotten and so reminds us of the fusional we, the universal Mommy.

The I is defined more by the you than by the it. Air is a need much more immediate in its urgency than milk. Fortunately, here the response does not depend on screaming. Fortunately it is always there. But just as the fetus cannot form the you as long as it is inside the mother, the human child cannot easily transform the it into you (this transformation is the essence of religion).

The will is the circle of all that needs no cry or word in order to obey. The body, all that the will can put into motion. The will defines the body, it circumscribes the I, its mouth, its lacks, its emptiness, its needs. But consciousness is always simultaneously in the fusional we, in the responding you, in the lack and in the it so present it is forgotten. Consciousness is like the crab with its differentiated claws: you, I, it. In short, it is there from the fusional we to the conjugation you, I, it. Without it the conjugation would not exist. Either the fusion would be total, or the separation would be absolute. In both cases consciousness would not function, and neither would being⁴.

Consciousness is the flow of contents into containers, and if you separate the contents from the container, there is no more current, no more electricity. The life of consciousness is no more in the you (positive pole) than in the I (negative pole); like electricity, it is relation. In reality, it embraces the whole conjugation:

--- we: the fusional we;

--- you: response that must be called for;

--- I: the lack;

--- it: the envelope, fusional for all practical purposes, presence of immediate responses (like the air);

---you (plural): the discernment of different yous;

--- we: the relational we, the relation of you and I, or of you (plural) and I.

--- they: the whole set of differentiated yous.

⁴ The functioning of being is existence, but existence, and that's precisely it, needs differentiation in unity,

--- one: the indefinite we.

CHAPTER 8 : Desire for love

It is consciousness that conjugates, so consciousness does not reside in a conjugated subject. For it, the I is only one component of the great verb "to live". Consciousness cannot, then, be identified with the I. The consciousness of self ensues from the consciousness of the you and the I in their circular relation within a semi-fusional it. The implicit envelops the explicit, never separating from it absolutely. If will defines the circle of the I, consciousness embraces all the circles. For it, the you is not a stranger; it is itself as a response to a lack. The you is no more a stranger to it than is the I.

You will say to me, I know myself more than I know the other. Is this so certain? Does the answer to the question, "who am I?" come more easily than that to the question, "who are you?". Is it easier to sound one's own soul than that of the other?

Perhaps I have learned more about myself from the other than by myself. No doubt my will does define the I rather well, no doubt the contents of "my" memory is more accessible than the contents of another's memory, but in its depths the I is just as much an abyss as the you. In fact, all that I know about myself is that I am a set of relations and that my I is examined and defined within this set of relations. The solitary I, first person singular, is only a cultural illusion. Many peoples conjugate starting with the we.

To put oneself in one's consciousness is to return to this you which gives me life by milk, warmth, and caresses. And then time passes. I am separated from Mommy and Daddy's bed. I live in my bed, alone with a stuffed animal that responds immediately while I am waiting. And then they tear me away and I go to school. I live alone. Friends revolve around me. They take toys away from me and we learn to cooperate. And then a fire flares up. Life steps back. An enormous lack no friend can fill is hollowed out in me.

Then, when once again, and finally, there stands up before me a you who looks like my vital "substance", the milk of my love of life, then I can say "I love you". The person before me, her face and her body, is even more me than I am; I draw my contents from her. The fact that our genitals are shaped like electric outlets facilitates the rediscovery of our common foundation, of our eternal we. First embrace, first love.

Obviously this eagerness for each other with no memory other than milk and mouth will throw us into the drama of the impossible fusion, of the rebirth of the one by the other in difference. We will be thrown back again always other, always

surprising, breaking ourselves against each other to perpetuate ourselves in the adversity of an incorrigible union.

Our sole salvation: get out of the you-I drama, surround ourselves with a healing we, plunge into participation in an adding-up that continually revives human beings. Consciousness can only love. As with a crab, the two claws cannot live indifferent to each other, they try to touch each other, pinch each other, reprimand each other but the union is never in the action of the claws, but in the body of the being, in its bulb able to conjugate all the verbs.

If love is the foundation of the nucleus of the self, in other words if you are me as much as I belong to you, it is because consciousness is the union of the separated. Its action is love: distinction, relation, tension, inability to totally separate or unify absolutely.

CHAPTER 9 : Distance and ignorance

My father died after a long period of senile dementia. He lived only in the present. He swooned with love for everything that came into his field of vision; everything that left it immediately lost its existence. Only two events took place: arrival and departure. Everything arrived, everything went away again. It might have been called a naked consciousness. He appeared to experience only two emotions, and they brought tears to his eyes: wonder and the sorrow of departure. The two emotions alternated, then were superimposed upon each other, and at last were unified. Even at night, he kept his eyes open and watched the flickering of beings...

Birth and death are not symmetrical: one is born out of darkness, one dies in the light. Light comes out of darkness and not the reverse; explicit consciousness comes out of implicit consciousness, not the opposite, envelopment precedes development, the uterus precedes the fetus. Viewed from a very great distance, what is birth? One might say it was a blind little animal buried between its mother's breasts, it moves off in the stretching of odors, forms eyes and gazes at the primeval face. Light automatically covers the distance.

Why must we come out of an origin, make some space and cover it with light, in order to at last discern a form, then disappear once more in the formless, by sleep, by sickness, or by death? These are the waves of consciousness, made up of lucid peaks and troughs of blindness.

Why does space so easily move colors and forms, while it allows things to slowly drag their weight? It is said that light is fast, but one could just as well say that things are slow. If it were things that came to me, at any given moment they would all be on me, it would be as if the entire universe were collapsing on me. In

perspective, the whole universe piling up on my body. Good for the ego, but not very good for my health! Crushed under billions of tons of reality... Luckily, it isn't this way. On the whole, things and stars remain in their places (or move much slower than light). Yet their light, in reality, does fall down on me. That things stay put, that all light brings me is color and form, such are the first conditions of consciousness.

To be born, to enter explicit consciousness, is to move away from a state of molecular union and enter the light, observe forms and colors come out of things and come to us. It is also to lose the atomic and chemical knowledges, to leave the answers and enter the questions. My digestive system knows in every detail the biochemical process of digestion, it is so full of knowledges, so bound up with these knowledges that it doesn't know that it knows. My stomach is able to digest, but unable to ask itself questions. My thought, for its part, will have to study the digestive organs for years and years, question by question, in order to discover a small percentage of what my stomach knows. All this knowledge must come out of things in the form of light and come to thought in the form of questions. My thought is so removed from the knowledges that make up reality that it doesn't even know to what point it ignores them.

Consciousness acquired its light at the price of an ignorance it can never catch up with.

And I am that explicit consciousness, for if you plunge me into the immediacy of corporeal knowledges again, I seem to disappear (in reality I still encompass the link between the dark state of immediate knowledge and the spatial clarity of a distance measured by my ignorance). Admittedly, I depend entirely on the atomic and chemical knowledges which maintain my body, but if I am something, it is the innocent eye which sees "know-it-all" reality.

I am ready to believe there are skillful substances at work right now; I would agree that I depend on them, but this is not what makes me what I am. I am the consciousness which slips between them and even slips through them. I come from the shadows of immediate, effective, flawless knowledge, from a dynamic totality literally measureless in width, in height, in depth, in duration, in complexity and in simplicity; I come from there, my guts are still plunged in it, yet I am a drinker of light. I see. And the more I see myself seeing, the more I feel myself be.

As distance from physical and chemical knowledges increases, a you and then an I are formed by a distance that is created starting from a fusional we in order to end at an it that is always remote. But this I is not formed solely by separation and distance; on the contrary, as it moves away from electrochemical bonds and knowledges, it approaches something else. What?

This strange gaze anchored in light will observe the forms and colors of the reality from which it is separated. To be sure, at the beginning, when I was a baby, I wanted to put everything in my mouth (above all, the you), the reflex of the

stomach that wants to digest the world, recast the bell of universal harmony (the fusal we), but a new and greater joy took this away: to observe at a distance, see the shining of Mommy's eyes, but also the distant stars. And, what a miracle! at the end of a long story, in my mind I discover ideas, rules of relationship, mathematics, a logic, laws which, if applied, would produce a world "just about" similar to the one I observe. Not completely, but "just about": there is something in thought that is capable of meeting the real, at least in its form and its color. I learn, through intelligence and through science, what the smallest atom knows immediately, for example: the constant and uniform acceleration of a body falling toward the center of a mass like the Earth.

The observer becomes "con-scious", "knowing with" and not "knowing just by a reaction". Obviously his or her science is still very far off the mark. The gap even seems to widen the farther she advances in her discoveries, nevertheless, she discovers principles which sometimes function with an incredible precision. In moving away from the immediate knowledge of atoms, molecules and living cells, consciousness has come close to "laws" which appear to have directed the emergence of things. Something in me knows how to discover some of the world's principles.

It is as if consciousness had moved away from the program's "content" to approach the program's "source"⁵. In moving forward through science, through "con-science", I approach the intelligence of the cosmos, I discover in my own mind ideas that seem to be at work in the physical universe surrounding me. Between me and the source of the cosmic program, there is a connection that makes the acquisition of knowledge possible. Science does not consist of doing the inventory of the information exchanged by the atoms, it is not about listing all the contents; it consists of grasping the principles, the laws, the rules, the mathematical relations, the simplicity starting from which complexity is unfolded.

There is no more breathtaking a feeling than that of a scientist who discovers a universal law: It is as if he found an idea that is developing in front of him right now, in the all surrounding him. He or she, the human being, a so insignificant part of so boundless a universe, grasps at least one principle spread throughout the cosmos (the law of general relativity, for example). The scientist and the one who savors her or his discoveries cannot escape the feeling that there is, between them and the universe (the it), a proximity not simply of knowledge, but of intelligence called "con-science". This connection, this shared creative nature, engenders a primordial feeling of trust similar to that of the child in regard to her or his mother.

I am my consciousness, much more than my I. If my consciousness grows, broadens and encompasses the entire universe, I am not the universe which encompasses me, but the encompassing, the feeling of encompassing, the

⁵ There are "laws" and principles in the cosmos, but this doesn't necessarily make the cosmos predictable.

encompassing intelligence, the whole act of encompassing. I possess nothing of what is encompassed. The contents escape me, they arrive, they depart. They undergo transformations which slip between my fingers. I am not the owner of any content, even the content I recklessly call I or me remains a stranger to me. But as for the source, it is me and perhaps my only true and reliable me.

Consciousness is a compound with a thousand windows. Toward the center, there is a tiny point, empty of all knowledge, but rich in all the potentials of creation; toward the periphery, it joins all reality not in its contents, but in its creative "ideas", its principles, its "laws", its mathematical structure... Each step toward conscious knowledge is a step toward a greater participation. The closer consciousness comes to nature's "laws", the more effectively it can "garden", that is to say improve its condition as it improves the innermost harmony of life itself. The appeal of consciousness is, then, essentially ecological: render the totality as harmonious as possible. It is its vision of the future, its complicity with being.

The risk is double. Consciousness will act before knowing⁶ and thus err regarding the action to undertake. It may also err regarding justice, equity, beauty, happiness, and even which finality to pursue. And it will pay the price. This risk is acceptable to the degree that consciousness adheres to experience. It becomes catastrophic when the narcissistic self retreats into its prejudices.

Consciousness never wonders if it should have protected nature against itself. Having come out of immediate knowledge, it doesn't seek to return to this immediate knowledge, it doesn't want to again become a harmonious assembly of atoms, molecules and cells; it separated itself to be united not to atoms, but to creative intelligence itself. It wants science, that is to say, not simply the knowledge of facts, but above all that of laws, of principles, of intelligibility. It does not want this science for itself, but in order to act, to participate, to put its grain of salt in the whole affair.

Consciousness removes itself from the contents of the cosmos in order to approach the creative drive that is in the self *and* in the all. In the self this creative principle can say: "I disagree." The musician can contradict the conductor. We may imagine this self as an infinitesimal part of the all, but nonetheless this dust can say no and go its merry way. Not only is this no possible, but it is inevitable since ignoring content is the first act of a consciousness aiming to participate in life's élan.

The beginning musician, like us, wants to add his touch; not only does he want to, but he knows that it is his very life. As every creator and every musician knows, participating in creation produces a pleasure we can't do without. And this pleasure forces us to love music, and the love of music forces us to love

⁶ To act before knowing is the essence of consciousness because being is not a set of givens, but a creative power, which means that consciousness always precedes the givens. In science, for example, the theory is necessarily always a little ahead of the knowledge of the facts.

musicians, and, as we all know, even a cricket is a good musician. It is from this that the ecological reflexes of consciousness come. There is an ecology of consciousness that is an art of living by responding to our truest desires, by favoring the surest of economies. Wisdom is not an asceticism, a discipline of deprivation; quite the contrary, it is the self desiring everything and already grasping it in principle.

To sum up: the I, the self, is found in the center of a very large space. This doesn't only mean that everything is connected to it by a transparent distance covered by light, it also means that the "self" point of the circle (always at the center) is invested with a knowledge *and* an ignorance. It is aware that it can know principles, laws, rules, regularities and movements in reality, but it also knows that this kind of knowledge comes from the loss of immediate knowledges (the constant exchanges between the elements of reality). It knows, however, that there is a part of itself (that it will call the body) that is plunged into the immediate knowledge of life (each of my body's elements directly exchanges information inside my body, but also with the totality outside). And all this circle of distance between the furthest stars and my body plunged in immediate knowledge is covered by light. All rays converge toward this central self, bringing me information (light: the greatest and most reliable transporter of information). My body knows perfectly how to capture this information: for example, in each of its atoms it recalculates its weight and mass in accordance with the variations of the distribution of masses in the entire universe. But for me, this light (gravitational light included) remains an enigma, I will have to learn everything beginning with the foundations of my inner life (logic, mathematics, methodology...).

In this work, I will, to use Hermann Broch's term, call "nucleus of self" this center of all the envelope of consciousness which, on the one hand, conjugates the relationship of consciousness to the world (we, fusion; you, resource; I, lack and desire; it, presence of the all; definite we; indefinite one...), and which, on the other hand, connects a knowledge of knowledge (I can know the foundations of creation through the knowledge of my own thought's foundations) to an ignorant knowledge (I no longer have access to the immediate knowledge experienced in my body and in the world)⁷. In this space, the nucleus of the self gives values, receives values, awards itself a value, and this is its lifeblood. Without this blood, it loses the love of life and the feeling of existing. Yes, it gives values, but starting from a fundamental desire for truth and from a feeling of participation and love (which makes all beings as dear to it as its own self).

⁷ See Hermann Broch, *Logique d'un monde en ruine* (Logic of a World in Ruins), Paris, L'Éclat, 2005, chap. 2, "Remarque sur la psychanalyse du point de vue d'une théorie de la valeur" (Observations on psychoanalysis from the perspective of a theory of value), pp. 45-82

CHAPTER 10 : The incorruptible nucleus of the self

Nothing is more dependent than a little child. She or he doesn't yet know anything of what we know. Consequently she or he is in the position of one who sees without prejudice. A pure gaze. This is why all the great traditions identify consciousness with the little child.

There is the child of poverty, the abandoned child, the child prostitute, the child soldier, the little lord Fauntleroy and all sorts of other children. There are many ways of spoiling childhood. But every time we wonder who we are spoiling. Who is the original child inside the broken child? Because if this incorruptible child does not exist, there are just well-constructed children and badly-constructed children. And because of this there are only well-manufactured educators and poorly-manufactured educators, who have themselves been well or badly constructed children. And no one can begin his or her life on a base that can be taken away at any time.

The beginning must be able to live in every point of time. At every moment, I can begin a new life. If not, time is not time, but a transversal determination, thus a form. Simply speaking, this form would have as its characteristic the inability to be seen, but simply touched from point to point as if by a sightless person. The sightless person would then reconstitute that form in her or his memory, but she or he would not know that it was there before she or he went over it. This way of seeing eliminates the essence of time, which consists of transporting a creative beginning to every moment of its always present existence.

Consciousness is the power of beginning at any point in a story. Childhood is probably the cornerstone of a better future because it protects the incorruptible particle out of which everything can begin anew.

The nucleus of the self is this incorruptible place where I can start again. All the great traditions have spoken about it under various names: spark of the soul, stronghold of the soul, mind, atman, self, etc.. In every case, it has to do with a consciousness which can reassess cultural values, and this reassessment is not done to oppose a particular interest, but in the name of a universal interest, that is to say in the name of a desired truth and a felt love⁸. Truth (the limpidity of consciousness seeing itself) and love (the perception of a universal encompassing) are the nucleus of the self's two obsessions.

⁸ By universal interest I mean not the general interest, but the interest of each living and concrete being in their complex relations among themselves and in regard to the totality on which they depend. It is the self-interest of the individual (selfishness) that is abstract, for then the person perceives his or her individuality as independent and capable of satisfaction without taking what surrounds it into account. Such an idea is obviously abstract and impracticable.

The young child's distinctive quality is due to the fact that the constructed part of her or his personality is still superficial and poorly attached, while the incorruptible part is sensitive, still capable of indignation. Between the ages of five and eight, the child is sufficiently educated to express her or himself, but not yet socialized enough to accept everything without complaint. Ethically they are at their optimum. When such a child unexpectedly comes upon a garage conversation, he causes a change in tone and a change of subject. He acts as a criterion.

Pierre Vadeboncoeur writes: "The Impressionists sometimes took their paintings out of the studio and sat them down out in the countryside to see if they 'held up'. This procedure might be good for our ideas. I tested them in a frame sometimes, I placed the frame beside Daniel (age 4), and they took a fall, a miserable fall. I tested Sartre, I tested Marx, I tested ambitions, eroticism, war most of all, politics: Only Daniel remained immutable. Truly all is false, and cruel, and inhuman if it cannot stand up to the gaze of a little child... We have scorned innocence first of all: the proof of it is that the universe turns with the horrific noise made at night by the false alert of the sirens the government had decided to test for the eventuality of an atomic attack; this universe turns like a machine of terror, of lies and screams, of foolishness and of crimes, broken-down sphere on which the luminous eyes of children have no influence. These eyes are a perfect measure, but a useless measure, for they don't bring in any money."⁹

When I was born, on the same day I returned from the hospital after a difficult birth, my older sister went out on the porch of the house, on Alma Street in what was then the heart of the poor people's Montreal, and shouted to the passers-by, "My brother is born, watch out, he is going to defend me." My mother told me that anecdote a thousand times, laughing every time. I didn't laugh.

Around the small backyard, my father had built a fence six-and-a-half feet tall, spiked with inverted nails with their points in the air. On the other side, the city was much more dangerous than an Amazonian jungle. I never knew when or how this conviction that the city was dangerous, which for me was as obvious as my mother's goodness, forced me back into my imagined world - I don't know it because I have no memory previous to it. Nevertheless, in the family circle of the kitchen and the backyard I knew that I was perfectly safe. There too, I didn't know where this other conviction came from. It was enough that I stayed in my imaginary jungle, with my lions, my zebras, my bears, my cat, my dog, and whatever the adventure might be, nothing serious could happen to me.

As a young father, I suddenly understood how this nucleus of security was formed. My mother would never have allowed anything whatsoever to happen to us, she would have thrown herself at an assailant to keep us from anything bad. I was founded on that love. I believe that this was why my nucleus of truth held out and bested the world's madness. I did not doubt my judgement on the world.

9. Pierre Vadeboncoeur, *Un amour libre* (A Free Love), Montreal, Bibliothèque québécoise, 2008, pp. 13 and 14.

What happened in the city was not normal because Mama loved me. The world's violence was an accident; love was an essence.

I was about ten or twelve when I realized that it was up to me to change the world. I was riding my sister's bicycle, following an Italian girl older than me, with a short skirt and long hair. I loved her and I didn't want her to notice it. I would have died for her, just as much as I would have for each of my three sisters. She climbed up to the third-story porch of the building where she lived. She saw me looking at her. She went to get two friends: girls. All three began to laugh at me, calling me a "little squirt". I understood that day that it was up to me alone to change the world, since, quite clearly, I was alone on my side. I experienced an infinite solitude.

As a young father, I was very careful to protect my two children. I didn't want the world to fall on their heads. But I understood a little later that a child can be the worst enemy of his or her childhood. A child possesses a criterion within him or herself that is not the superego (internalized values of family and society), but her or his nucleus of truth and love, an incorruptible nucleus, and the characteristic of this criterion is precisely this, that it can be betrayed. The child knows that he or she can renounce his or her own values in order to be accepted by others. This is the great temptation.

For many children, this happens when they enter school. In order to be accepted, they imitate others. And then one day, the end of the world! They see that they are acting the same as everyone else. They have, they too, hit someone smaller than themselves. And, worse than that: they gradually realize that it is impossible to live up to their criterion. Like all of us, the child does the evil he does not want, and does not do the good he wants. Compared with the innocence of her or his criterion, he or she is not innocent. In fact, it is the perfect innocence of his or her criterion that takes all innocence away from her or him. That is why the child's ethic is so astounding. After childhood, everything is rendered commonplace, is transformed into the ordinary by the learning of habits of thought.

What allows a child to keep his or her criterion of truth even as he or she, through imitation or out of simple necessity, acts in contradiction with her or his nucleus of the self? He or she can succeed in doing it, thanks to the magic of play. There is a way of playing without becoming everyone's plaything. Nothing is stranger than a child's play. The child pretends, he or she knows that he or she is pretending, but pretends not to know it. In reality, if she forgot she was pretending (if, for example, she truly thought she was a Mommy when she plays at being a Mommy) or if, on the contrary, she became perfectly aware that it was only pretending (if, for example, she said to herself that it's only a stupid game), in both cases the play would no longer be play. The child would lose lightness, that property which permits her to learn the world without being destroyed by it, and to manage moral action without destroying the ideal which guides it.

As adults, we play our characters, but we have lost the perception that it is play. The warrior plays war with just as much passion as the little boy, except that he has forgotten that it is about pretending. He is taken over by play, in fact he is caught in play as if in a trap. He is so immersed in play that his childhood no longer serves him as a criterion. He smiles at his childhood dreams, for they are for him no longer anything more than childhood dreams. Like the Pharisee in the Gospel (Nicodemus), he is no longer able to return to childhood in order to be born there. He has lost the source of play.

There are two levels of play. Pierre Vadeboncoeur calls this the "mystery of play, which is neighbor to the mystery of prayer, two worlds where the visible effect counts for nothing and where the mind's harmony alone shows the fulfillment of the human being¹⁰". The important thing about play is logic, the extreme logic of the nucleus of truth and of love. We play in order to practice the contradiction between, on the one hand, the good, and on the other, the evil that does good when it is embodied in action. The child knows that the good is justice. As a result, when, on his birthday, he finally receives the toy truck he wanted so much, he leaves it in the hands of his friend. He shares. But (after three seconds), the friend no longer wants to give it back to him. So, for the sake of justice, he hits him. The friend hits in his turn, he too for the sake of justice. The war for justice has begun. All wars obviously aim at justice.

We had been at war for three days, my friend and I. We hadn't played any more during this time. For play is a collaboration in precarious balance above the ordeal of reality. The war here was no longer play. My child's heart wept, for I remembered the pleasure we had had together. After three days came the inevitable logic of forgiveness. This logic is the result of an extraordinary depth: there is no pleasure except in collaboration. Let us find the means to collaborate and forgive all the inevitable errors which will arise along the way. Collaboration is one of the necessities of life.

Play acts like a sheet of paper on which we can practice life in society. When the social theorem (the necessary conditions for collaboration) does not lead to a happy conclusion, the reason is simple, somewhere we made a mistake. We begin again. It's not very serious: we have simply wasted a little time. Play permits us to measure the consequences without pushing them too far into reality. Error is the only method of learning we have at our disposal. And the only serious error is to lose the sense of play.

¹⁰ *Ibid.*, p. 18.

CHAPTER 11 : The dilator of the self

I have a seven-year-old granddaughter named Zora. One day, her mother showed her the video of her birth. "Puah!" she exclaimed. "It's your head," her mother said, and showed it to her. "Look at your hair. You had hair already. There's your pretty little face. Here's your little bum, nice and round." "Is that me?" the little one answered. "No, it can't be!" It's true that the mother had gotten the wrong video and that her little brother didn't have quite the right bum, especially when he spread his legs, the better to howl.

The next day, repeat of the session with the correct videoclips.

-- There, don't you see, it's a girl baby, it's you, the mother repeated.

-- It's not me, I'm not a baby.

-- Look now, you're sucking Mommy's breast. Here Daddy is changing your diapers.

-- Me? No! the little girl repeated before finally fleeing to the kitchen.

We kept on watching for quite a while. Daddy was feeding her, baby was spitting it out; wriggling and writhing, baby was crossing the living room with her mouth full of strained vegetables -- all this made us laugh until we cried. Very angry, little Zora dashed into the living room, yelling: "Me? No! Don't you laugh! It's not funny at all." And she abruptly turned the television off. What had happened? Why had she totally refused to recognize herself in her own thoroughly material image, formed at the end of a camera without the slightest faking?

Personally, I am almost incapable of identifying with my own recorded voice, and it is hard for me to endure seeing myself on a screen. As a child, I would really have liked to have been the invisible man. To see everything without ever being seen. To be present at the show without being caught up in it. But beyond the powers of the invisible man, what strikes me is that if we have an identity, it consists above all not only of the refusal to identify with a social image, but more profoundly with any image which someone can notice and collect. As much as we need to be brought to birth through and in the gaze of another, we refuse to be only an object enclosed in an eye. Can there be anything as pitiful as a man inside an eye? We risk becoming an image, a form that can be manipulated... We are made that way, we human beings, as soon as we have something in mind, it is so present to us in its abstract form that we can easily forget its concrete existence. "Darling, you don't need to go to South America with me, I'm taking you with me in my heart." This is obviously less expensive and more ecological, but not entirely reassuring. The problem comes from one detail: once I am in the memory of the darling in question, she sees me when and if she wants to, otherwise not at all. It's rather convenient for the "carrier", but not always for the "carried".

Moreover, it is because of this that, over a long period, we would rather keep others in our memory than to see them packed along with our suitcases. There are loves that can't stand the shock of existence. Even the idea I have of myself is stuck on "positive" if I'm not there to grumble about myself. This is Zora's "me-no", the grumbler who gives a hard time to all the forms that would close over him. Human identity struggles against the self-image.

Lacan has described very well how the self-image is appropriated in a mirror. When a baby becomes aware that her or his mirror image is really theirs, it is because this mirror-image imitates them perfectly and in real time. It is an image subject to the baby's power, if he or she moves, the image moves. It is not a video image, it is a mirror image. The video image subjects the baby to the image; the mirror image is subject to the baby. More seriously yet, on video, the character who moves follows a terrible destiny, he or she is completely imprisoned; whatever she or he may do, they follow a perfectly defined trajectory; the film can be speeded up, run backwards, the image stopped, the unfortunate person cannot escape; he or she cannot even imagine fleeing and even less will anything different. He or she is a self without a dilator of the self. Utterly determined.

This, I believe, was what Zora couldn't stand. In a memory as reliable as a video's, she is Zora no longer, but an imprisoned, predestined character. This is the way some Greeks believed in the fatality of human destinies. Human beings, they thought, were, as if in a video, caught inside the memory of the gods. The gods were supposed to have watched us on a reel, our lives unrolling before their eyes in their fatal trajectory. Happiness would have been limited to accepting the director's script... In a way, the culture of cinema is a cult of time, in fact a cult of an idea of time in which we are subject to time like an automobile on an assembly line.

The dilator of the self doesn't want this kind of script which would make it an object of the movie of time, it doesn't want to be dreamed by the gods or obey the laws of economy, sociology, psychology or business, it wants to play both with the constraints and against them. It doesn't want to be subject to a movie, but to produce one. In the social media, the "profile" thrown out to feed social gossip enters the universe of the game. All goes well so long as everyone knows it is a game. A pretense. When the sense of play is lost and one identifies with or lets oneself be identified with one's profile, the drama begins. The dilator of the self is caught in the trap.

Consciousness situates me in the world of the directors and not in the world of the movie's characters. A conscious human being's identity supposes an appropriation of mirror-images and a disappropriation of video images and Facebook profiles. In this sense, Zora can't stand being identified with a delimitable, determinable, manipulable self. Her dilator of the self is similar to the "without-self" of Taoist tradition and to the "self" of Buddhist tradition; its aim is to prevent all closing of the self upon itself. I am the one who is and not the one who was. You don't understand me, I don't understand myself, because there is no jar big enough to contain me.

How is it possible that we know from the beginning that we are not that, any defined that? We are not the pitiful character of the human tragedy. We see this character, we suffer in it, we are deeply moved by its misery, on the brink of tears sometimes, nonetheless, for the same sequences we burst out laughing to see it struggle against all odds. Spectator of our own cinema, there is no character more moving than ourselves. We know very well that it won't get out alive, moreover, if it did get out alive, the film would no longer be interesting. It is a child lost in a sea beyond measure. It is so much us! It is so much something else! Laughing subject, laughable object, we are both: the one who sees, the other who is seen.

We have the habit of calling consciousness the ability to split in two in order to smile at oneself. This is why the ability to laugh at oneself is considered a sign of an awakened consciousness.

If, when happy, we want, like Zora, to escape all definitions, how is it with unhappiness? There we want, on the contrary, a limiting of evil, and its exteriorization as immediately as possible. When I suffer physically or mentally, a credible diagnosis is a relief. "All these symptoms indicate a depression," my psychologist affirms. Behind this mechanism for localizing pain is a troublesome question: how is it that when there is unhappiness or anxiety the first reflex is to want to situate the pain, make it discernable? Why is it that in unhappiness, the narrator identifies so easily with a precise, unequivocal, and even linear narration, while apart from it (I am thinking of little Zora), the narrator goes in the opposite direction, toward broadening? As if, in suffering, we were seeking limits we make light of once tranquillity has returned. Can the broadening necessary for the present and the future go in tandem with the necessity of keeping our sufferings in check?

Let's go further: in the case of happiness, can we identify with a circumscribed vision of self? Would happiness be possible, were it only a diagnosis? Isn't the hallmark of happiness to not depend on any physical, chemical, biological, or even psychological cause while unhappiness wants to be caught in order to be driven out?

In some cases, however, as in mourning, unhappiness itself refuses to let itself be contained, for it struggles with all its strength for happiness, it wants to give birth to happiness and not simply be eradicated. It is not enough just to burn it, for it has caused too much pain. This unhappiness must produce a surplus of humanity. This is why the social worker who insinuates, "Your mourning is a five-stage process..." is taking the wrong route, for he has before him a pain that is seeking the road to happiness and not a pain that wants to get rid of unhappiness. If happiness is not the broadening of finitude, we don't want any of it. If ordinary misfortunes are not "diagnosable", they are unbearable. And when a transcendent misfortune arrives, a true misfortune, it wants to end up in the open, widen.

As long as humanity is directed toward a vain attempt to eliminate all ordinary suffering, it is going toward the elimination of diseases, it is not going toward the development of the self, and it will not find health.

CHAPTER 12 : The superego¹¹

Seen from the inside, consciousness forms the nucleus of the self. It then envelops this nucleus like a cell but - and this is just it - the envelope must not be closed; it is on the contrary an organ of communication which infinitely dilates. It is consciousness which, on the one hand, conjugates its own relation to the world (fusional we, resources you, I lack and desire, it presence of everything, definite we, indefinite one...) and which, on the other hand, links a potential knowledge of dynamic foundations (laws of physics, for example) to a knowledge ignorant of details. In this dilated space, the nucleus of the self dispenses values as it places its environment in relief.

Consciousness radiates its ontological, ethical, and economic (exchanges) values starting from a fundamental desire for truth and a feeling of participation (love). It knows that it is incorruptible, always able to begin again on a renewed foundation. It knows that it is undefinable, because it is the source of all definition. It continually liberates itself from all the memories which seek to imprison it. It is inhabited by a sort of anti-self, a dilator of the self which rejects any identity closed and defined once and for all.

But what precisely are the most decisive and pervasive memories that struggle against the self, that try to close it, freeze it, define it and make it predictable? Against what does it fight for its freedom?

All those who wanted to tackle the psychological problems of human beings have faced the permanent conflict between closed moral values and the ontological values of the nucleus of the self (I am worth the same ontological value as what I attribute to other beings independently of their moral conduct). With its ontological values, but also with its open values (its ethic), the nucleus of the self combats the closed values of its social environment, what Freud called the superego.

Why does it combat them? Why did Jesus, for example, combat the closed values of the religion and tradition of his childhood? And Buddha, and Gandhi, and many other sages? Whatever its content may be, a closed value serves to make hierarchies, to select and exclude. On this one count, it tends to place its system of values above persons and thus above ontological values. It rejects despicably persons who do not conform. In this way it undermines consciousness which, for

¹¹ The *Grand Robert* defines the superego this way: "Element of the psychological structure which plays in relation to the self the role of model (ego ideal), judge and censor in opposing, often unconsciously, the fulfillment of desires and the emergence of urges, and which, beginning in early childhood, develops by identification with the parental image."

its part, places life above morality, places the value of being above the behavioral values. Consciousness immediately perceives that for closed morality the most important thing is to place the ontological value of persons under its supervision, to subdue it so as to maintain its power over consciousness and life, hence its name of superego.

In a market society practicing a kind of marketing totalitarianism, one system of closed values dominates all the others. Wealth measures the value of beings. The human person is worth his or her ability to invest and consume, his or her ability to seize the instruments of power: deterrence (weapons, violence, threats, etc., rewards (salary, benefits, profits, etc.), manipulation (medias, negative advertising...). The weight of ostentatious riches becomes the symbol of the value of being. The poor man or woman is invested with a negative value, he or she is guilty of poverty, he or she is even guilty of collective poverty. For that one reason, as soon as consciousness awakens it combats such values and the whole system that supports them. But this struggle will be repressed. You must not even perceive it, for if you do see it, you might want to jump into the arena and fight against every form of domination. Every civilian consciousness must be deterred from fighting. Every system of closed values will succeed in elevating over this struggle a false struggle, a false war, that between morality and instinct (what psychoanalysis has called urges, the id).

More than one person has emphasized the relationship between morality (superego) and instinct (id). Freud, for example, took over from religion, which has always looked with distrust at the body and the sexual instinct, which must of necessity be socialized and civilized by a morality that is more or less oppressive. He wanted to objectify this struggle. But the true struggle is somewhere else, between the budding consciousness and the closed morality which serves to make persons predictable by castrating them of their creative and transformative vitality.

A society whose primary objective consists of developing and preserving relationships of domination must succeed in provoking and aggravating a struggle between morality and instinct, and it must make this struggle the primary struggle. It is about dominating the body, which is supposedly depraved, and nature which is supposedly savage and barbarous. For without that war, consciousness might be able to see what really is at stake. By a false struggle, they seek to paralyze the emergence of a true social lucidity by leading consciousness into a false war.

In reality, closed moral values aim to create their *raison d'être* by providing the most negative vision of instinct possible. The enemy must be created, urge and instinct must be created. The prohibition is intended to produce the transgressor. "Don't go near those cookies", the mother says as she places the box very visibly on top of the cupboard. She repeats it often: "You better not take a cookie." The more she says it, the more the child feels himself become a cookie thief. After awhile that's all he thinks about. He ends up by giving in. And his mother can punish him all the more readily since she knows in advance that he can't resist.

Don't go near women, the Catholic Church used to say. Sexuality is dirty. And they repeated it often: sexuality is disgusting. There took form, then, around natural desire and sometimes even around simple sexual curiosity a sort of perverse monster who thinks only about that. If the struggle worsens and the young priest feels increasingly dirty, filthy and repulsive because sex haunts him nearly every night, then he cannot help but break down. And after the "sin", he feels even more filthy and sordid. He can even reach the point of miserably hating himself. So, when he encounters a symbol of innocence, a child, for example, he says to himself: "He must be dirty and disgusting, too." For if the child were pure, he the priest would be horribly dirty, while if the child is dirty, we are all vicious and dirty, and innocence doesn't exist. So he comes to project his image of vice on the child. And he is going to sexually molest him, convinced that the child desires it.

The other method goes in the opposite direction; through pornography, the existence of a vulgar sexuality, without desire and tenderness, is directly induced. It is defended every time it is done between "consenting adults". And little by little, the sentimental young man will feel guilty for not being able to have sex with all the girls who demand it of him. He is mocked for associating love with sex. His mother repeatedly tells him not to form attachments, that sex doesn't commit you to anything, it's like sharing a plate of pasta. The young man feels weak and insignificant because of loving. He comes to hate his "sentimental and romantic" nature, he represses it... And then one day, pow!, he falls in love. He feels emotionally dependent, vulnerable, fragile. So he leaves the one he loves and her two children. It is in the whorehouse that he finds at last the inner peace of one who feels normal and like the others.

When we pass from religious society to secular society, to be moral means to be normal. Sometimes I have happened to meet teenagers who go to Mass and hide it from their parents, who like pastoral groups, and find stories in the Gospel inspiring. Having religious feelings made them feel not normal. They were even ashamed of them.

We have no choice but to recognize that moral (or normal) values are what make the delinquent. Judeo-Christian sexual morality teaches that sexual desire is no more than an impersonal physiological libido which transforms man and woman into each other's predators as soon as they are sheltered from taboos. Pornography demonstrates this vision; it is the faithful preacher of Puritanism by showing what lax sexuality "is". Pornography is the ally of Puritanism; both of them fabricate the sexual "urge". Prohibitions create obsessions. Morality literally manufactures "instinct".

At least two mechanisms are involved. According to the first, morality defines a representation of "instinct". For example, the human animal is thought to be selfish, blind, lacking limits, impulsive, incapable of comprehending the consequences of his actions, illogical, unsociable, sexually unbridled... This representation is all the more effective since it proceeds indirectly, first by prohibition, secondly by imitation. It's a little as if you saw a neighbor with a rifle

in his hand, behind a concrete wall. He is watching his own house. He is visibly anxious; sweat is running down his forehead. You immediately tell yourself: a tiger has entered his house and taken possession of it. In the house, the invisible has been made visible in the form of a tiger by a bit of theater. Perhaps there is only a cat in the house. The civilized man looks at his house this way (there is a compulsive animal in my sexual parts, in my belly and in my heart).

According to the second, the most ordinary and natural needs will be read and repressed by this paranoid who watches his own house, his own heart. The repression will increase the need and above all, the need will end up conforming to the representation of it. The poor cat who sleeps in the house has no more milk in its bowl. It is shut up in extreme solitude, no one responds to its needs. In fact, after a certain period, if I approach the house, it may well be that the cat will jump on me with its claws extended, thus proving that there was in fact a tiger in the house.

Morality manufactures what it combats. If an extraterrestrial were to read the moral code of the eighteenth-century Jesuits, he would say that men are furious animals. The number of details in the prohibitions of masturbation would lead us to believe that man thought only about that. Each article of the moral code constructed an idea of human nature, clearly exaggerated, that was both a horror and a scarecrow.

By fighting this image of instinct, morality creates the "savage". This barbarian, this uncivilized person feels that this is aimed at him. Since instinct is rather indefinite in him (to the point where he has almost no instinct), the man readily allows himself to be structured from the outside by the moralist (and the anti-moralist is just as effective in this art of structuring instinct). Those who have studied the history of witches have convincingly demonstrated that it was the hunt for witches that transformed the female herbalist into an evil crone. And in fact, after a century some witches ended up by really existing, confessing to what people wanted them to confess, acting in conformity with the fears demonology created.

The aim of the morality of the good is above all to manufacture the evil, the criminal, in concrete form, to produce it, and then to combat it. Once it is incarcerated, publicly exhibited, its existence can no longer be doubted. And everyone can begin to feel that the "monster" is embryonic in everyone, and that, without morality and its repression, it would come out of the shadows and commit the worst crimes. A divided society ensues: the evil are identifiable and seen as rotten apples. The others are good, but potentially evil.

Knowing the risk of contagion from immorality, the good are prepared to commit the worst crimes in order to fight the wicked, humiliate them, exclude them, sacrifice them. Thus, the more women and men are thrown into the social hell of poverty and destitution, the more the "good" arises with its moral code, its standards, its education and the signs which attest that one respects the laws (respect here means profit from) and that, in this respect, one has succeeded (the

proof of this being the money and power one manipulates), while the poor are dirty and stink¹².

The more the bad are bad, the worse will be the legitimate barbarities used to combat them: burning at the stake, gallows, stonings, gulags, galleys, slavery... Since the end justifies the means, since instinct is evil, there must be a whole system of repression to crush the poor, the enemies, the infidels, the foreigners, the homosexuals, the perverts who are in fact squeezed into the same bag. In the end, we have peoples capable of genocide, peoples able to contaminate the air, pollute the water, poison the plants and animals while impeccably respecting morality.

But no! Morality is not at all made to fight an instinct that is, or so one thinks, fundamentally antisocial, anti-ecological and savage, but to fabricate it. Consciousness, on the other hand, is what it tries to bury by fabricating the struggle between a supposed antisocial instinct and a supposed civilization. It wants to replace consciousness with the superego and make it the reservoir of a society's moral values in the struggle against supposedly selfish and antisocial instincts. Now, consciousness is a totally different thing: it is what can oppose the superego and the prevailing social morality. It is even the only reality which can resist the fear of nature. The dialectic of morality (superego) and instinct (id) conceals and represses, then, the real dialectic between needs and consciousness. We will return to the "needs", for the moment let us stay with the notion of the superego.

The child internalizes the prohibitions, the orders, and the moral rules of his environment. In other words, he records them in an active memory. He doesn't remember the moment when he heard: "No! no! don't go in the street." But each time he approaches a street, he hears the prohibition once again. Little by little, the desire to go in the street grows bigger at the same time as the guilt associated with such a desire. The superego speaks. It repeats: "You're an idiot, a bad boy, a naughty boy" (according to the educational phrases). As it speaks, it exacerbates the desire to transgress on one side and the importance of the prohibition on the other.

Everything takes place as if the superego were a reservoir of self-deprecating phrases which self-activate according to the circumstances and create the guilty person and the guilt. Even when the superego puts on a positive face: "You're a good boy, a good girl...", it produces a guilty person (the one who doesn't want to be a good boy or a good girl) and a guilt (stay on the straight and narrow). The superego continually reactivates "instinct" and prohibition. The world of the supposed urges is modeled by it; it passes from the indefinite to the definite by the prohibitions.

12 Read *Hunger* (1890), the masterpiece of the Norwegian novelist Knut Hamsun, winner of the 1920 Nobel prize for literature.

The superego speaks in the right ear (the good angel), repeating orders, and it also speaks in the left ear (the devil), evoking the desire which justifies these orders. It speaks, but it can also act directly on the body by increasing stress hormones, stomach acids, the diaphragm's rigidity... It can directly stifle the body's energies. By condemning, it can even become a murderer. For my part, at the age of sixteen I barely escaped an attempt at suicide which was in fact the attempted murder by my inner executioner (superego) of the horrible stain I was for it.

The superego is a sort of memory which directly constructs two life stories: the white and the black. Here, it irrigates me with my white curriculum vita, I am the sum of my successes, of what is superb, beautiful, good, competent, generous, glorious... There, it dumps on my head the blacklist of all my shameful actions or intentions. It plays in black-and-white, and I lose the color and nuances.

It also puts up models to identify with (Freud called them "ego ideals"): a model woman and a model man, a model father, a model mother... to which I can transfer in order to evaluate myself and according to which I will be evaluated in any case. The model for my profession will judge me in my work. The model consumer (for example, the front page of a catalogue or magazine) will judge me in my social success... My feeling of success or failure depends on the stature of my models.

Between the superego and the "wild world of urges" this superego combats, the nucleus of the self remains intact. But in comparison with the superego's moral noise and thundering phrases assailing me, it seems infinitely silent. However, it alone can reappraise the barbarity of persecuting the impulsive "barbarian"! Since the nucleus of the self is consciousness itself in its conjugation of we - you - I - it, it always remains capable of reading the real needs of the person and sizing up moral values for what they are. It is not the arbitrator between morality and instinct; it sees that the moral combat is a game, transcends it, and by this very fact can enlighten the will in its choices.

CHAPTER 13 : Infantile reactions

Human beings cannot live without resources from outside: air, warmth, food, water... According to the dictionary, needs are "demands born of nature or social necessity". There have often been attempts to define universal needs (independently of cultures). This is probably a wrong track. Even so, the following categories can shed light:

-- Physical needs: air, food, water, thermic balance (one can die from cold or heat), care when ill.

-- Affective needs:

Need for union: the need to be touched gradually broadens as the child develops. It is transformed into need for affection, into sexual desire, into thirst for friendship... Solitude is literally lethal for human beings. Eating is a form of union with biological energy from outside, so it is associated with this need.

Need for autonomy: as soon as its affective needs are satisfied, the young child explores its environment. A minimum of autonomy is necessary for her or his learning. Separation does not help a small child become autonomous; on the contrary, the more we respond to her or his need for union, the better she or he succeeds at attaining autonomy.

Need for recognition (to have value in the eyes of others): if no one in a family and a community awards a child value, he or she will let themselves die.

-- Needs necessary for taking root:

Need for education: like all the evolved animals, human beings do not survive without the transmission of some items of knowledge essential for survival and for life in society. For humans, the need for education includes the necessity for an intergenerational memory which allows us to avoid repeating serious or fatal mistakes and profit from discoveries which facilitate life. Without that rootedness in an historical depth, it is difficult for human beings to survive; they can't depend just on the experience of their parents; they need the experience of several generations and of a whole community.

Need for meaning: the desire to live is not a given for human beings. If they can't hope to progress in a better understanding of the meaning of life (wisdom), they rapidly reduce the energy they expend on living and turn more or less consciously toward death (for example, by the tendency to dominate those close to them or on the contrary to submit)¹³.

Need to be returned to vital contact with reality. Human beings can readily become disconnected from reality and consequently repeat behaviors that are maladjusted. This disengagement comes from the fact that the person can easily live in "the world that he or she thinks" rather than in the world that is there. In a society very dependent on nature, this disengagement cannot last for very long; the necessities of survival will bring the person back, or he or she will die. In a society whose organization and technology protect us against reality, the problems of adaptation (mental health) can reach alarming proportions.

Here we want to better grasp how consciousness manages to cope within a psyche that, for its survival, depends totally on what is outside itself. Human beings do not depend on their instincts alone to define their survival actions; they also have

¹³ This is the thesis maintained in *Le pouvoir ou la vie* (Power or Life), Montreal, Fides, 2008.

intelligence and consciousness at their disposal. They must learn to read their needs, to study their environment, to make choices.

Needs do not form a pyramid. It is not true that the primary needs like the need to eat take priority over the spiritual needs like that of finding a meaning in one's life, for when we don't find any meaning, we can completely stop eating and allow ourselves to die. Needs are essentially interdependent.

Real life is in a state of crisis, it stands between narrow thresholds; it resembles, though much more complex, a steam boiler: too much, and it explodes, not enough, and it is extinguished. As long as it remains within certain limits, it whistles and dances in the blue air, but all it takes is a lack or an excess and it is the end. If today we take the universe of our needs lightly, it is only because everything is going rather well for us. If we approach a threshold however, the body begins to send out alarms. The need for iodine, for example, is precise, barely a drop too much or a drop too little, and it's sickness or death. Most needs are of this order. Culture by itself can gather enough experience and wisdom to guide us. But alas, culture also includes a maladjusted and dangerous superego.

There is no possible return to instinct. Babies are transformed into cultural beings almost immediately after their birth. Even the way of giving birth influences their perception of their own needs. It is starting from the surrounding culture, from their intelligence and a consciousness of themselves that they will decipher their needs and respond to them.

However, a culture can't be no matter what. If it makes the work of perception and the expression of needs impossible, if it doesn't propose solutions that are at all effective, no child of that culture can survive and so it will disappear. Culture is, in short, subject to the necessities of nature, and it either responds to it or it disappears. Nonetheless, in the case of cultures founded on domination, a whole array of explanations will come to give the impression that an autonomy of man in regard to nature does exist, and technology will give a strong impression of it (in a big car or a house of stone, I feel protected). Such cultures can survive for quite a long time in a maladapted condition, and this does not help us find better responses to human needs.

But let's not broach the subject of sociology now, let's stay on psychological ground. How do the needs, the responses or the non-responses of the environment, and the superego construct the roads which, once traced out and rolled down, tend to impose themselves as the only ones? Let's imagine a child deprived of affection. Let's imagine that he forms the habit of responding to this lack by huddling in his arms like a shrew in its nest. Let's imagine that the superego, which forbids us to wall ourselves off in our solitude, makes the child feel guilty about this behavior. The situation is repeated nearly every day. When the child consoles himself in this desperate gesture, he feels a whole complex of emotion: sadness, self-satisfaction, guilt, solitude, a false sense of affective autonomy, rebellion... He will accumulate not only memories, but he will above all learn a behavior and emotions which form a whole, an observable and structural

reaction which firmly anchors itself in her or his psyche and habits. At thirty, he will still repeat them as he allows himself to be overcome by this complex of emotions while the real situation he now confronts is not that of his childhood.

Another example: a little girl seeks her father's attention. Her mother is very warm and clinging, but her father is absent, and when he is there, he doesn't see his daughter. This lack digs itself deeper inside her. The little girl feels guilty. The mother makes it be known that she is a little jealous. Let's imagine that this little girl develops the reflex of scratching herself so hard that pain covers the emptiness and the lack is filled with blood. A complex of emotions dwells within her (resentment, a feeling of worthlessness, guilt, anxiety, jealousy of her mother...), and the behavior has become the trigger for this emotional trick. Twenty years later, the young woman believes she has found an answer with a much older professor. She goes to live with him. But in some situations she is overcome by a state of anxiety and guilt in which she mutilates herself.

The response to needs can, then, be insufficient. The child adapts. She or he internalizes a behavior associated with a complex of structured emotions reinforced by guilt. Later, unknown to her or him, an infantile reaction can suddenly appear at a moment when a situation shows similarities to the childhood situation. Memory is not just the recording of memories, it is also the assimilation of repetitive reactions associated with emotional complexes and prohibitions.

By their very definition, infantile reactions that are carried on into adulthood are not adapted to the present time. It is memory in action, or rather in reaction. A betrayal in this respect will probably produce an infantile reaction which will be strongly internalized (either because of the violence of the event or because of its repetition). Thus a child who needs affection and who is given a sexual response will feel betrayed. Not only is the response inadequate, but it is upsetting. Impulsively beating a child who feels sorry for himself disappoints him also. In this kind of situation, it is the child's trust that is betrayed. The infantile reaction will include an element of distrust and fear.

Some behaviors can be disconcerting: this one digs holes in the ground to hide himself, that one shuts herself in a closet and hits her head, this one rolls himself up in a blanket to the point of suffocation. The small child has no other childhood than her or his own, they have no other family than the one they do have. They are obliged to come to terms with life such as it is. They manage to calm their anxiety by withdrawing to a corner of the cellar perhaps. Later on, this behavior will be inappropriate, but it will be their refuge. Childhood is always the ultimate refuge, for it is the beginning of the story. But we don't take refuge in childhood in general, we take refuge in a characteristic moment where the principal emotions are particularly intense. The refuge is like a summary of childhood as perceived.

The child very early becomes aware of his or her vulnerability. His or her body can be burned, crushed, broken, frozen. It is mortal. It is a collection of nerves where there can culminate a suffering whose limits cannot be seen. It is in this

context that the superego's rules, prohibitions, and obligations are integrated. The less the child feels protected, the more she or he will develop strategies of submission and rebellion. They will be internalized with their complexes of emotions. They will manifest themselves when we are asked with more or less insistence to yield to an order, a rule, a prohibition...

The rebellious child's reactions will imitate the "delinquent" model suggested by the superego's rules. It is not just about doing the opposite of what is demanded, but also about entering the psychological state of the "naughty boy" against which the superego struggles. Learning "good" is necessarily learning "evil" at the same time. What is repressed is not only a need that is unsatisfied because of the superego, it is also and especially a set of the reactions of a rebellious child who has internalized the "model of evil" and the emotional complexes which accompany it. The rebellious child in us is the "bad boy" or the "bad girl" as defined by the superego, with its complexes of emotions and a combination of guilt and revolt.

Submission too, with all the emotions associated with it, becomes a set of infantile reactions: learned behavior, associated emotions. The submissive child is the "good boy" or the "good girl", with the accumulated resentment and the associated frustrations. An explosive mixture! When I submit as an adult, it will not be a simple behavior, but a reaction associated with a world of emotions.

Let us summarize the process: real needs await responses. The superego exerts pressures so that these needs conform to the expectations of the social environment. The environment reacts, though imperfectly. Some responses arrive too soon or too late, not enough or not at all. Some needs are even betrayed at times. The subject defends him or herself. He or she develops more or less effective reactions with which he or she associates masses of emotions. In brief, as the superego is being internalized as a set of norms, values and prohibitions, there also develops, elsewhere in the psyche, stereotyped reactions with their emotional complexes.

Everyday life will not delay in provoking these reactions. Then we feel assailed by a sort of little character who arrives with his ready-made behaviors, his emotions and even his programmed sentences. We are no longer living in the present situation, we are drawn into a learned reaction that doesn't have much to do with what is happening in reality, here and now. Someone who knows us can easily become exasperated, because "again" there will be the same gestures, the same language, the same emotions.

Memory is not just a reservoir of recollections. It is well known that each memory is associated with complex and precise emotions. When we remember, all this comes back in us. But there is also a reservoir of ready-made reactions. When they are triggered we are more or less cut off from reality, we act and speak as if we were possessed by this reactive and emotional chain. Our relations with others are subjected to distortions then because the past veils reality and even overwhelms it. The human psyche has internalized a large number of infantile

reactions: reaction of the deprived child, who is constantly seeking the response to a need, but doesn't succeed in this because the present response does not answer the need as it was experienced in childhood; reaction of the betrayed child, which manifests fear and distrust; reaction of refuge, where, in a physical behavior and a psychological state, we rediscover the universe of our childhood; reaction of the vulnerable child, more or less aware that he or she can suffer and die; reaction of submission or rebellion.

In human relations, an interrogation by the superego ("You always leave everything lying around. You never listen to me. You've let yourself go again. You haven't done what I asked. You always do what you want...") often brings about on the part of the person interrogated a reaction that is symmetrical to the other's superego. She or he too comes out with their own list of reprimands. The dialogue then turns into a war of reproaches. The responses are moralizing and moralistic. As the war of reproaches gets worse, aggressiveness, resentment, humiliation and powerlessness precipitate infantile reactions. Suddenly the subject is overwhelmed by behaviors and complexes of emotions. The child, betrayed, can then display all his or her distrust. The submissive child will feel sorry for himself. But watch out, if the submissive child starts to take up too much space, the rebellious child will soon pop up (the later this is, the more serious it is). The dialogue is then contaminated by infantile reactions, reactions of the past.

When the self is in a lucid state, we perceive present situations and react to them. But at times it is as if it is stronger than me or stronger than the other, the superego comes and invades the space and a war of reproaches is declared. We can go to war or attempt to avoid it. If we do go into battle, we don't easily see the end, for the superego's aim is not simply to display its values; it wants to impose them. If we wish to avoid war, the strategies are often ineffective.

In the heat of living, some situations will inevitably activate infantile reactions which we can try to master or which can overcome us. These reactions regularly contaminate our interactions with others. I take refuge in total silence. I rebel against a detail. I huddle in a state of prostration and submission. I go into a state of excessive jealousy. I feel useless and worthless. I bemoan my fate. I grumble as I wash the dishes as if the whole world rested on my shoulders...

Some interactions with others are a mixture of reproaches and infantile reactions. For example, a rebellious child in me lowers its head and puts out its claws. I then enter a war of reproaches by rebellion.

We encounter, then, three forms of dialogue: wars of reproaches (superego against superego); contaminations (infantile reactions against infantile reactions); wars of reproaches by rebellion (reproaches against infantile reactions). In each case, there can be escalation or an attempt to return to a dialogue between conscious and vigilant "selves". In short, within the psychological universe the struggle between superego and needs gradually becomes the struggle between a superego structured in words and gestures and a set of learned reactions. Overwhelmed by this kind of internecine war between the inner "little characters",

the real and present needs will be poorly read and poorly satisfied. The subject finds him or herself at times incapable of reading his or her needs and responding to them, which reopens the wars of reproaches.

In this context, what is consciousness? The ability to step back, to escape stereotypes, to read real needs and enter into relationships with concrete persons in the present situation.

CHAPTER 14 : The familial drama

A little like the uterus, the family forges the child, then expels it, but without itself breaking the cords by which the child will be guided, more or less, for a long time. The first birth is tearing pain, the second doesn't always take place. The first throws us into a family drama, the other, into a social drama. Rarely do we succeed in freeing ourselves.

If consciousness is anything, it is the thin shaft of light of a possible freedom passing through the labyrinth of family and society. It is in this labyrinth, however, that it can discover the instruments of its own liberation (language, great works of art, sciences, philosophy...). Freedom's unique quality is to be simply possible and thus never necessary.

At the base of the family is an erotic bond, the attraction between two sexes. Human beings are born from sex. A slippery and unstable terrain if there ever was one. One of the objectives of a culture and a society is to stabilize this relation of attraction, to transform it into conjugal love (or into familial duty).

There is at the foundation of human beings the hope to be loved independently of life's accidents and the losses of aging. Conjugal love is a slow and difficult transformation, but imagine for a moment the new security... Someone awards you a value independently of your physical beauty, your intellectual qualities, your health. You receive the assurance of an intrinsic ontological value. It is a little as if this person perceived in you the pure being, the incorruptible and ever-creative seed likely to pass through a mortal life without ever losing its value. You can be disfigured by an accident, be handicapped, be torn to pieces, grow old, the other will still love you forever and ever just like the first day. And you will stay with this person who knows you. More than that, you sleep with her...

Everyone would want this. But to want it is one thing, to offer it to someone is another. The foundation of the family is in the direction of this aspiration: to be invested with an unconditional and enduring value. It is this that must be given to the child as a necessity as vital as milk or air. The child should drink this honey in the kiss her or his parents have for each other: Eros become Love.

An ideal difficult to say the least. Often, the couple bears more of a resemblance to the superego than to such a maturity of the self. Conjugal love isn't truly born; it is conjugal duty compensating for it. Nevertheless the child arrives in the world and can live only in this truth or in this illusion of being loved for her or his being, without having to do anything to deserve this love besides innocently existing. If it comes down to it, he or she can do without finding this love between their parents, but they cannot do without finding it in at least one of their parents (or lacking this, in an adult who takes care of the child and surrounds him or her with affection. He or she needs this like a fetus needs a uterus. The response to this need is what makes the parent. For the one who brings an enduring and unconditional bond is the relational parent and thus the essential parent, even if he were the orphanage custodian.

It is nearly impossible to get out of childhood alive if no one has reassured you of your ontological value. If Daddy, Mommy and all the other adults who take care of you love you only to the degree that you submit to their moral values, or worse, if they appreciate you only for your economic value, then you will bear the feeling of being worth nothing at all. You will be driven to conform in order to receive the minimum needed for life! To be subjected in this way to a conditioned value is to become infinitely fragile, is to know that you have to be young, good-looking, nice, healthy and happy in order to be recognized, and since this can't last forever, you are cast into a profound insecurity.

Even if you can do without the love between your parents, you can't survive a love which can break off as soon as your back is turned. But it is not as easy as you think to receive this love when your mother or your father don't receive it. When you sense that they lack love, are in distress, something in you flickers like a little flame in the wind.

Imagine a child who clearly sees that his or her father loves the mother only conditionally, that he can drop her, that he will surely let her go when she loses even a few of her charms. The child then says to herself that childhood is a temporary state of grace. As soon as she is an adult, she will be worth no more than a certain measure of beauty and of health. She will risk being attached to her childhood as if to a lifeline, even if it means paying for this attachment by anorexia or another tactic for staying in childhood. To be loved because we are little, and to know that as soon as we leave childhood we will be thrown into a love with no dreams is rather alarming. The problem is not the parents' separation, but the conditionality of the conjugal love.

The mission of the family is not to educate first of all, but to ensure that the child has a foundation, and this foundation rests in the feeling of having an intrinsic value capable of surviving the accidents of life, and even death. A foundation able to make a child pass through time. A family's only irreplaceable inheritance is that zest for living overcomes disgust with life.

The role of the family is to form a nest of love, and thus of recognition of ontological value, at least until the child can become strong enough to confront a

world which doesn't live according to this principle. In the cold eye of a market society, the family is a sort of necessary illusion maintained in the form of a nest: in the center a Christmas tree, around it, a display of toys, because the market's truth (the balance of selfishnesses) is implacable. The family: an incubator. Childhood: a preparation. But reality, outside, in society, is the survival of the fittest. Fortunately, it is possible that the family is not an illusion, for the nucleus of the self carries love in an embryonic form, as we have said.

Before maternal or paternal love, there is Eros. The family is first of all a matter of sex and passion which has to ripen in order to form a long-term conjugal relationship. And this isn't simple and easy, to such a point that a large part of the cultural and social apparatus aims precisely at stabilizing this relationship (most of the time through the superego). The institution of the family literally takes its chances at attaining a transgenerational solidarity that is today highly improbable. While friends form a network in space, the family tries to preserve a network across the centuries. But this cultural apparatus is fragile. It used to be strongly supported by religion and filial duty. Property, for example, stopped being familial, becoming in large part individual (and in the form of credit). Everyone has the right to do what he wants with what he owns; he is no longer the manager of a family property which belongs by right to all the grandchildren of the grandchildren of the future. Nevertheless, a vague idea of family and filial duties still remains.

It was mainly in the twentieth century that the institution of the family was smashed to pieces by industrial capital. Salaried work, and salary as credit, and credit for personal consumption have placed the family under the pressure of the present. Industrialization has cut time into spheres disconnected from each other (family, work, consumption...) and diverted it toward short-term goals (while time was oriented toward finalities *beyond the grave*). Time is torn to pieces. Despite this temporal myopia, the family's aspiration remains about like this: we can detest each other from time to time, argue and be rivals, but we will always remain bound together for better and for worse. An indissoluble bond transcending moods and passions binds us together despite all the human hardships.

Even today, in spite of everything, the ideal of the family by far surpasses what Eros can bring to the children of the earth. Conjugal love doesn't keep its promises for very long, unfortunately. In a traditional society, marriage survived, but without conjugal love it grew acerbic and sometimes even hateful. The context can change infinitely, but the aspiration toward an indissoluble bond that reassures us of our ontological value always supposes going beyond Eros. To go beyond is not to suppress, nor repress; on the contrary it is to add something. Nothing is more difficult. So morality attempts to keep what wisdom does not manage to sustain.

Failing to transform Eros into conjugal love, we make do with duty, coercion, taboos, prohibitions. On one side, the fundamental need to find an ontological value in oneself, on the other, the endocrine fluids of desire. Between the two, duty. The superego against sexual hormones. In other words, the family drama.

What is a drama? The battle of the forces of explosion and separation against the forces of union. Or rather, a model of combat, a scenario of battle, a way of making war and losing it. Certainly, one issue stands out: the nucleus of the self is precisely the awareness that we are one through the adventure of two separated beings (desire for truth and desire for love). Yet the whole story of maturity is precisely there: how to exit the family drama in order to become a plenary being, a completely whole being built on its conscious foundation (nucleus of the self)? How do we emancipate ourselves?

When conjugal love fails, duty, orders, promises, prohibitions attempt to replace it. The foundation is no longer love, but the superego. The couple has become a club of mutual surveillance which measures and ratifies conjugal, parental, and filial fidelity. The family then risks losing its emotional security and replacing it with the apparent security of a moral code. Moral values tend to be substituted for ontological values. This is the easy solution, but it is tragic also. To lose one's footing in the face of this moral code is not to be anything any longer. So you will hold on to these moral values for dear life (or vomit them out like poison). They become the only guideposts. In the name of moral values, everything is in place for the worst violence, for a being deemed immoral no longer deserves to be loved. The geometry of the psyche is transformed into a moral gradient where the right to affection is "properly" distributed. As long as you occupy the high ground, there is no benefit in putting anything at all into question. Lower, and you are less contented; infantile reactions appear, almost automatically. They are very often "immoral", precisely to the degree that they seek a response where the superego furnishes only prohibitions and prescriptions. Rebellion and submission, breaking of trust or diving into childhood's refuges, inability to confront the obvious feeling of vulnerability -- arise, provoking crises the superego will try to extinguish by wars of reproaches and sacrificial rituals (humiliating a child, for example).

The more responses to needs are paralyzed by an excessive superego, the more responses to needs are falsified by an odor of duty, and the more we internalize stereotyped reactions that will be less and less effective as we age because more and more removed from reality, these reactions will also be judged unacceptable by the superego and accordingly crushed beneath the weight of guilt.

If the self does not succeed in firmly developing between the superego and the learned infantile reactions, the subject becomes a kind of battlefield between morality and an emotional life rendered automatic. Morality seeks to make behaviors conform, and emotional life is transformed into a set of reactions which seem to function on their own.

The superego is transmitted from generation to generation. As long as it is not brought into question by the self, it is transcribed almost directly from parent to child, and this is done all the more readily the more the superego of the family conforms to the superego of the society in which that family lives. But on the other side of the person, the side of infantile reactions (emotional reactions), the learning is also transmitted from parent to child. My mother reacts like a

submissive child, bemoans her fate, complains, but will not make much of an effort to really change the situation. This type of reaction is learned. As for the father, when he is up against the wall he explodes, throws things, as if he were trying to free himself from a straitjacket. This type of reaction is learned also.

Defensive reactions -- denial, repression, projection (on others), taking refuge in a world of illusion, "symptomizing" guilt, withdrawal, identifying with stereotyped models, regression into a childhood refuge, radically splitting the superego or the infantile reactions from consciousness (psychotic cleavage or foreclosure) -- aren't they a kind of arsenal we draw on when need arises? All this is organized into overall strategies with which the other members of the family coordinate their own strategies. Neither the superego nor the infantile reactions are passive reservoirs. The superego is not a stack of rules. Infantile reactions are not just a stack of learned emotional mechanisms. There is a drama that ties all this together. Something holds the family pen and, from one generation to another, the story changes, but it doesn't change that much. If we let things go on, it's a safe bet that the story will repeat itself in ways that are scarcely modified.

CHAPTER 15 : The social drama

The familial drama is experienced in a theater where a very wide and very long play is performed, one that blends, in its gigantic setting, the whole world, society in its entirety. The pressures of the social drama on the family are so strong that by themselves they define the drama's essence, but they are also so constant and general that they are forgotten. Confronted with the familial drama, consciousness can find sufficient strength in itself, but confronted with the social drama, it generally remains crushed as if faced by something inevitable. It is because, for all of us, the social drama began thousands of years ago, and it has tightened and even accelerated as if it were tending toward an inevitable climax.

It probably began with cereal agriculture (capitalizable) and with metal suitable for cultivating grain but also for defending it (or attacking). It clarified its legal framework under the Roman empire and displayed its hegemony in the Industrial era. How can we describe the broad outline of the story? Nature is transformed into a reservoir of "goods", it passes from subject to object and leaves the world of original maternity to enter the sphere of useful materials. This is the period of the desacralization of life and the sacralization of force. The majority of deities become masculine, animism is localized, the soul of the world is fragmented, certain trees, certain rivers, certain mountains have a soul, but on the whole the sacred shrivels and thus nature in its unity loses its soul. Animals leave the realm of the sacred. There also, the best way to remove them from the sacred is to sacralize some of them, who thus become worthy of sacrifice and food for the gods. By this very fact, the others are nothing more than a food bank. The world is divided into sacred and profane; the profane can be utilized, tamed, and sold with no threat. The profane part of the world becomes a good that is infinitely divisible, cut into parts and exploitable. At the same time, societies become

misogynistic; woman totally loses her magic and becomes an object of exploitation.

Gradually, but also by leaps and bounds, private property will grow in importance and prevail over "nature", common to all. By the use of force (dissuasion, rewards, manipulation) clans and families will find the means of controlling (by force) and then appropriating (by inventing law) the means of food production (land, animals, women, tools, slaves). The social structure will end up by finding natural the division of reality in two: private property controlled by clans, families (or other closed groups) and common goods (air; quite often, water; abandoned forests; the part of nature left over, called "wild" because of this).

The wealthy families, those who possess private property and the means to protect it, are obviously in competition. It is characteristic of a private good to be seizable by force or by commercial transaction. In such societies, wars and rivalries are always present or potentially so. But it becomes increasingly necessary to join forces in order to better struggle against the "others" or to share highways, tools, lands, buildings. This is the beginning of "public" property, property shared by wealthy allies. What remains of the "natural" and the "wild", that is to say what belongs to everyone or no one, the air for example, is completely forgotten. The magnificent heavens, the regularity of time, the stars in the sky, the part of the seas remaining free, is still for everyone; it isn't rare, and so no one is interested in it. But had a clan or family found the technical means of removing the air (thus producing scarcity), and bottling it to sell, it would have been done. And if that family had been the only one able to do it, it would have without a doubt dominated the world. What was not done for the air has been done for the land and many other things.

In short, free and common nature has been divided into property, that is to say it is only seen in terms of needs defined by man. Need is no longer an indispensable bond with the body or the mind; it has, as its principal end, situating each person in his or her social position as possessor. Need is now an imperative of the superego. "You must possess this in order to be situated at such-and-such a place in the socioeconomic universe." And this is always accompanied by a moral sanction: "If you don't possess this, you aren't worth much."

With the timid arrival (revolution by revolution) of the aspiration toward democracy, a part of "public" goods make up a part electoral concerns. But presently most democracies remain either oligarchies or plutocracies. At the present time, the vast majority of States are dominated by banks, and so democracy at its beginnings is already dying. We elect managers of countries to ensure that a drop in credit is avoided... But let's stop there! The aim here is not to describe the social drama, but to see how it influences the family. Families act out their lives within the social drama. They have little time to devote to their children. Moreover the children are abandoned to the social realm as early as possible. They are immersed in commercial values and educated with a view to

salaried work. The parents are absorbed in their own work in order to obtain credit. Credit multiplies consumption. The parents return home with their worries from work. In a world that is highly competitive and directed toward the accumulation of symbolic goods, these worries are numerous, as much for the rich as for the middle class and the poor.

The child realizes very well that her or his parents play a role in the social drama and that, in this game, they do not have much power. Even the master banker only plays a game whose rules she or he is powerless to change. At the slightest error, she or he is forced aside by a colleague. The child sees very well that her or his parents are involved in a drama that extends far beyond the family.

The familial drama is sculpted by the social drama. The father humiliated at work humiliates his wife or his child. Consciousness feels as if it were a tiny refuge where we feel we are escaping the struggle, the collective madness, the headlong rush of consumption...

The power of the social drama is that it has no competitor. From one family to another, the familial drama changes, but the social drama has become worldwide. Someone will say that China is communist, but how is it a different drama? There we are still dealing with groups who manipulate private property in a competitive system where market values determine moral values and eviscerate the human being of all her or his ontological value. This social value is so hegemonic that it appears inevitable. According to "political realism" it is nature itself: the place where the law of force is supposedly master. The cosmos is nothing more than a set of forces.

Consciousness finds foot and handholds when it can compare different models. When it finds itself in front of a smooth wall, it has nothing to bite into, and so it looks for fissures...

CHAPTER 16 : The cosmic drama

Why construct a social drama and a familial drama, very small theaters for the human mind? Doubtless because the true human drama, its solitude in the infinite, its absolute ignorance in such grandeur, gives us vertigo. Who can stand it? At times, it is total night.

Tagore describes it wonderfully: "There were several rooms inside the temple. In one of them, I spread out my blanket and lay down. The shadows held captive in the cavern seemed alive, and, like an enormous monster, their damp breath moistened my body. The idea came to haunt me that this was the first of all the animals created, at the origin of time, without eyes and ears, but with the appetite

of a giant. Confined for centuries in this cavern, it knew nothing, being deprived of intelligence, but endowed with sensitivity, it wept and wept in silence¹⁴."

We sleep inside the animal Darkness every night. At other times, it is starlight, the inordinate beauty of the spheres, the harmony of colors and musics of a marine or a mountain landscape... But all this is too grand, too complex, too overabundant, without any proportion to our minuscule life.

We think that the sower of time who gave billions of years to the tiny grains of sand we trample underfoot is certainly stingy to leave human consciousness a few miserable moments of life in which to do its work. Just enough to be anxious before disappearing... On other days, happy and buoyant, we feel we belong to eternity.

The drama is that, depending on what I think, I feel lost or saved. At twenty, I possessed eternal life. At twenty-five, I had no more than fifty or sixty years to live. At thirty, I didn't know anymore, but I trembled with a happiness I didn't understand. At sixty, I am uncertain *and* confident -- the *and* turned up at forty-three. At eighty, what world will I be in? What will my new lucidity discover? I don't know. I don't even know if this depends on me or on the growing truth which seeks to come out of my mind, stubbornly set against illusion. Perhaps the seed, the sun, and the one who acts is truth, and I am the flowerpot. So many hypotheses can be sketched out, and from so many different ends... While thinking is an act so difficult to sustain.

Here it is, the cosmic drama: I live in a vision of the real that is more or less thought, more or less perceived, and I evolve in this thought without knowing what it will become. But at the same time it is reality that will decide almost everything, the people and things I will encounter, the geography and the moments of history, the hour of my death, etc.. My happiness and my unhappiness depend on my thought, but the concrete materials in which my life unrolls are objective and almost totally independent of my will.

What we see is the world as we think it, while a nearly absolute ignorance envelops the physical ingredients of the drama. Yes, I did choose philosophy at the university, but I chose the university as if I were blind. What would the classrooms be? How would they be heated? Who would be my professors? The other students? All this was part of my choice, but I knew nothing about it. In the end, the premises were very poorly heated, I caught terrible colds, and this made me prefer Nietzsche to Hegel -- before I encountered Meister Eckhart. However, if one of my professors had taught me Carl Spitteler rather than Hegel, Nietzsche would have been completely forgotten.

¹⁴ Rabindranath Tagore, *À quatre voix* (With Four Voices), Paris, Rombaldi, 1961, p. 145.

I chose almost nothing. It was the same when I let myself be seduced by a beautiful young student whom I married. I didn't know that she would abandon her studies a few months later, and I would be a father before I received my bachelor's degree. We choose through possibilities we haven't chosen, and these possibilities hide many others it is impossible to know in advance. All this will form the materials of my life, will decide my body's material destiny, my state of health (who knows in what chemical, bacterial and viral milieu my life will progress), the hour of my death (I choose to go on a trip, but not that the bus falls into a precipice).

Psychologically, however, I live above all in the world as I think it, or rather, and more precisely, I live almost exclusively in the feelings resulting from the fact that what I really think is not the world which carries me off with it in the night. For the same events, one person will be happy, another unhappy. Some, in passing through apparently insurmountable trials, have attained a state of happiness beyond all their hopes. Others are unhappy to the point of suicide in a materially irreproachable environment. Everything depends on how all this is thought.

Psychologically, we live in the world as we think it; physically, we live as we cut out, blindly, the concrete materials of our personal dramas. And these two determinations continually cross in the flow of relations between body and mind. We don't even know when the thoughts which make us happy today will collapse before us like pure illusions. For the psychological side includes its own objectivity: a belief that makes me happy can collapse with the reading of a single paragraph, or by meeting one person, or simply through a reasoning I hadn't foreseen. I reside in a truth which wants to strip itself of all my little quiet and easy thoughts. My invisible roommate always ends up by gaining in light and expansion while I try to repackage everything in my cubbyhole of beliefs.

The river of my own thought carries me away, but I know nothing of its course, I am not its bed of truth which rushes down toward the screaming light of all I do not want to see. The river of my thoughts and feelings rushes down its truth and objectivity that I do not know, for one day it is certainty, the next day purely an illusion. My thought has had the misfortune to think in spite of me! I might imagine that it was merely wandering endlessly in illusion, one illusion replacing another... But this is only one thought among others and it is mistaken, for if truth did not carry me away there would be no illusions. I am almost forced to admit that there is something like a truth of thought which appears independently of the survival instinct or the search for happiness...

But I can't know in advance if this truth is going to delight me or smash me into bits. Sometimes I say to myself: Look! There's a glimmer of hope ahead of me. Sometimes it's just a bubble that has burst upon a rock.

Anxiety drives us to avoid the meeting between thought and reality, and even more widely between consciousness and reality. The greatest misfortune is probably there. For truth works every hour of the day and night each time thought dares do its thinking in the reality of the materials that escape its will. For human

beings, there is only one house that is possible and sure, and it is of glass, an interface. It is itself the link between thought in action and the materials of existence, for it is in this link that truth (the sole stable inhabitant of the cosmos) stretches its light between the stars, and it's a sure bet that it goes somewhere, for if not, why are there flowers and butterflies?

CHAPTER 17 : The personal art of going in circles

If you have ever been present at the birth of a colt, you have probably been astonished to see how the little one manages to stand up and suckle its mother in so short a time. It makes random attempts, but it won't make a fruitless attempt twice. It rapidly eliminates what doesn't get it anywhere and, by trial and errors, there it is, standing up in less than an hour. Similarly, it searches for the nipples, guiding itself roughly by smell, probing everywhere, but never twice at the same place. On the other hand, even a highly educated modern human can repeat a thousand times the same circuit that doesn't work, or that makes her or him suffer.

All who have done psychological counseling have come up against one major difficulty: the redundancy of a chain of behaviors. Aside from exceptional cases of serious trauma, there are not, as one might think, people who have suffered serious shocks with which they find it very difficult to cope and others who, having experienced less painful upheavals, cope with them better. It is not the gravity of the shock that is important, but the ability to make an experience out of it rather than a time bomb. Consciousness, then, would be precisely what prevents us from going around in circles. A "realization" is exactly what stymies the repetition of what doesn't work. The best definition of consciousness: *the art of getting out of closed loops.*

There are several ways of going around in circles. I am going to describe several of them, so as to bring to light some models for better seeing how consciousness goes about freeing itself.

"*The sacred cow*". Let's imagine that I want to travel to a foreign country, but I own a beautiful cow that gives me milk every morning. Thanks to my cow, I am in balance, I have just enough of what I need to stay home with my close friends in a delightful mediocrity. I know very well that for several months my paintings, my poems, my plays and my films are no longer anything more than variations on the same theme, the same idea, the same series of emotions, but I don't have the courage to leave my cow. Since I can't go far away and bring my cow at the same time, I go in circles between the milk she gives me and my dreams, which she is devouring.

Everyone has his or her cow, a bottle that intoxicates us, a friend whose indulgence warms us, a comfort that numbs us, habits we never want to abandon, a way of

traveling that prevents us from truly leaving, a way of thinking that prevents us from truly thinking. The "sacred cow" is an attachment to a situation of balance that is far from being optimal. Something in me knows that I am in the act of aborting my finest creative powers.

A good salary, secure employment, a permanent position become a hell if I am unhappy and timid. For the welfare recipient who is suffocating in her or his poverty, her or his check and the fact that some medical and dental care is free can become a very bitter sacred cow. For the heroin addict, his drug, his daily trip from one injection site to another, the scornful looks, the odors of shame, his network of pushers, his clothing of pain, his illnesses, all this constitutes a horrible trap. For the businessman, his balance sheet, his profits, his limousine, his travels, his laptop, his bodyguards, his grand lifestyle, the fear of a dramatic bankruptcy, rhymes with his bouts of nausea and his kidney stones. For the young man, the family home, the conviction that his parents will support him in case of financial default, his mother's meals, the keys to the car, all this is now his prison. The intellectual relies on his method, the worrier dozes off in his religion, the atheist puffs up with his certainties...

In all these conditions, the wheel turns, and the more it is bathed in oil, the less hold consciousness has on it. It might be said that it falls asleep like a child on the back seat of a car. Sometimes, insidiously, consciousness, still hidden in the darkness, will risk a subtle sabotage, an axe-blow in its treasure, a misfortune to battle boredom...

"*Midas*". As soon as Midas touches a thing, it turns to gold, and as a result he is truly very hungry. So he goes off into every country in search of a substantial meal. He is always going somewhere else. Alas! Everywhere he goes, he finds gold, the same monotonous gold. In the beginning, gold was all he was looking for, at the end gold is all he detests. In the beginning, he changed everything into what he wanted, at the end, he changes everything into what he abhors. Obviously, were he to stop for a moment, he might receive what he needs and is right there in front of him, but for this he would have to give up what he wants and free himself from what he doesn't want. And this he cannot do.

There is the clinging lover: "I know it, she loves me." The lady in question has, however, made her indifference clear to him. In contrast, there is the rejected one, who understands nothing and says to himself: "I know it, she doesn't love me." There is the paranoid who clearly sees that the whole world has it in for him. His eyes change all that he sees into an enemy. His enemies are his gold, don't touch it! There is the misanthropist who can demonstrate to you the meanness of human nature. As proof, he sees only mean men. There is the scientist convinced that he can explain all natural phenomena. It's easy! What he can't explain doesn't exist. There is the economist who measures only "production" and "profits", unable to see even a glimpse of the consequences for nature and society... In all these cases, expectations prevent us from profiting from experience. Vision is selective, just like memory and action.

If prejudices are tenacious, it is because we end up by seeing what we think we see. And sometimes this even does produce the expected result. A man sees his landlord so negatively that he becomes negative toward him. Rumors always tend to get bigger, for no one ever thinks of checking what's behind it. We see as a fact what is shown us. The moralist sees only behaviors that are good or bad, normal or abnormal, according to the composition of his superego. He sees himself in terms of good or evil. The value of beings escapes him. Since a tree is neither good nor evil, he doesn't see it. An ideology is sometimes introduced into the superego, strong through its coherence; the superego no longer sees the real except as a function of its ideology. It can classify everyone including itself in its infallible filing cabinet.

Fashion gets along well with the superego; artistic fashion allows us to evaluate works of art. I can award a literary prize according to my taste or ridicule a text according to my allergies, and why not! In psychology, beings are psychological, in sociology they are sociological, in biology they are biological, in psychiatry, they have mental problems. Midas touches only gold.

This way of going around in circles rests on one of the peculiarities of the human being: what he thinks, he sees, so he adapts to what he sees and thus to what he thinks. But during this time, it may be that his wife, his children, his employees are driven to despair. It may be that works of art touch the sublime. It may be that life's essence is very far from the field of our competence.

"*Yes, but!*". The luggage is at the threshold, prepared for happiness. The taxi honks its horn -- but they don't budge. They hold in their hands an extremely clear list of all the inconveniences of travel, all the discomforts, all the risks. They would like to gain something without losing something; they would like to say yes to an invitation without saying no to the other invitations; they would like to commit themselves without withdrawing from everything else. In their ethical choice, they aim at the truth, but above all they don't want to hurt anyone. They are for a thing, but they are also in agreement with the opposite. They never want to come to a decision. To be wholehearted in anything is not allowed. It is not because they love a new woman that they will leave the first one.

Among them are those who can't do without a double life. The more they practice lofty values, the more they maintain a world that is the reverse of them. If they are very committed, very faithful and very loyal, they will have a mistress to whom they will remain in a state of perpetual non-engagement. If they are on a diet, they will set aside times for eating cake in secret. If someone loves them, knows them and appreciates them, they will keep at a distance so as to never feel encircled, above all by themselves.

"*The complaint!*". This is about exporting the causes to people, events and situations over which you have no power. It is about transferring an alleged guilt to a partner, a boss, a woman you can't stand, a child you can't stand, a stingy landlord... The responsible party is designated, the fault is named, the victim is identifiable, and it isn't possible to do any more, is it? Nevertheless, it appears

crucial not to go into the situation in depth, to systematically exercise the critical mind, but to vent and revent emotion: it's terrible what these irresponsible bosses are doing and you can't do a thing about it! The "you can't do a thing about it" is generally understood. It would be dangerous to emphasize our powerlessness too strongly; this might lead to a subject that above all must not fall into the column of causes: me, the victim (or we, the victims). The complaint endeavors to remain in the state of a repeated ritual during coffee breaks, intermissions, meetings among friends. The one who listens to the complaint must not seek a solution. She or he must be content with listening, sympathizing, or reinforcing the resentment of the "bosses", the "others", the "guilty".

"Inner anarchy". I knew a woman who was in great distress. She wanted to get thinner, a matter of improving her health, but also, it must be said, her self-esteem. For she had gotten to the point of running away from mirrors. It was all set, she had obtained the documentation, had consulted a physician, and knew perfectly what must be done. As soon as the "sentence" was pronounced, she felt like a prisoner: "Who am I to give myself such an order?" She went and bought a big cake and ate it. Her question expressed a neutralization of the will. All that remained after that was to submit to the inner forces as well as the outer ones.

"Fatality". The fatalist does this or that because he or she is this or that. I drink because I am a drunkard. I eat because I am a glutton. I don't sleep because I am an insomniac. We speak sometimes of negative identity. From being called: "dirty thief", "lazy bum", "pervert", etc., we become prisoners of the social identity attributed to us. We are no longer able to distinguish being from behavior. We no longer perceive our zone of freedom.

"The gears of cognitive distortion". In the justifying kind of "cognitive distortions" we conceive of the world as a huge mechanism: there is a certain number of thieves, pedophiles, rapists, swindlers... The missing or faulty pieces must certainly be replaced. "If I don't do that, somebody else will do it." Some are police, others criminals, to each his or her role and all the roles are necessary and equivalent. Each one's business is to occupy a place in the social mechanism. Now, as every bureaucrat knows, the gears of society have nothing to do with morality. Can buying at a better price be described as an immoral act! "The act of smearing a political opponent is not something I invented, I'm only doing the same thing as the others." Economic life obeys the same logic. The terrible vicious circle of debt, for example. I remember a young woman who said to herself: "I deserve that." And she bought it. In order to do this, she went into debt. In the end, she found herself poorer than poor. Did she deserve this poverty? We can also think of the vicious circle of the consumer-worker. The more he consumes, the more he works, the more he works, the more he consumes. In its cage, the squirrel turns the wheel.

There are dozens of ways of going in circles.

At the center of looping systems there is a break that blocks the experience: keep on this side of testing reality, reduce the infinite grandeur of the complexity of things, make a U-turn in the face of difficulty, liquidate every chance of action in advance; isolate the will so as to make it the sole legitimate cause or, on the contrary, liquidate it, deny freedom and condemn ourselves to fate... Obviously, the more we go in circles, the more the consequences of this humming are paralyzing: in this vicious circle, no problem has a solution, no happiness has any existence in the closed world of the trap. Yet the blindness can last a long time and the pains accumulate before the system explodes. Sooner or later, however, the balloon will burst, because reality exists in spite of everything. What we don't see will strike us in the end. Adaptation is the only possible future for consciousness.

There is something indomitable and irreversible in consciousness: when it does see, it can no longer not have seen. Consciousness emerges rarely, but it advances by fits and starts and by notches, like the little mountain trains on their cog tracks. However, there is no inevitability in consciousness. The contribution of will is always necessary. Not that it is useful to want to be conscious, but it is necessary to stop working at remaining unconscious.

CHAPTER 18 : The collective art of going in circles

In *Art and Time*, Jan Patocka emphasizes three movements: taking root, reproduction, and breakthrough. A society more or less cut off from its roots (which no longer knows its history or whose history is no longer anything more than a collection of stereotypes) is no longer capable of a breakthrough (the ability to imagine several different destinies). When the perception of destiny is unified by a religious totalitarianism or a totalitarianism of death (everything is doomed to death), the culture loses its depth. The arts are condemned to celebrate the same god or the same despair; they are no longer politically effective. There is no longer a breakthrough.

In an "economist's" society, when political, economic, moral and ontological inequalities have merged around the obsession with the concentration of capital, the rich are more and more rich, the poor increase in number and in poverty, the machine of financial speculation runs wild, there is no longer any destiny but one: rush faster and faster toward the wall. Such a society is no longer capable of anything more than one single thing: reproduction. They reproduce to infinity the same styles of concentrated production, the same systems of unequal exchange, the same models of energy-hungry transport, the same kind of communication of "news in a nutshell" (information without a chain of thought) and the same vehicles of social reproduction (education, political structures, institutions...). Its final purpose is neither reflected upon nor diversified; it is inevitable. Its sacred cow: profit, a sealed word which no longer lets any question penetrate (profitable for what? to whom?). The price to pay: the suffering of the poorest and the destruction of the environment.

In such a society, individuals are trapped. Their place of residence, their domicile, their schedule, the time accorded their children, their work, their diet, their leisure, their sleep, the pharmacological products they need to sleep or stay awake, all this follows a determined course. To be sure, they have a choice between different traps, different ball bearings, different predetermined courses, but they are always hooked on cogwheels of reward, consumption and socialization which confirm them in their normality and thus in their "morality". They are generally normal, respond normally to advertising, obey the laws normally, use the normal means of transportation, of communication... In consequence, the machine works like a dream and the ecological disasters pile up. Everyone has a good conscience, because it doesn't even appear possible to do otherwise.

Fortunately, from time to time, in their own lives or in those close to them, a sacred cow dies (unemployment, bankruptcy, depression, illness, a failed marriage...). Then some questions arise: what am I doing there? What good is it? In what kind of world am I? If they don't fall into a religious sect that starts them rolling again in a regular routine, they can find themselves free at last and faced with different destinies.

Industry is a formidable means of reproduction. Its final end is to facilitate the reproduction of "goods" and "services". It has to do with reproducing the same result at lesser cost. But the ecological costs are all the greater for not being included in the profit equation. Several industrial "goods" are simply mechanisms for reproduction: the internal combustion engine, assembly-line machines, Fordism or the Toyota method of organizing work... Society becomes a simple state of reproduction that destroys all forms of rootedness (to the earth, to culture, to history...) and all forms of breakthrough (attempt to get out of the system).

No sooner does Midas touch a thing than it changes into gold, and as a result the unhappy man ends up being very hungry. The human being's deeply essential needs -- the need to be recognized for what she or he is, the affective needs, the needs of the senses -- are in an alarming state of deficiency. But everything a citizen touches is changed into gold, that is to say into consumer "goods". Then as many consumer "goods" pile up as indebtedness allows, and that's a lot. The human being dies from the inside, more and more incapable of perceiving his or her real needs. To hold on psychologically becomes an exploit. According to the 2012 statistics, the French take two hundred million boxes of psychotropic drugs each year (not including illegal drugs).

Socially, the most widespread cognitive distortion is no doubt the "survival of the fittest", which is supposedly inscribed in nature and which, applied to the economy, is called the "law of the market". This justifies almost the whole social, political and economic show. Has this pseudo-Darwinism been validated from a scientific point of view? In reality, we are dealing with a tautology since the "fittest" is identified with whoever is found at the top of the pyramid of inequalities. However, in reality the law of the survival of the fittest so weakens a

group that it is nearly impossible for the latter to successfully complete a demanding project when it succumbs to this law.

The *lex talionis* ("Eye for an eye, tooth for a tooth") is presented as the inevitable corollary of the law of the survival of the fittest. If people die in a lost battle, their death has no meaning. To give a meaning to these deaths, it is necessary to return to the fight until you win. For the only death that has a meaning is the one that makes victory possible. Only the continuation of the war can, then, give a (retroactive) meaning to the victims' sacrifice and this meaning is accessible only to the victors. Now, there is no war without losers, so the meaning of the winners' death (glorious death) is taken from the meaning of the losers' death (absurd death). The loser can do nothing more than will to win, even if it means sacrificing everything. Tragic perpetual war.

Religion, inasmuch as it is a political instrument, aims at reproduction also. To be sure, at the birth of a religion, there are almost always subversive values such as the equality of persons, their ontological value, equal access to hope for a survival after death, equal power to achieve wisdom or sainthood, the right and even the duty to obey one's conscience... But as soon as it is institutionalized, religion transforms these values into rituals, which shortcircuits their power for social change. Justice is praised in a church where the rich occupy the best places. In short, the institution of religion diverts toward the abstract the transformative energies of a society. To feel injustice is sufficient; action is no longer an option. Even charity becomes a way of promoting wealth rather than fighting poverty. Religion is an almost indispensable instrument for the perpetuation of the "law of the survival of the fittest". The power of its symbolic actions is enormous. As he comes out of the Church, the practicing Christian believes he really does love his neighbor, even as he sells him bread at twice the price.

If by mischance one of the "faithful" wants to put a subversive value into practice, she or he is immediately called a heretic (she or he betrays the religion by transforming it into action). For example, Gandhi "de-ritualized" detachment to make of it a principle of action: passive resistance. He paid the price for it.

If by mischance a woman or a man passes beyond the ritual, makes a "breakthrough", arrives at an active coherence, and accumulates too much influence to be simply banished or executed, it is necessary to reclaim their advance, as pope Innocent III did so well with Francis of Assisi's values of universal love.

Religion can survive socially only if it correctly exercises its function of cultural neutralization of the subversive values coming from the breakthroughs of consciousness of people like Jesus, Buddha, Francis of Assisi, Gandhi... A religion which would leave ritual behind and enter into coherent action would be politically eliminated. This is the case, for example, with liberation theology's spiritual current.

In the face of such forces of reproduction, the temptation to abnegate becomes general. Nihilism surpasses ritualization in its generalization: above all things, men, nature and cultures, above the law of the survival of the fittest, there is the great chaos of reality: the absurd. All morality is meaningless, death reigns, we will all end up, we and the stars, in the great emptiness of space-time. The most courageous have the right to their limited revolt, their little stage-play, their tragic moment that the centuries will wear away and pour into oblivion.

CHAPTER 19 : Anomie

The superego structures the human being as long as needed for his or her emancipation, his or her second birth, that of the self, the product of consciousness and the presence of the world. We can be critical of the superego, but how can we do without it? When it is present, it draws us into the social drama; wars and the overexploitation of nature ensue from this. But when it is emptied of its substance, it is almost worse, the population turns against itself and commits suicide in every manner: drugs, alcohol, eating disorders, depression, hanging, firearms.

A culture is like a river: through the part of it that lives, it stimulates life and the second birth, it feeds the birds that will later want to fly far away; through its static part, its rocks and stony bed sculpt the water's course, leading the still-sleeping beings downstream, below all the mountains. It is the rigid and structured bed we will speak of here, because this is what is at issue in anomie, this is what constitutes the collective coherent superego.

In its confrontation with reality (human interiority and the exteriority of phenomena), culture has gradually put a coherence into place, an efficacy, a metaphysics, a system of beliefs, a mythology, practices, rituals which tightly surround and give meaning to moral values. And this is something. We aren't speaking here of logical coherence, but of coherence constructed between the dimensions of experience. In a real culture, a culture which has time behind it, history, geography, religion, psychology, physics, biology, all the domains of experience are intertwined and give an extraordinary depth and richness to each idea. For example, the idea of love becomes infinitely rich, for even the cosmos is seen as an act of love. All this is deposited in the river's bed and solidly attached and, thanks to this static condition, tradition brings a security to beings whose self remains in opinion and non-thought.

Such a tradition is extraordinarily effective. Dangerous also. If it ever closes on itself, loses its footing in the face of reality, it can crystallize, justify itself, swell with pride and eradicate millions of "savages", as in America, or millions of Jews, as in Nazi Germany, or eliminate the largest tropical forest, as in Brazil. It is a double-edged weapon: rigid, it kills, but if it is completely dulled, the rate of suicide is multiplied. Its collapse, when experienced, is anomie.

In traditional cultures, "modernity" is defined as a rupture of time, a split with the past to encourage the best adaptations. We encounter it under different forms in every age. It is a dimension of culture that permits risky leaps. However, if it closes on itself, if it becomes an end in itself, it isolates itself from the past and future and loses its footing.

After the industrial era, modernity has, in our societies, become the system of dispersion essential for the functioning of market totalitarianism (in which exchange values take precedence over moral values and above all over ontological values). It is a unique phenomenon. Even science is in the process of marginalization as it merges with a technology that itself is no longer anything more than a means of increasing productivity. Cinema, music, painting, nearly all the arts are drowned in the entertainment market. In reality, what it is about here it is no longer a dimension of culture necessary for its life, but a system aiming to substitute itself for culture in order to ensure that it never again takes root.

Why stop all these possibilities for taking root? For one very simple reason: whatever the culture and however totalitarian it may be, it includes finalities which combat each other and balance each other, at least partially; market totalitarianism, on the other hand, eradicates all finalities by making means the only finality. Here we are approaching anomie: the state of a society characterized by a disintegration of the norms which regulate the conduct of human beings and ensure the social order.

As soon as a real culture (a culture that has taken the time to produce itself) loses its instruments of "coherence" which are its mythology, its religion, its cosmology and above all its metaphysics, that is to say as soon as the physical and spiritual worlds are detached from each other, it suffers from a nearly irreversible illness. It is no longer anything more than a pile of moral values. There is no longer anything binding it. The superego no longer gives meaning, only imperatives and prohibitions. It collapses like a civil code without love of neighbor, or like a charter of the rights of the person in a population that has lost the sense of responsibilities. Everyone loses her or his own vitality, like a branch cut from the tree. But this rupture can be the preamble to a direct rooting of persons in their own nucleus and in the raw reality of things.

Anomie is not the result of a break with culture, but of a break with one dimension of culture, that which serves to regularize behaviors and reproduce the society (the static part of closed values). In a true culture, there are certainly other things, for example great works of art and literature, the result of the birth of true selves. The great works are there precisely to guide us out of the uterus of the culture of maintaining.

In recent history, we find two kinds of death throes for this dimension of culture that we might call the collective coherent superego. First, if we look at peoples described as animists or as primitive, they have been smashed against societies founded on domination, principally the European societies. After nearly complete genocides, we meet with resisters in the Americas, in Australia, or elsewhere. They

are lost in the scraps of their old culture, now become folklore, entangled in pieces of poorly digested Christian culture, while irruptions of modernity tear their television screens, infiltrate their mobile phones and the myriad means of entertainment necessary for the functioning of market societies. The incoherence of the clusters of values floating in the void permits no salvation through conformity to rules (completely incoherent in any case). They are like wandering minds. But those who manage to take root in themselves and in reality come out of it as extraordinary heroes.

Secondly, there are those who are completely lost in the totalitarian market society. Their restless wandering is particularly tragic because the machine their anxiety turns is unbelievably heavy. They must get up very early, wake their six-month-old baby, go out and carry the whole herd of children to the day-care center, go to work in deafening traffic, follow the news, sacrifice the best of their intelligence in predetermined processes, eat hurriedly, do errands, return to work, return home in the evening smog, pick up their children at the daycare and confront their serious emotional lack, manage the family chaos until the children are exhausted, watch a movie to forget the day, swallow some pills and finally sleep.

But anomie does not result solely from the collapse of a "coherence" of values that give meaning. If it were only that, there would be only restless wandering, not infernal anguish and the feeling of unbearable emptiness. Anomie comes from the fact that consciousness stays awake, and that the wandering being sees himself turning, with difficulty but uselessly, round and round and round. It is out of pity that he commits suicide or decides to change the world.

When we enter into contact with an anomic group, for example a group of young people who, through an inability to name their emotions (for lack of language) run the gamut of drugs and sex deviations, we are surprised to see that there are not more suicides. We sense that they are always on the point of vomiting, of vomiting us, we the generation that has failed in its duty to protect them from anomie at least for the time required for the maturing of a more coherent self. If they had had just the minimum to put between their teeth... They can't even fight their parents, they pity them. In anomie, the art of going around in circles has become a desperate restless nocturnal wandering.

The rupture is as follows: after the terrible wars of the twentieth century, the extermination camps, the two atomic bombs on Japan, the massacres and tortures linked to the cold war, after all this blood and this madness, the Western cultures had lost all credibility. After the gulags, the famines which followed the Russian and Chinese agrarian reforms, the repression of dissidence and the cultural oppression, Marxist atheism also lost all credibility. Religious or atheist, the two worlds revealed themselves to be just as unable to meet the challenge of power in societies where weapons and industry have become technologically superpowerful.

As much in the West as in China or India, we don't manage to reach a decision about the extreme ecological risk towards which we are advancing. As if we had suddenly realized that, whatever the cultures, the dominant ones in particular, none

had seen the ecological drama coming and none was up to confronting it. In any case, none (except the cultures called primitive perhaps) has the slightest legitimacy in the face of a consciousness free of illusions. Anomie is now a worldwide phenomenon. But, and that's just it, if there is anomie, and thus unease and extreme unease, it is because consciousness has not yet loosed its hold. In the vertigo between the hoped-for and the facts, the soul experiences a nausea sometimes fatal, sometimes salutary: a tragic opportunity for a second birth, person by person, small group by small group, until the formation of a new worldwide culture able to confront reality.

Let's go back a little. Consciousness confronts the superego, the infantile reactions, the familial drama, the social drama, the different ways of going in circles and reproducing roads that lead nowhere, as well as the anomie of cultures in ruins. In the face of this, stimulated or stirred by the obstacle, it forges wings, and in the heavy air, takes flight through breakthroughs, personal or microcollective. It never yields. Even when it leads to suicide, that suicide is still an act of desperate hope.

Returning to the different ways of going in circles or the wanderings of anomie, they are always about an attempt to "disconnect" consciousness from reality (the place where consequences come back and hit us square in the face). To go in circles, the wheel has to stop touching the ground, for as soon as it touches reality, there is a learning and experience breaks through.

The wheel will remain disconnected from reality, we will be restlessly wandering, as long as we stay on this side of the test of reality, and we will see only instrument panels, statistics and schematic representations; we will reduce the infinite grandeur of the complexity of things, and we will blind ourselves to all that surpasses our instruments of perception and representation; we will uproot consciousness and absorb its powers of action into economic reproduction (work and consumption); we will divert consciousness into religious or aesthetic abstraction, then drugs; we will encourage the failure to take responsibility by transforming problems into social and economic "laws", we will sequester the great works in libraries that will become inaccessible behind the rampart of news and superficial soulless entertainment; we will destroy every reflex of thinking, reflecting, and feeling by directly liquidating the ability to read the great works.

The economic wheel destroys the human being as well as the environment. The social wheel feeds the economic wheel. The political wheel protects the economic wheel (because it depends on it because of its very high level of debt). Everything is well set up to crash against the wall. Luckily, this pessimistic vision only carries the big numbers with it and doesn't rely on reality. We can see things differently. Consciousness is not ejectable. Reality is objectively there and reacts to human behaviors. In the real world, there are real consequences. In the real human being, there is an immortal consciousness. Now nothing can break the link between consciousness and reality.

This is what we must not only show, but also put into action.

CHAPTER 20 : Body and Soul

We have seen up till now that consciousness, which forms the nucleus of the self, begins by acquiring value in the eyes of others and in its own eyes. It does not yet have to do with moral values, but rather with ontological values which answer the question: what am I worth? The bonds of attachment and then the social bonds form the relationships into which consciousness pumps its own ontological value through the consciousness of other persons, the parents first and then others. It thus acquires a feeling of being which seems to depend much more on the value of its person than on the matter of its body.

Strengthened by this acquisition, the nucleus of the self becomes a donor of values. The more faithful and consistent it is in giving to others (and even to all living beings) the ontological values it grants, the more it develops. Then the desire for truth appears (the search for lucidity). As truth gains ground, the nucleus of the self discovers its universal relations and it goes out to meet those like it and even those who are unlike it. In short, through ontological value it arrives at the two great driving forces of ethics: truth (or lucidity) and love (or justice).

The nucleus of the self should logically be incorruptible, for if not we would come up against the paradox of an absolute determinism. An absolute determinism does in fact eliminate creative intelligence, will and action at one fell swoop, and it is no longer possible even to know that we are determined. Now, even the most radical determinism remains a "determined" knowledge, since it is a philosophical hypothesis. The nucleus of the self is by definition the minuscule incorruptible point starting from which we can escape absolute determination and acquire the drop of freedom necessary for our humanity¹⁵. It struggles against all identification that would confine it. Its unique quality consists precisely in struggling against all attempts to close an image in on itself. Consciousness appears truly to be a dilator of the self.

Armed with its incorruptibility, its ontological values and its ethical values of truth and love, the self attempts to follow the road of freedom and participative creation. But it must fight. In the first place against the superego which from its youngest age was introduced into it through socialization. The moral and normal values are anchored in a guilt-inducing memory: disparaging, punitive or unctuous phrases and somatic attacks. It must sort out and relearn what is valid in the

¹⁵ However, in extreme cases it is possible for the very young infant to not receive enough value and care to survive.

superego. This supposes the passage from guilt (turned on the past) to responsibility (turned on the future).

In the second place, to fight against the social structure itself with its processes of selection, organization into hierarchies, and exclusion, where ontological values are linked to obedience to social norms and to models of identification. It can "unenlist" and become an agent of social transformation rather than of social reproduction, but the price to pay will be high.

In the third place, against infantile reactions (complex of behaviors and emotions) it has acquired in its childhood, its adolescence and sometimes even later. It is often invaded by these reactions which try to take the place of the self. They are a memory that is active and above all reactive.

In the fourth place, against a tendency to reproduce its familial drama, to constantly relive the struggle between the superego and the infantile reactions.

In the fifth place, against a social drama which has at its disposal all the means of dissuasion, reward and manipulation capable of subjecting the person to a role of production and consumption.

In the sixth place, against the mental, organizational and institutional structures whose function is to make it go in circles so as to keep intact the social reproduction of a system highly advantageous for some.

Finally, it must defend itself against anomie and the feeling of emptiness linked to cultures that have lost all credibility.

In reality, and more radically, the nucleus of the self remains in the presence of a cosmic drama which depends on how it thinks, yet includes its objectivity. For example, death is an irrevocable objective fact, but what touches us to the highest degree every day is an idea of death. Trees remain mysterious and touch us directly through their chemical messages, their smells, their humidity and their power to affect climate, but we manage forests according to our idea of trees¹⁶. The more the nucleus of the self discovers its freedom and its creativity despite this context of oppression, the more it acts consistent with itself, the more there takes form around it a true self, highly personal and yet at the same time inclusive of all beings. This self has nothing mean about it; on the contrary, its desire for lucidity and justice leads it to experience the fact that others form their own beings as much as it does. It is in this tension between it as a center in development and it as an inclusive circle that it will develop its soul.

But what exactly is the soul?

¹⁶ This is the whole meaning of the great works of Maurice Maeterlinck, for example, *L'oiseau bleu* (The Blue Bird), Paris, Rombaldi, 1961, and also: *La vie des abeilles* (The Life of Bees), Angoulême, Abeille et Castor, 2009.

When we speak of the soul and the body, our imagination is almost always rooted in the dualistic Greek tradition: the body is matter, the soul, spirit. We forget that other traditions, and particularly the Hebrews, have given birth not to a dualism, but to a monism, a single reality able to appear in several states as water can appear in the solid state, the liquid state or the gaseous state.

There are words which relate neither to a thing, nor an action, but to a relationship. Among the relationships there are relationships of interrogation. The word "soul" and the word "body" relate to a relationship of interrogation. *Inter-rogation*, what happens between two "rogations", between two states of harmony (a little like crystallized water is a state of harmony different from liquid water). But what *inter-rogation* is it about? For in the end, if there were only harmony of the body or if there were only harmony of the soul, there would probably be no question. However, there is the body-soul relationship and this relationship is manifested in the form of questions. What kind of questions are we dealing with?

This question about questions is important, for it has always been supposed that consciousness is precisely the faculty of questioning (while intelligence was supposed to be the faculty of answers). Consciousness could then be the soul-body relationship inasmuch as this relationship is not set within a dualism, but in a dialogue between two states of the same reality.

Let us imagine that we are members of a primitive Nordic tribe. Winter has arrived. A particularly frigid night has passed, and two babies have died of the cold. Heartbreaking cries and lamentations are heard. Nature is too cruel. We do not accept it. Cries of revolt. How is this possible? The revolt is surprising. The break in harmony is surprising. Man and nature really should accept each other without breaks in harmony, without question, like the ice melts in the sun, like the wave rolls on the beach, like the caribou exhausted by its flight falls before the wolf-pack.

The disagreement of humans and nature is a mystery. We find nature beautiful. This is not surprising, we come from her, she is our mother. The baby toad finds its Mama toad very beautiful. This is self-evident. It should be the same regarding the good, or well-being, if you like. We ought to find nature good just as we find it beautiful. This would not remove suffering, but this would make revolt against nature impossible. Apparently we are the only animal able to rebel. The human being, who is a fact of nature, ought to take nature for a fact. On the contrary, since he or she sees it from the outside, like a "manager", he or she judges it. The aesthetic verdict: bravo! The moral verdict: down with it! Such is the paradoxical position of the human being. And this is so amazing that the cultures of East and West, of North and South devote the bulk of their literature to stating this paradox (aesthetic-ethical) and seeking answers for it. The world is so beautiful, but it is not just, it is even cruel. How is this judgement possible?

The human being is above all an out-of-tune animal. We feel that nature could have been different on the ethical plane (the well-being of individuals and

collectivities). We make another idea of good for ourselves so different from hers that we ask ourselves if she even has an idea on this subject! The interrogation comes from a break in the harmony; the body follows the movement of things, but something in us doesn't follow it, something in us imagines another movement.

This surprising disagreement is culturally explained by a sort of active creative imagination ready to rival nature on the plane of the good. This thing is amazing, to say the least. If suddenly, right in the middle of a piece of music, one note turned up its nose at the other notes in order to express its disagreement with the piece of music, this would be astounding. "That note is not a note," we would say, "but the deed of a composer who doesn't much like the music in which he is engaged." We are through one side a note of music (a creature among the creatures), but through another side a musician (at least potentially).

If steam is the soul and ice, the body, steam is a state of water which has the property of standing above ice. Steam, to be sure, is nothing other than ice "excited" by heat, but in the expansion the steam has taken something has manifested itself: the point of view of an "informant" on information, the point of view of a reassessment of the information. The steam is asking if the ice is behaving as it should, is obeying a "good" information (information: that which gives a form). We feel as if the baby, who accepted everything as a simple fact, has left her or his infantile unconsciousness behind and has begun to see that things could have been otherwise. It is this that the word "soul" attempts to encompass: we who apparently are creatures have at our disposal a rival creative faculty, we are meta-creatures, creator minds, participants.

A second subject of surprise is that this revolt against nature doesn't show itself just when we are personally concerned: we are often moved by misfortunes and injustices that don't concern us as individuals, but touch any human, and even animals or plants. More than that, in its profoundest depths, consciousness feels itself as much concerned with the happiness of others as with its own happiness.

To honor this revolt, universal in principle, we have at our disposal a faculty capable of supporting our judgments, of an imaginary space where we can invent a more just world (according to our opinion). Alas! The result of our actions in the concrete world is much less convincing. We are better critics than people of action. Moreover, we are very often in disagreement with our own actions. We judge ourselves from on high! No matter that we are endowed with a morally creative faculty. It seems that, at least in an animal species, nature, instead of producing a natural being, has produced a rival that is not entirely in agreement with her. If nature, apparently, doesn't care about suffering and individual death, we do. Consciousness is a word that relates to this faculty. It is the universal (and not general) point of view of a moral creator.

As the nucleus of the self is activated, it develops a crucible, a sounding board able to feel, by envelopment, others as its own. The soul resembles a circle: in the middle, consciousness, the nucleus of the self. From there, the creative and

developmental activity of the self radiates, gives beings value, uses all its faculties to understand the flashes that illuminate it and act faithfully in response to them. Around it develops, question by question, a critical distance, a judgement, an increasingly complex feeling of responsibility, of participation, of empathy. In this space where the lack of all that should be (desire) and the plenitude of the presence of all beings are felt simultaneously, anxiety and trust overlap.

If the soul is a moral intelligence at the same time critical and enveloping, then what is the body? First of all, we must take note that the body understands itself only through the soul and not the reverse. People will tell me that the body is what I see, what I touch, what makes its presence felt through its solidity. It is exactly this that demonstrates that the body is the object of "I see", of "I touch", of "I feel" and of "I think". People will say to me: but the body is material! So, what is matter? People will tell me that matter is an inseparable combination of energy and information capable of complex interactions with itself. This is, for the moment, the best definition of matter that the thought (the soul) of science has succeeded in giving.. One detail, however. This definition is precisely the one always given to the word "mind"...

But my interlocutors will get angry all the same: "There surely is something that is not inside my thought: the proof, yesterday a bicycle struck me head on at the moment when, in my walk, I was thinking of something else. Something escapes my thoughts at least in part, doesn't follow their thread, strikes me and will even kill me." There it is, a pretty good definition of a material body, a definition inseparable from the soul. The body returns the soul to the place where everyone lives in a progressive formula that requires death.

We can make an immediate application of it. Let's imagine that I perfect a system of equations following a coherent theory and that I attempt to apply these equations to a material body. How will I know if I am really experiencing a material body or if I am doing a simple thought-experiment? If the experiment refutes at least part of my theory, I will know that I have experienced a material body, the experience of the "other", of the soul, an other, however, who is not substantially other since I can think him or her with an increasing accuracy. This is the basis of the scientific method.

When we are in a pure tautological relationship (soul-soul or body-body) everything goes well, everything turns, nothing contradicts our idea, we are in full certitude. When we are in a soul-body relationship, there are questions, experiences, and the idea and the feeling are never quiet; on the contrary there is always something that doesn't go. The soul-body relationship is not a relationship between two "substances" of a different nature, it is a relationship which creates two poles, the "soul" pole which questions, feels, seeks, and the body pole which participates in its action but also acts directly. These two poles cannot be two substances different in nature, for then there would be no relationship. This tension supposes a common link.

What is primary is the equivocal and competing relationship between two creativities which should in principle be harmonized. Water and steam should agree on the same laws, but steam calls these laws into question when it comes up against the ice. On the ethical plane, the internal logic of nature is not entirely the same as the internal logic of consciousness. We feel as if both of them are pursuing different finalities, to the point of asking if nature herself pursues finalities. Soul and body is a convenient distinction for showing a rivalry between two coherences, two partially divergent logics.

The experience the soul has of material bodies, even if it is an experience of resistance, is nothing like the resistance of a wall, of an obstacle. When physicists try to understand matter, they always test something that has its laws, something that is in relation with itself according to its own logic, a logic which nonetheless can be discovered by the soul, at least in part. Yes, "matter" is what resists us, but a little like an alter ego. This resembles a game. We try to guess the dynamics of the other. By trial and error, we advance; but we never get there completely. There are divergences. Here is one: while we elaborate theories and make them evolve in order to bring us closer to the coherence of nature, there is every reason to believe that nature changes its laws solely to adjust to us. In short, we are making efforts to understand nature, but it doesn't seem to want to understand us (or in any case, adapt itself to what we think are our needs). Nature seems to be playing its game without attending to our feelings. While nature is subject to information, the soul attempts to know and discuss the information. The soul is an actor in the game.

Let's come to our body. It too resembles an alter ego. Let's take, for example, our everyday attempts to respond to hunger. We try to decode our body's needs. We receive an impressive complexity of differentiated signals. We interpret, and we notice rather quickly that it's not so easy to come to agreement. The body will return to us messages of the kind: not enough calories, not enough protein, too much protein, lack of vitamins, too many vitamins... To improve the harmony between hunger and the response to it, experience and an amazing amount of knowledge must be acquired.

What complicates our understanding is that our body has been raised by people who think differently than it. It has been raised by parents, teachers, advertising in all its forms, books, movies... The body has been raised in a culture and by persons who have thought for it. Unlike the stars and the mountains, the body is equipped with an aptitude for psychosocial learning. And it learns from everything, but not much directly from the soul (such as we have defined it). As a result, from the soul's point of view, the body's signals are like radio waves jammed by thousands of commercials. The body is strongly conditioned. To succeed in receiving the basic signal, in filtering out the "commercials", a rather difficult road must be followed, a double road, in fact, one very subjective: listening to the body's complex signals (which supposes an unlearning of conditionings), the other more objective: the science of the human body (in our example's case: the science of diet).

The soul has absolutely no need to struggle against the body, but it must constantly struggle against the conditionings, particularly those that are inscribed in the body. Among them: the fear of death. The soul, it is said, rebels against death. But it is not the body's death it finds appalling. It has accepted this from the start. For the body, death is an instrument for the evolution of species. The problem is somewhere else. In fact, if the evolution of species is an evolution, it is because it has produced a particularly supple mode of adaptation: consciousness, intelligence, imagination, the soul. The soul appears, then, in the column of evolution's "results". In this respect, why would life turn against a result that functions?

What shocks us is actually the death of the soul. For if consciousness dies, the cosmos is a sort of evolution machine that destroys its end products (while it ought to surpass them). This is an unforgivable "error", for it makes the cosmos absurd. This is why most traditions have preferred to postulate the continuity of consciousness in the soul. This was not a petty reasoning, but a universal vision. For if consciousness is killed in one being at a time, it is destroyed in nature itself. Now, it is consciousness that gives life meaning and it is what permits the greatest participation of life in its own evolution.

The soul lives directly atop the relational uncertainty between, on the one hand, a gift of ontological value which hopes for the well-being and continuity of conscious beings and, on the other hand, a nature which seems to award no value to individuals, conscious or not, as if the species alone were important. It is in this tension of consciousness that its questions are born, its desires, its feelings, its anxieties, its hopes, and its very strong power of envelopment which allows it to contain everything as being its own.

CHAPTER 21 : The weight of beliefs

Consciousness and subsequently the soul seek a way to freedom in order to arrive at a creative participation. It might be said to be a starving mouse in a labyrinth who must obtain food for the soul: always more creative possibilities, great windows, oceans. It flees the mean and the narrow, it runs toward the open. It wants the new and not a copy, it wants a breakthrough and not imprisonment. A hole of light rather than a nook of comfort. It doesn't resist its drive.

Each of us is plunged into a different labyrinth made up of the superego, infantile reactions, and mechanisms of social reproduction. My labyrinth was not easier or more difficult than someone else's. I was eighteen and paralyzed before a dying woman: my mother. It was a missed encounter, a burden. And since it was the last encounter, it was difficult for me to bear. I received her inheritance, however, without my knowing it. What inheritance? Maman surrendered herself to death in total confidence like a tiny baby to its mother's breast.

It was no small inheritance! The weight has been not this inheritance, but my inability to tell her of my gratitude at that moment.

We are like connected vessels and, if nothing goes out, then nothing comes in. And since nothing came out of my mouth, nothing went into my ears. It was a deferred mourning. It was much later that I retroactively welcomed her forgiveness. For a mother's forgiveness arrives long before the sin. It is a credit. When I cashed in my forgiveness, then I could say thank you, and it is when I said thank you that I really profited from the inheritance I had received. Since that time, life is precious to me, for I "saw" that something in life confronts death with confidence. That "sight" has been called consciousness. It is not a science of the beyond, the science of another world; on the contrary it is the feeling that the thread of time is unbreakable because there is no other thread. The thread of time and the thread of consciousness are one and the same thread.

For some years I believed that my life had been difficult because my parents were poor and lived in a violent part of Montreal, because I was dyslexic and because I was sexually assaulted and ridiculed during my first years at school. I was wrong. These little problems had simply prompted my determination to live.

What was hard to bear was not the blows of life that strengthened me, but the love that continually put me back into life. The fact that I was loved completely, freely, with no regard for my awkwardness, my pathological timidity, my closing in on myself and my visceral rebellion against injustice, this fact, this love continually put me back into the world while the world was dealing me blows. I was made of love, and love remade me. Had I not been loved, the blows would have killed me and I wouldn't be talking about them today.

It was an affront, this too-great love, because I didn't love myself. However, when finally the tears came and slid down my cheeks this was all this love needed to enter me. They were tears of compassion for the child and the adolescent I had been. To tell the truth, they were my mother's tears coming out of my own eyes, and this left a place for happiness to live.

We are connected vessels. This is difficult to acknowledge and accept, but true. Love and unhappiness, death and life, we and our mothers, all these fluids circulate in our physical and moral plumbing. Our inner rivers link springs to oceans. We must take due note of this. For the goal of life is not to regulate our rivers, or even to reach the ocean, but to continually start out from the source to recreate the world. It is on this road that obstacles arise. It is better not to confuse source with ocean, for between the two there is all of light's work and the sun's. This is what spiritual life is: following the rivers so as to reach the ocean in order to be absorbed and reconstituted by the light and in this way return to the source and participate again in creation. Our rivers are carved by our beliefs, but consciousness wants to return to the open sea and through it reconquer a new participation.

All of us know that at times life strikes us very hard. The shock can eject us from our beliefs and for a while we are totally at a loss. For example, the death of a child explodes the illusion that the world can be just. Our values are radically overturned. Looking at it more closely, however, it is not chaos that has arrived with this death, nor the disorganization of emotions; to tell the truth, something really fundamental has come to "reset our compass", to make us enter more physically into life. Something wants to make us more fraternal, more united, truer, and above all better able to love across our beliefs, in spite of them or beyond them, something that we today call spiritual life, the ability to be naked and ashamed on the edge of the abyss, but with eyes wet and heart embracing those beside us. Beliefs are like an eggshell. They protect us for a while, help us to develop inside a little circle. But we must break what has served us if we want to grow.

Spiritual life is not a set of answers, but an attitude in the face of an absence of answers. Near where I live, in Bic, there is a hundred-meter cliff that looks directly over the sea. Peregrine falcons nest there. For a falcon, to dive into space, open its wings and dance in the wind, is natural. But were we to attach a considerable weight to its neck, it would remain on the cliff's edge, frightened by the height. It would abandon the appeal of the open spaces and crawl in the underbrush, forced to follow the little trails used by foxes. What a short while ago attracted it frightens it now. The poor bird no longer goes according to its nature, but in the opposite direction, crushed by the weight. The human soul, for its part, is made for the abyss like the bird is made for the open spaces. Its spiritual nature is to be able to abandon itself to them, beyond its beliefs.

The crucial question of a human existence is this one: what prevents me from leaping into the abyss with as much confidence as a falcon dives into space? Weight. This weight changes the nature of the human being. Someone who enjoys crossing the boundary of his beliefs in order to experience brotherhood too often imprisons himself in those beliefs out of fear because a weight crushes him. Once he is imprisoned in his beliefs, it is war or submission, the rebellious child or the submissive child. But what weight are we carrying? What weight destroys our confidence to the point of inhibiting our capacity for brotherhood?

In his famous book, *The Two Sources of Morality and Religion*, Henri Bergson demonstrates that man, faced with the uncertainty of mortal life, is naturally anxious. When he denies this anxiety, he accumulates a set of beliefs to reassure himself. This is the weight: a set of reassuring beliefs. Alas! The more beliefs one has, the more weighted-down one is, the more afraid of the abyss one is, and the more one entrenches oneself in beliefs that become dogmas, that turn against others, against nature and above all against oneself. It is a terrible fate.

The root of the word "confidence", *fiance*, has also given us the word "faith"*. To live in faith is to live in confidence, thus not to have weight, not to be tied to such and such a belief, not even that of not having any beliefs. In other words, and this is Bergson's conclusion: faith is inversely proportional to beliefs; a true friend is someone who listens, smiles, and passes through all beliefs because he or she is full

of faith, weightless, a happy traveler in the abysses. And it is this no doubt that must be named consciousness. Consciousness is the bird who knows that it can fly, who knows its true nature.

Faith (*fiance*) is the child who dares to take her first steps without being altogether sure of herself, because she wants to meet her mother. Faith is the girl who lends herself to her lover's caresses. Betrayal is possible, but without confidence life itself is impossible. Faith is an experience. Belief - for example, to believe in extraterrestrials, in a certain view of reincarnation, in a certain view of resurrection, to believe that death is a full stop - is most often a habit, a submission we cling to, a submission we have chosen and don't want challenged. It can be a choice that is apparently logical, probabilistic, rational, irrational, stubborn or traditional, but it is not an experience, it is a decision or an absence of decision, arbitrary most of the time and reflecting a particular culture, a moment in history, an opinion more or less reflected upon. Beliefs belong to the superego. The child in relation to her mother, the girl in relation to her lover have felt the truth of love, for if not, their lives are not an act of faith, but a superstitious belief.

Faith is neither naïveté nor a retreat into childhood out of fear of reality. It is defined as a search for truth in experience, while the accumulation of beliefs forms an ideology, which tends to close itself to the call of truth. If we compare faith and belief, we might say: in faith we tend toward the truth, in belief, we defend our truth; in faith we call ourselves into question, in belief we call others into question; in faith we develop through and in doubt, in belief, we reject doubt; faith integrates the stranger, belief excludes her or him.

A system of beliefs is an art of going in circles. We must never forget the terrible murderous mass insanities of the wars of religion nor of the wars against a religion. In his masterpiece, *Writing or Life*, Jorge Semprun, who survived the concentration camps, asks André Malraux's fundamental question: "Where is that crucial region of the soul where absolute evil opposes brotherhood?" For Germany, a civilized country if there ever was one, entered a horrific collective madness that cost the lives of more than forty million direct victims of the war, of more than seven million women, children and men dehumanized and massacred like dogs in concentration camps. And we find this radical evil in every century, sometimes several times in one century, and in all kinds of contexts. The quantity of terror, of horror, of inhumanity, does not seem to depend only on the modernity of the means. This fanatical madness is still present today, at several spots on the planet, and it has perhaps even generalized to the point of leading to the destruction of the environment. We truly have the right, then, to ask ourselves: what is the root of this radical evil?

Semprun as much as Bergson, Hannah Arendt as much as Hermann Broch, arrive at the following hypothesis: absolute evil is the result of hardened, stratified and institutionalized beliefs, that is to say, of closed ideologies elevated into norms, into systems and into bureaucracies. It is the result of the vicious circle of beliefs which begin in fear and end in murder (in the name of "good", of course). In this

vicious circle: the selection, exclusion and destruction of enemies, of those who believe other things. If spiritual life has a meaning, it begins by the loss of its beliefs.

*. True for the French words *confiance* and *foi*, not for their English equivalents, "confidence" and "faith".

CHAPTER 22 : The lightness of confidence

We sometimes think that taking care of people with serious handicaps is the vocation of a few particularly charitable and devoted persons. This concerns only the elect; the others have something more productive to do. In the great traditions, however, it is thought that the more one rises in consciousness, the more one "descends" toward the most vulnerable. It is not a question of detachment, it is on the contrary a question of attachment, because we are desperately attached to life.

We live on a planet that is attached to life in spite of its many handicaps: it is as round as a ball, no head, no arms, no legs, it is said to be unconscious of what it does, it is even said to be without intention and without intelligence, a vegetative being! Nonetheless it truly is attached to life with all its might. For around a billion years, still reddish with lava, it prepared itself geologically and chemically for life. It worked for another billion years in its most secret and refined chemical factories (those we find around submarine volcanoes) before managing to resolve the complex problems of fabricating the first bacteria. We have no idea of the extraordinary complexity of a single bacterium. And we, are we attached to life?

Like a traumatized child, we seem to be weakened in our lust for life. We don't take care of our natural incubator - we are neglecting the very delicate balance of the biochemistry of the oceans, the balance of the gases blending in the atmosphere, the forests, etc. - and we aren't much preoccupied with the parts of our great body which suffer the most - those who are threatened with premature death, who live too hard an existence, who know a mortal isolation. We are neglecting ourselves...

The hypothesis of the great traditions is as follows: our birth has left in our mouths a taste of nothingness, and we live in confusion in what relates to the source of our lives. Do we come from nothingness, from emptiness, from the absurd? If such is the case, it is also easy to imagine that we are destined for nothingness. Life, in short, is just a battle lost in advance. What difference does it make, then, if we neglect life and even if, secretly, we work against it.

Here we have a system of beliefs not very favorable to life. But we can also think of it differently. To have confidence in life, we must be able to imagine and hope in a reflective and conscious manner that it points toward our deepest, most lucid and most legitimate aspirations (as if it knew them better than we do). That life doesn't tend toward "harmony" as I can conceive of it before reflection, this I can accept; however, after reflection, a correspondence ought to be perceptible between what I see and what I secretly hope. As if consciousness and life pointed toward the same future. The two growing old together, growing in wisdom together, gradually discover that they aspire to the same thing.

It is understood that such a hypothesis is not proved in advance. Only experience will tell us. But, and this is just it, experience itself demands at least a provisional confidence. To get to the "proofs" in the future, we have to survive, and to survive we must hope with lucidity and not with naïveté. If the superego gets heavier, belief by belief, the nucleus of the self seeks a lightening, a hope, a breakthrough that opens the future, that gives the future a chance.

There is something deeply moving about life; it bets on a future it takes part in creating. It acts as if the conditions for its development will be there, at the right time. And to make sure of finding them, it actively participates in their fabrication. Life creates a bacteria on a planet without oxygen, which it needs, however, in order to grow more complex. The bacteria must come to terms with the conditions present and produce that oxygen (it will liberate the oxygen from water by utilizing solar energy). Progressively, living beings will participate in adjusting the planetary temperature in order to avoid a fluctuation that descends below -50C. or exceeds +50C. Life creates its own conditions for existence, it doesn't passively await them. It starts from a minimum, but it participates in optimizing its conditions of life.

The human being is an animal who aspires to a meaningful life. However, she doesn't see immediately that there is meaning on her planet. Certainly, she rejoices in the beauty of the world, but there is too much cruelty around her. She studies nature and her own nature. She comes to terms with her environment and with her own kind to produce what she needs in order to develop. She makes those around her a bit more just. Thanks to this minimal justice, she regains courage and continues her work, for she has managed to inject a little meaning into her immediate environment. She creates her own conditions for existence; she doesn't wait for them. But in order to create them, she needs to be confident that there won't be any saboteurs who will destroy everything.

The conviction that one day, in a near or distant future, life will agree to be more sensible, will accept the conditions necessary for the existence of a consciousness, this conviction which drives us into action, has since the night of time been called faith. It is not first of all a virtue, it is a condition vital and necessary for the existence of conscious beings. It is a level of lucidity that gives the future the power to be something other than the simple reproduction of the past.

The self, to the degree that this word expresses a power of participation, is what struggles against the reproduction of the same. Louis Lavelle defines it this way: "Now the self resides only in the secret point of consciousness where it accomplishes an inner act which is at once the discovery, the liberation and the conquest of itself. Yet it always has the power not to accomplish it, to abandon itself to all the causes acting on it; it has in this way the power to achieve and justify in itself, by a choice which depends on it, the truth of determinism. It is because, if the life of the mind resides in freedom, it is impossible for this freedom to be a gift made to us: it is only a call we must answer; it exists only for the one who consents to make use of it and who accepts the risk¹⁷." In short, before being fully conscious, consciousness works on the conditions of its own existence by producing meaning where it finds none. It succeeds in this by having confidence. This confidence is a state of relationship between it and reality.

Life in society requires having confidence in the different alter egos surrounding me. Will these persons take care of me if something bad happens to me? I need to know this. In order to know it, in order to believe it, the best thing is to take care of others, the most vulnerable. Then I will be able to have confidence, for I will have had the experience of happiness this relationship brings. I myself create the conditions I need to have confidence in others. The first condition is to act in such a way that others can have confidence in me. I give the future credit. My faith creates brotherhood.

It is sometimes said that very handicapped persons are fragile and vulnerable. In fact, they are above all dependent. Without care, they die. It is this dependence that calls out to us and sometimes irritates us. I believe that these persons recall to us a little too directly that we depend on everything: plants, air, temperature, sun, human solidarity, etc.. We don't like to become aware that we depend on everything as a handicapped person does. After a while however, the discovery of our extreme dependence makes us cry out with joy, for all pleasure is an electric arc extending between a vital need and a living response, a light in the cloud of our dependence.

Yet if, in order to live, the body depends on everything, consciousness depends essentially on itself to be born, to live and to flourish. Consciousness is that curious thing that gives birth to itself, by itself, and in itself, starting from its pure dependence on reality. For if you "disconnect" consciousness from the body and thus from dependence, it loses its means of communication and disappears.

The paradox is extraordinary: consciousness is absolutely dependent on itself inasmuch as it is embodied in pure dependence on everything. To depend on self and depend on everything are not mutually exclusive, but mutually inclusive. This is why there is never a simple answer to the problem of immortality. Absolute death is just as impossible as absolute life. But since consciousness is relationship

¹⁷ Louis Lavelle in, *Les puissances du moi* (The Powers of the Self), Paris, Flammarion, 1948, p. 62.

first of all, it is perhaps the guiding thread that ensures that we do not fall into the idea of an "autonomous soul" or into that of an "autonomous matter". Two dead ends.

CHAPTER 23 : The traumatic question

At different times between my early childhood and age twenty-five, I became aware of the meanness of men. One day, the grocer I worked for for a while snubbed me in this way with an inappropriate comment. A strange question exploded in my mind: How did it happen that, in my family, we were careful not to humiliate anyone while this shopkeeper could insult an employee as easily as if he were squashing a fly? Were we of the same nature? Did several human species exist, some mean and winners, the others good and losers?

Is the human being fundamentally bad or good? This is the principal political question, the only one, perhaps, the others not being political, but strategic. Let us be more precise: the question is not to know if the human being is mean or good, but to know if he or she is fundamentally mean or fundamentally good. This question raises a decisive paradox: if my employer represented the "winner", then life had produced a brute, and my "goodness" was only an error in adaptation. I was a failed man.

Let us broaden the question: if that man were human, I mean, if he weren't a perverted human, but a fulfilled human, then my moral consciousness would no longer have anything to do in this world, it would be only a sickness without a future, for this is what drew me to the side of goodness, this is what forbade me to go the way of "normality". He had found his humanity by crushing his consciousness as if it were a temptation to maladaptation, a weakness incompatible with the universal law of the strongest, but I was going toward my own extinction by a maladapted good behavior.

From the point of view of evolution, there would then have been two competing paths in humanity and not a grayish mixture in each of us. For my part in any case, I did not find and still do not find two human natures in myself, but one alone, good nature. The other, mean nature, is, in my consciousness, only a perversion of the former, a kind of degradation in which the subject loses his capacity for empathy. Then, of two things one or the other: either this sickness is a return to a state of adaptation previous to empathic consciousness, which is revealed to be a wrong road; or, on the contrary, meanness, I mean the law of the most brutal, is a remnant of maladaptation which time will eliminate. This great political problem raised by Machiavelli and Rousseau is in fact a great psychological problem also.

After long experience in counseling and community social work, I dare to propose the hypothesis that this ambiguity constitutes the very basis of man's "great trauma": an existential ambivalence about human identity. Here it is about the very status of ethics and morality. What is the status of this quality which allows human beings to cooperate and thus survive as lucid beings? It seems that we are at a decisive moment for this question, for we have in our hands ultrapowerful weapons of destruction, incompatible in the long term with the law of the most brutal, the most greedy, the meanest and the most aggressive. This question is a trauma.

Because of this, the boss who humiliates his employee is a traumatic event. An event is traumatizing if it calls into question the foundation of the human soul and changes the very nature of the future. For example, if my mother or my father hit me, this will create a trauma only if this calls into question the good nature, the reliable nature of the human soul, its capacity for cooperation. For if I can't trust "my mother" or "my father", how can I trust my "self"?

It is about knowing if there is a betrayal. If such is the case, there will be an infantile reaction: a visceral rebellion. The betrayal produces a rupture of confidence, without which one is no longer able or even willing to leap into human experience. We set ourselves into a way of going in circles or into an attempt at self-destruction.

Betrayal changes the nature of my future: before, I was confidently going ahead to a welcoming future, now I go with dread toward a disturbing future. An event like this attacks the future, for if man is fundamentally mean, it would be better to destroy the human species; if on the contrary it is good, but can pervert its nature to the point of becoming mean, then goodness should live and even live in spite of all perversions. This question of Rousseau's is at the foundation of the very possibility of living consciously, it calls into question consciousness and duration, it poses the question of the compatibility of consciousness with life¹⁸.

If this paradox attacks the future, it also finds its cause in the view we have of the latter. For what can justify meanness? If I fear gratuitous torture, sadism, rape then even if by accident my nature is good, it has no future. I am forced to take on the psychology of "preventive war", or give up the struggle, submit.

We must understand this - that if the trauma of the past can still be painful, I have even so survived them, since I can talk about them, but those of the future will kill me. This is why the ancient "psychologists" - those sometimes called sages, the

¹⁸ The work of Carl Spitteler is oriented along this question. To choose to live according to one's soul or to choose to live according to the superego (the conventional), makes all the difference. The human drama is that conventional existence tends to prevail over life according to the soul. But that the greatest number triumphs in this way is not, perhaps, the important thing. See *Prométhée et Épiméthée* (Prometheus and Epimetheus), Neuchâtel, Delachaux et Niestlé, 1959.

Lao Tse's, the Buddhas, the Jesuses - are not much interested in past misfortunes, but in the way of envisaging the future.

CHAPTER 24 : The self, the superego, and the infantile reactions

There is in the human psyche an incorruptible part that is spontaneously a donor of value, not of moral values, nor of normative or economic values, but a value intrinsic to each being just from the fact that that being is. A small child sees an ant carrying a fly. It doesn't easily succeed at doing it. It turns the fly and turns it again, acting like a mover transporting too heavy an object by making use of leverage. After several minutes it has advanced a few centimeters, and it perseveres. The child is suddenly face to face with the cosmic drama, and the hero is the ant, it is worth all the gold in the world and through it, life is worth being lived. The adventure is right there, and the child feels invested with an inestimable value, as if swollen with an infinite love of life. The time which enveloped and uplifted the ant, the fly, and the child is so complete and perfect that it seems it can never collapse.

At every moment the world can be saved like this, pass from the most total boredom to the most absolute wonder. And this comes from one's self and not from the thing, for attention (the application of consciousness) is indispensable. Through these knots in time, a relationship is established in two components between the inner reality (the self) and the outer reality (the world). A direct relationship, first of all, for the body is instantaneously affected by the real, physically, chemically, biologically, and what is more, it also acts directly on things and beings. It is a relationship that gives life and will give death, a relationship of mutual transformation that is completely asymmetrical: I depend infinitely more on the outer world than the outer world depends on me. I am ignorant of almost everything about this relationship. I am far from having control of it, and it is unpredictable. Secondly, it is an experience mediated by thought. I only know the intelligible part of the world. I live in my thoughts about the world. I sometimes suffer much more from my idea of the world than from the world itself.

The self develops to the degree that it distinguishes, connects and confronts these two dimensions of its experience so as to learn how to learn, to develop an understanding of the world, to travel from question to question. But already this signifies that it is engaged in some seeking for the truth (desire for the truth) and endowed with some perception of its community of being with the whole of reality (universal love).

In this double relationship (direct and mediated by thought), consciousness sees its giving and constructive act. When it gives value to the world, the latter appears to give value back to it and all this takes place in the context of a radical dependence

in regard to air, water, food, temperature. The self has not yet decided that the world is not-self. The separation has not yet taken place. For the moment, the act of consciousness consists of embracing this world of infinite value and allowing itself to be embraced by it. It knows it is relationship and hasn't yet chosen to perch on the branch of its own will and its power to act.

Starting from this relational nucleus, the self discovers different ways by which its inner reality can act on outer reality. But it is because it has already discovered that outer reality had itself taken the initiative to bring it, the self (the participating consciousness), to fulfillment. The world did it before I perceived it and adopted a point of view about it. The separation of self from not-self is an act of the self, a second act, an echo. The child sees her big fat Mama still enveloping her, she comes out of her and she answers her: "In my way, I am making you a new dress, I am clothing you with an added value, in this garment you are marvelous." The you comes to be born not from the I, but from the separation of the we into two poles, the you and the I.

The self learns from then on to see, to perceive, to marvel. It also learns to will, to act, and to evaluate. This isn't possible without an ethic, that is to say, without realizing that all behaviors are not equal. Some contribute to the betterment of the world, others to demolish it, to increase suffering, to multiply the dead ends, to destroy possibilities. The good is what goes in the direction of life, evil, what goes the other way. But just try and find the difference between the two! There are no laws or rules which can define good and evil, for we are all far too ignorant of what life is. All the rules, the prohibitions, the moral definitions are certainly legitimate, but aren't a part of consciousness and consequently of the "self".

If the self is not sensitive to these rules, it is because deep within it there are relationships that are felt as needs; these are the relationships of interdependence and even of radical dependence (air, water, food, temperature). The world can do without me, but I can't do without it.

Contrary to Freud, we have not spoken of urges, but of needs and desires, and we have not deemed that these needs are in conflict with the self; the conflict is not there, on the contrary: the needs form the self in its relational essence. We have installed in the very heart of the self all the interdependent relationships - physical, chemical, biological - between the human being seen in his or her entirety and the environment seen in its entirety. To these vital needs are added the just as vital affective needs - union, autonomy, recognition - to which we still must add the needs for rootedness through education, the discovery of the question of the meaning of life, but above all, the necessity of keeping in contact with reality.

The self is inhabited by needs that will be conditioned and contaminated, but which retain in spite of everything a reality to which we can return: to constantly rediscover what it is to eat, drink, breathe, sleep; to find once more beneath old

habits what human sexuality is; to reexamine our conditionings; to return to experience not on a virgin ground, but on a renewable ground.

The self is inhabited by desires, and the famous distinction between the desires of the body and those of the soul is just one conditioning among many others. It would be preferable to speak of desires we can feel are authentic and conditioned desires. But, and this is just it, the relationship between inner reality and outer reality is complex and multidimensional; it can become almost anything. I can clearly perceive, however, that I hold a part of the responsibility for it. On the level of the world such as I think it, for me to see myself as mortal or immortal, prisoner or free, condemned or saved, unhappy or happy, it is enough to think in such and such a way... On the level of the world such as it is, I can put it out of balance and destroy myself. The anxiety is all the greater since I am in nearly total ignorance. Out of ignorance, I can break everything.

There is in me, then, a deep emotional sounding board where anxiety is side by side with wonder. The feelings of the soul are no drifting mists; they form the consistency of the soul itself, they define its substance. For I will pass my life more in these feelings than in the consciousness of reality, and this is true even if reality remains decisive for me and for all of us. Ideas themselves are born from feelings, transform them, are never completely separable from them. So it is not an exaggeration to identify the self with the soul. It has all of its characteristics. It is conscious relationship. Through consciousness, the self becomes intelligence (it discovers intelligible relationships), and through its will it can participate in its own construction or destruction.

The self also has at its disposal a memory - of rules and recollections - which, however, is not a warehouse. It may very nearly lose this kind of memory: what it cannot lose is the integrated synthesis of all it has consciously lived. It has integrated a feeling of its existence. It is itself the synthesis of its own life.

Nevertheless, family and society do have a "morality". Here we are not speaking of behaviors in harmony with life in opposition to destructive behaviors, for these are a reflection and thus a dimension of the self, an ethic of consciousness which cannot justifiably be transformed into defined rules (since we are plunged into an almost absolute ignorance of what life is). The self is adaptive.

However, family and society do need to make human behavior predictable. It is not about making them socially acceptable, for cooperation is without a doubt more socially effective than rivalry or competition. It is only about conforming them to a mold which permits the reproduction of a model of society - which can be perfectly unadapted to life. This is why a social "morality" can lead to the total loss of a people or even of a civilization. In this reservoir of morality, rules and prohibitions there is no reflection. Yet often these stereotypes are born of a reflection. For example, Moses' Ten Commandments probably came from a long meditation on social experience. When they have become elements of social reproduction, however, they are no longer anything more than molds. The ethic of the Ten Commandments is forgotten; it is enough that everyone conforms to

the mold. We are no longer dealing with anything but instruments of reproduction. We learn them like mathematical rules, without understanding their meaning, without grasping their adaptable and living spirit.

This "morality" made up of closed values is internalized in a memory peculiar to human beings, the superego. They are just those values, rules and prohibitions that do not result from consciousness, intelligence and the will of a self. They have, however, found a way to infiltrate the body. For the body can learn a morality that is not the ethic of the self. It can learn through imitation, without reflecting. In that capacity, it can feel a guilt, that is to say, a physiological process of inhibition which acts directly on it. It easily follows the learned habits. The body can be conditioned.

The superego acts in two ways, then: in the form of almost audible guilt-inducing messages and directly in the habits of the body or by processes of inhibition that go as far as somatic attacks in punishing forbidden behaviors. In spite of this, the self can always retake its power over the body, at least partially, renew its visions of the world and gradually change its habits. The work remains arduous however and sometimes the results are limited.

In short, the superego is not a morality whose aim is the socialization of urges that are intolerable without the direct and indirect control of family and society, but simply an internalized organ of social reproduction. And this social reproduction can very well carry urges that are harmful for human beings as well as for the environment. The superego is "impulsive" in the sense that it is aggressive and even lethal. This is why the self is founded on the ability to escape social reproduction (at least partially).

In contrast to the superego, the child reacts. Not that he is obsessed by uncontrollable sexual urges or by death urges that must be contained. But simply because his family environment, prisoner of a superego, doesn't always know how to respond to his deepest needs. Sometimes it even betrays them. This reaction is, at the same time, a behavior and a complex set of emotions. The psyche and the body readily assimilate this type of reaction especially if the situation of lack persists or if the betrayal is repeated.

In short, a set of reactions is manifested: submission, rebellion, withdrawal into silence out of vulnerability, protective habits, worsening feeling of emptiness, distrust, hostility... Just as the superego is maladapted by definition, so will be these infantile reactions. They are, they too "in-corporated", integrated into the body in the form of an association of behaviors and emotions. The stronger the infantile reactions are, the more the superego attacks. The more the superego attacks, the more lively and sometimes violent the infantile reactions become. Here the superego ends up producing what it fears. Does it fear seeing an unbridled sexuality appear in the adolescent? It is probable that this unbridled sexuality will appear, for the superego has been working on it for a long time. The "urges" are, in the end, the indirect construction of the superego. This doesn't mean that children are innocent and perfect. No, they really do have needs which always

squirt out a little in spite of the conditioning, and these they pit against family and society.

CHAPTER 25 : Intelligence and consciousness

Consciousness is the organ that damages social reproduction. Consciousness reacts to confinement because it lives in a dual perception: toward the interior, it sees dependence, needs, the reality of the soul; toward the exterior, it knows it is touched directly by reality, knows it is dependent.

It sees itself tying both ends of being at every moment. It is, then, adaptive in essence. As such, it struggles against the forces of reproduction that inhibit its light and its adaptive intelligence. To adapt is to participate in a complex reality. Why participate? Participating is at the least a reciprocal adaptation, and adaptation has meaning only if it is perceived to be reciprocal. The human being adapts to reality and adapts reality to him or herself, but reality also adapts to the human being and adapts the human being to itself. In short, the human being is not in relation to the world as an object, she or he is in the world, but is neither passive in the world nor its master. She or he is creative, but dependent on a world even more creative than her or himself.

Let's step back in order to better understand the relationship between consciousness and intelligence. We speak of intelligence when we succeed in creating, that is to say, in adding complexity. Complexity is not complication. It supposes, on the one hand, the unification of several elements, of several dimensions in a dynamic system; this dynamic system tends, on the other hand, toward a certain autonomy and has a certain creativity at its disposal. For example, a symphony is complex, it is detachable from its creator, it possesses its own creativity because it inspires other works.

If a complex system can be reduced to a program, this program defines the system's level of complexity. For example, if an automobile can be reduced to a program that can be executed by robots, this program defines the vehicle's complexity. The smallest possible program capable of reproducing the work defines its complexity.

We could say that the more a functional intelligence is capable of producing a complex work, the more intelligent it is. But this is still not consciousness. We speak of consciousness if a being can reassess his or her work so as to make something that has meaning and value out of what is produced.

In order for there to be consciousness, it is necessary that, beyond the level of intelligence able to produce a certain complexity (functional intelligence), there be a second level of intelligence able to question the finalities pursued in order to increase their meaning and value. It is this second level that is called

consciousness. Thus someone who is very creative in regard to the means of making the most money possible, and can question the effectiveness of these means but not their finality, is still using only his functional intelligence. It is at the moment when he questions the finality "making more money", when he becomes aware of that finality's contradictions and redirects his action toward other finalities which have more meaning and value, that he reaches the level of consciousness. Consciousness is a kind of intelligence of finalities. One can be weak in functional intelligence and strong in consciousness. I am sure I have met people called "intellectually challenged" who are very enlightened on the level of finalities.

The hallmark of a finality is that it safeguards the difference between ontological value (what a person is worth), moral value (what a behavior is worth), and exchange value (the possibility of replacement). To pass from the finality "making more money no matter what the consequences for others and for the environment" to the finality "improving the comfort of the greatest number of persons without harming the others", is to grow in responsibility in relation to beings, grow in ethics in relation to behaviors, and it is also to change the very meaning of the action, to pass from a behavior which has meaning only within a narrow sphere (oneself) to a behavior which has meaning in a much wider sphere (the brother/sisterhood of humans).

A behavior is more ethical and more sensible if it increases harmony and coherence in a broader environment, if it connects the parts to the whole. A behavior is more sensible if it avoids future dead ends and if it gives a lasting love of life as persons are opened to the second level, the level of consciousness.

Functional intelligence responds to a need, it is intentional, it wants to reach a definite result. By itself, it doesn't question the need (which may be only a conditioned need). If an intelligence peers into a functional intelligence and questions the significance of the result, if, in other words, a higher level of intelligence can imagine finalities other than, for example, ensuring the balance of a system, we can begin to speak of consciousness, since this supposes the application of a second-level intelligence over an intelligent process (functional intelligence). For this, the second level of intelligence must be able to envelop the first to discover how it arrives at results, to judge these results in relation to a finality and to discover other finalities deemed to be more valid and more meaningful.

But more "meaningful" in relation to what?, it will surely be asked. It is precisely there that consciousness is observed, it seeks a "referential" (the "in relation to what") that would give meaning and therefore value not only to itself, but to all it observes. Consciousness is an intelligence of the intelligence, it is applied not to making things, producing effects, it is applied to functional intelligence itself, for it is not intelligent to produce things that lead nowhere, that is to say, which do not give life as a whole meaning. The question in the background is always something like this: is this intelligence which makes things really intelligent, or is it idiotic, stupid or absurd?

The second level of intelligence is able to imagine finalities which give value and meaning to things, to persons and to the totality of all beings. This takes place as if this second level of intelligence were saying to itself: a way to see must surely exist starting from which atoms, flowers, trees, mountains, animals, human beings, all that I see possesses a precious and irreplaceable value. I may be able to discover this "referential" starting from which everything has an ontological value.

A finality is not a goal. When we pursue a goal, we imagine a future and we compare a set of results to the imagined future (the goal). We will be disappointed or satisfied according to our expectations. This is the characteristic of functional intelligence. Finalities are, on the contrary, developmental. For example, developing a garden that is at the same time productive and beautiful cannot be done starting from a simplified image of the future. To arrive at such a garden, we absolutely have to come to terms with reality, with the possible futures, the virtual futures. Consciousness is an intelligence of time. It comes to terms with the reality of time.

The finality of finalities would be something like "moving back limits", "opening different levels of understanding", "facilitating the participation and creativity of all beings", "avoiding ending up at something definitive that block discovery of wider roads". Consciousness struggles against limits, that is its essence.

CHAPTER 26 : The integration of the past

Imagine a child who is encouraged very little, always criticized. His nose is rubbed into every one of his mistakes... The more inhibited he is by these reproaches, the more mistakes he makes. His vision is blurred. He ends up not seeing what he does. He constantly makes blunders.

His unhappiness doesn't end the day he moves away from his family. No! He leaves the country, goes into exile. And he still hears reproaches. He is still belittled, humiliated, put down. He struggles. He works. He achieves professional results. And yet he still hears these reproaches every day. His superego kills him little by little. At eighty, he feels as if he has failed in life and he has accumulated some very nice successes. The poison of the morning acts in the afternoon and even until twilight.

Imagine a child, or even an adult, witness of a horrible scene where, paralyzed by fear, he could do nothing. His unhappiness doesn't end with the event. On the contrary, his martyrdom is just beginning. All his life he will repeatedly experience, if not the same scene, at least the same emotion. Nightmares will follow flashbacks in broad daylight. He never knows when the next bomb will explode.

Imagine a child who every time, often in other words, his father comes home drunk, hides under the bed and bites his nails. Even today, when a situation is too

stressful, he withdraws into himself, grinds his teeth and bites his fingertips until the blood comes. All his life he will endure this reflex, this anxiety, this mutilation.

Another will be subject to reflexes of rebellion for the most ordinary situations: he says "no" even before his friend has completed his request. Another is compulsively dominating; if there is no longer anyone to take it out on, he is overcome by the feeling that he is worthless and thinks only of suicide.

There is a place in the brain for continuously looping memories like this where the worst of our lives crushes the best and binds us like a captive animal to repeated behaviors and emotions that run in a loop. The war between the superego and the infantile reactions make the body and mind a battlefield which perpetuated by moral lessons, vengeance and reprisals.

During this time there are works of art, works of society, works of life stillborn through suffocation.

Is there a cure, a therapy? Can the mechanism of repetition be undermined or sabotaged? There is in time, in its same old song and its refrains a discouraging law, that of inertia: in a void, a body retains its speed and trajectory for as long as it doesn't strike anything else. This is the law of inertia, applicable, it seems, in psychology as in physics, but more pernicious in psychology, for thought and emotions are so constructed that they can remain in a closed circuit indefinitely, preserved from any collision with reality, because everything can be reinterpreted in the same mental system.

Mental disengagement, so rare in a society riveted to nature by the struggle for life, becomes the norm in a society of abundance. When the human being no longer thinks, but turns on ball bearings, repetition leads to drama, for no consequences reach his mind even as his body suffocates in the polluted air.

This brings us to an anti-inertial definition of consciousness: if consciousness exists, it is precisely what can break this fatality. If consciousness did not exist, nothing would be any good, for life would be nothing more than a game of snakes and ladders. Consciousness is precisely the power to bend time by connecting the content (events) to the container (thought). Consciousness is thought as it touches the ground: from the inner side, it sees the reality of non-thought in action (for example, it hears the superego condemn all that thought does: "Stop asking questions and work"); from the outer side, it encounters facts at least sufficiently to call illusions and ready-made thoughts into question.

Consciousness is the ability to see one's own thoughts, emotions, and chain-reactions as subject to a memory which perpetuates them. Through it I can attack not the facts of the past, to be sure, but their mechanical memory. For this memory, in fact these memories (superego and infantile reactions) are not just memories integrated into consciousness, they appear to function separately, they are exterior memories, exterior to consciousness. Through consciousness, I can hear my superego's reproaches, my memory's assaults, the reflexes learned in my

childhood. Once consciousness discovers the child bound hand and foot in the bottom of the cellar, hammered by the shouts and detonations of the superego, it feels sorry for him.

But what can it do?

Let's not go too fast. In fact we almost always go too fast, and we untie the child in the cellar in order to deliver him to something scarcely any bigger, scarcely any more bearable, the small world of the agreed-upon social universe. We get him out of the familial superego and abandon him in the social superego. There, a whole society has assembled to say of man, to say to man how little and calculable, usable, ephemeral, easily located and easily manipulated he is, barely a small heap of flesh that can easily be set on fire with a torch.

A social climate exists, a social superego for the child heavier, though different from his parents' simple reproaches which, after all, only reflect the distress of a human being in a culture at a standstill. At school, on television, on the internet, everywhere we are reminded of the tiny and petty nature of the complex of body and emotions called "man". At work, parents are reminded at every shift that they are worth only a small salary, a small residence, a small seat in the metro, a little ballot, the petty entertainment of garish soap operas. They are no more than avid selves in an anthill almost totally closed in on itself. And if they were worth millions, had four or five villas, six or seven cars, it would be barely a little bit more. Under the midnight sky, their brick boxes are a little bigger and shinier than those of the average man, but still invisible to an astronaut. Tin dust or gold dust, both blow in the wind.

Fortunately, consciousness can go outdoors and get fresh air with people like Romain Rolland: "I am at the time of year when I must read a lot for my various tasks. It's unbelievable what I absorb from books. Every day I am fed by several works, by four or five artists' lives. I still have no time to write for myself. But I'm not worried. I'm not in a hurry. Perhaps I'll die tomorrow, but I act as if I ought to live for fifty years. I am busy at this time not with making works, but with broadening my personality, with rebuilding its foundation which has sagged a little, with getting more light into every story, every room of my house. I am renewing and extending my view of the world. I'll set off when I reach a new degree in my development, when I feel like another man. Already there are so many things in me that have changed and ripened this year. While waiting to act, I enjoy the pleasure of contemplating vast periods of the past. One feels oneself becoming a centenary being; one breaks the limits of one's life, one is unified without effort to the general laws of the world. The power history puts at the disposition of the mind is amazing: to assimilate in a few hours the best of hundreds of human existences, to choose from among the greatest, who have achieved this result by years and years of suffering, joy, actions and passions. Embrace the centuries at a glance, abolish space and time - what joyous freedom for the soul!

On a sea without limits, it floats with nothing to stop it, filling up its lungs, widening as the horizon widens around it...¹⁹"

Culture, I am not talking about its business which resides in the little world, I am not talking about the river's rigid bed and its dead values, but of living water, I am talking about culture that opens the doors of the great works, those that reposition the human being in his or her spiritual broadness, height and depth, those that embrace centuries of music, centuries of philosophy, of literature, of science, those that make me participate in the great human and fraternal adventure, this sea of colors, of odors, of resonance, of communion that hugs heaven and earth, yes! this culture broadens the "self", gives it its status and its dignity.

This culture relates to a memory very different from the exterior memories which survive only as long as consciousness and intelligence don't apply themselves to them. Exterior memories are like superstitions, they are perpetuated as long as no one puts them to the test of intelligence and therefore as long as no one challenges them. In that capacity "profit", the "market", and "well-being" are pure superstitions. And more broadly, all that diminishes, including what diminishes matter, for nothing in the universe is small and simplistic, all that confines the part within its contours, that is to say, separated from the all, all these ways of reduction demoralize the self.

When my memory passes through consciousness and intelligence, it passes from static to dynamic and its content touches the ineffable. If you want to turn it back into an exterior memory, all you need to do is to stop the act of questioning, and therefore the action of consciousness.

Memories outside of consciousness are small and mechanical worlds, because such memories are like warehouses, or rather gearboxes: the parts turn and are turned, drawing each other into sets of gears, but each part is only one element of the whole, a small something in a confined box. Memories in consciousness are something quite different, they are living and always creative, and above all they live in a space-time which is open to infinity and therefore touches the earth (for the real earth is an infinity of complexity, a very great mystery).

Someone who has read and classified ten thousand books, with index cards, quotations, vectors of convergence, lists of conclusions, a tapestry of well-made sentences, would still be very small in his or her library, suffocated by it. A simple scholar, a collector of cultural corpses. The experience Romain Rolland speaks of is totally different, it is about integrating the universe of works, it is about being in it. Therefore it is necessary to leave the universe of merchandise (calculable and exchangeable values) in order to make wings for oneself, and limbs, and impulses able to leave and go off into the true world of the living, the one we can always

19 Romain Rolland, *Cahiers, Chère Sofia* (Notebooks, Dear Sofia), selected letters of Romain Rolland to Sofia Bertolini Guerrieri-Gonzaga, vol. 1, Paris, Albin Michel, 1960, p. 35.

question and in which every answer is a mine of questions. The smallest butterfly, by itself, throws all technical facts about kites to the ground.

CHAPTER 27 : Facing up

The adaptive power of intelligence depends on the ability to confront real situations. To do this, it must neutralize the mechanisms of repetition which drive us to conform to the superego, to allow ourselves to be overcome by infantile reactions, to be subjected to the struggle between morality and the "immoral monsters" produced by that morality. What throws the human being into the familial drama and its repetition is not just learning, imitation, habit, inertia, giving in to exterior memories, it is also the simple fact that to leave a house is to enter the outdoors. Everything that is repeated, even if it is drama, is reassuring in comparison with the immense unknown of the breathtaking stars, the night. The hole in the ground rather than the sky and the sea.

Outdoors, it is grand, intriguing, disproportionate, incomprehensible... Who wants to be outdoors, far from everyone's obsessions, far from the television dramas' little world of absent dads, yelling moms, stupid teachers, idiotic prohibitions and transgressions at least as idiotic? And yet consciousness will kick us outdoors if it has to. For if not, how can we adapt to the sky and to the earth!

What a person or a society doesn't want to see necessarily creates a psychosocial drama, but also a physical drama (at least by maladjustment to reality). For example, refusal to see the consequences for the environment of our economic behaviors makes the consequences accumulate. The alcoholic acts out his personal drama, dragging in his family, but he also collects consequences which he pushes in front of him and which will finally catch up with him. Pain tamps consciousness down on itself, rubs it on itself: stone on stone, and the sparks fly out... We always find ourselves caught between the suffering from our maladjustments (through refusal to see) and anxiety in the face of dizzying reality. Between the two: gentle lies and social comfort.

However, and in spite of the purring of the media, we feel and we know that the refusal to be lucid is always nothing more than the postponement of deadlines. The more a deadline is postponed, the more the consequences are serious and even irreversible. When, however, a person, a book, a work reveals to us that fear of the unknown is not so terrifying, that it is even possible to go out to the open sea with hope, sometimes the transformation happens, and we decide to face up to the state of the world in ourselves, in others and in nature.

Torn between entrenchment in the sociofamilial drama and going out into the cosmic "tragedy", the human being has developed numerous ways of gaining time, that is, of losing a lot of it. The demon of procrastination piles up the inevitable.

One day it will surely be necessary to keep the appointment with the consequences. Postponing is the business of the "defense mechanisms", the arsenal of the means of allowing us to postpone the appointment. In the art of relationships, a certain number of parries exist to foil these mechanisms whose aim is to avoid the encounter with the self, with the other, with the consequences, with reality and its frightening mystery.

A defense mechanism does not aim to protect the "self", nor its integrity. Quite the contrary, it aims at protecting what isn't really the "self", what pertains to the exterior memories, this mechanical world of moral, social and familial prejudices and infantile reactions. Defense mechanisms aim to protect the status quo, the system which maintains the repetition of what never leads anywhere. It has to do with being kept inside the house, the theater of familiar dramas, it has to do with avoiding any true encounter, any going out of the hole.

If one wanted to define the art of relationship, it might be said to consist of attempting to derail a system that in maintaining itself accumulates consequences in front of it that are increasingly difficult to hide under the rug. It is an art which aims at encounter, realization and escape from powerlessness. The obstacles it has to struggle against are precisely the mechanisms of defense against encounter, against the consciousness that presides over every encounter. Defense mechanisms are difficult to perceive, for they install themselves like parasites in the very acts of perception, thought and emotion. They are the glasses and not the objects in front of the glasses. We can surprise them in the reflections and splashes that distort vision, for consciousness is precisely what can catch sight of the acts of perception.

The first of these mechanisms is *projection*. There are at least two kinds of projection. The first concerns the person: the other becomes the self-image. Very often we attack it, we criticize it for all we don't have the courage to criticize in ourselves. For example, as soon as a mother or a father see their baby, they react in the same way as they secretly react to the vulnerability of their own being. One who fears his own vulnerability feels anxiety in his baby's presence. If he represses deep needs, he will deny his child these needs. If he forbids such and such a dream, he will refuse to let his child have it, or conversely he will demand that the child succeed where he has failed. There are two ways here: either we project our superego on the other, who will be accused of all our faults, especially those we don't see, the most shameful; or, on the contrary, we see in the other our own superego which we then project on ourselves; then we feel accused of every evil, pursued, persecuted by the other. Obviously, the other risks taking part in the game. We can even end up by seeing ourselves as the other sees us or as the other wants himself to be seen.

The second projection concerns life: the superego can be projected on God, on Providence, on Life, on chance, fate, the celestial machinery... No matter! Believers and atheists are seated in the same theater. Here again, the projector can go in both directions: either life is guilty, I give it back my superego, I accuse it of every evil, it's rebellion; or I see myself as guilty before it, I have projected my

superego on it, and it accuses me, it's self-flagellation. In both cases, life rapidly becomes the theater of what I haven't taken responsibility for. Consequences don't disappear into nothingness. They accumulate. Projection's question is the following: how to manage to not see the consequences?

In order not to see, the best way is to "moralize" my relationship with life: either I am guilty, so life is right to be unjust, or life is guilty, and so I am only a victim. I have returned what should have been a relationship with reality to the condition of personal drama. Guilt has delivered me from responsibility.

But why does the human being need guilt so much? Why does he drink this poison so greedily, as if it were the pleasure of the gods? If I am evil, then evil is not gratuitous, life is not absurd. In being guilty, I save the world. This child died. It is horribly unjust. But if his death is my fault, then the world is no longer so absurd and iniquitous. If it is God, nature is saved. The guilty one cleanses the rest of the world. He takes the absurdity of evil on himself.

Alas! by moralizing the real tragedy of man in the universe, I make it a personal, familial or social drama, I make it a game in a tiny world with tiny gods and devils. And as the game aimed at nothing other than sparing me the encounter with reality, I didn't have to assume my real responsibility in the face of real consequences. Unlike responsibility, guilt is a mechanism whose aim is the reproduction of the drama, while responsibility is situated in the face of tragedy, it is the vertigo of consciousness in the face of a reality that surpasses it on every side.

The true tragedy is the human being, his/her consciousness, his/her relationship to the mysterious immensity on which he/she depends absolutely. It is a tragedy, for the human being depends absolutely on what he/she doesn't know and over which he/she has but very little power. However, if he/she accepts the confrontation with the "true tragedy" of the human being in the immense complexity of reality, she/he may possibly find in this tragedy a colossal adventure. But this is something else. This is true art, the culture of the open ocean, it is melodrama no longer.

But let us continue. To avoid the true tragedy, the grand history, we need little dramas. Repression is a rather good way of suppressing our true needs. It allows us to avoid ourselves. But as a defense mechanism, it applies only to our real needs and not to our conditioned needs. For the latter are there precisely to help us to suppress the former: alcohol to suppress thirst.

Let's take a timely example. The human being feels a real desire for sexually gratifying encounters which fulfill the need for union of a healthy adult who appreciates the good things in life. It is a need for encounter. Well, conditioning will aim to avoid encounter. It will propose a ritualization of sexuality either in romantic purity or in pornographic vulgarity. No matter what the conditioning, which will be repressed by the expression of the true need, the simple, frank,

naked, loving encounter in an ad hoc bodily language is what confronts the immense unknown that shared desire is.

It is possible to eat while repressing the relationship to the world that the fact of feeding oneself is. There is in the act of eating an admission of extreme dependence upon the flesh of plants and animals. There is an act of assimilating alien matter which is deeply distressing. We find tremendous signs of this in the nightmares of the swallower who is swallowed. To ritualize the meal, to give the mouth vegetables that look like plastic (uniform color), is to repress a vertiginous relationship with reality. If you think I am exaggerating, you will have to take an interest in the myths of hunter-gatherers or, in the present-day world, in eating disorders (anorexia, bulimia), diet ideologies (raw food, veganism, vegetarianism, single-food diets) or in dietary obsessions (fear of being poisoned).

There you will see anxieties concerning assimilation, fusion, disappearance in the other or the other in oneself that will give you a cold sweat. If there were not such a repression of the need to eat by the conditioning of consumption, there would probably not be such an epidemic of obesity. The encounter which eating presupposes is probably one of the most distressing. Repression truly is a defense mechanism, and thus a strategy for avoiding this encounter.

We can drink to avoid water. We can communicate to avoid talking to each other. In short, repression can be just as oppressive in a society of conditioned pleasure as in a puritan society. In both cases, it is all about avoiding the encounter which is the expression of a need, that is to say, a relationship of dependence between the self and the not-self.

After projection and repression, there are many other defense mechanisms:

- *flight into the imagination*: not just any flight, one which cuts us off from an encounter, for imagination can also bring us closer and encourage an encounter;
- *imprisonment in a house of facts*: seeing in a forest only what we know about it, as if all the rest didn't exist, seeing in the human being only what psychology says about him/her, etc.;
- *identification with a model*, a religious model, a model of beauty, a model of success, or a scientific model, as if they were the only legitimate ideals;
- *denial* of something that appears shameful and unbearable to the superego. This can be an act we have done or been subjected to;
- *entrenchment in a role of power or of submission*, of persecutor or scapegoat, to only have value if we dominate or are dominated, if we are the executioner or the victim, if we are the judge or the convict;
- giving in to infantile reactions, *infantilization*, regression.

- *seduction* which aims at diminishing the relationship in order to make it a game of psychological, sectarian or sexual capture;
- *psychological cleavage* between the superego and the infantile reactions as if they were a set of entities functioning independently of each other: sometimes I am this, sometimes I am that and I can no longer make connections between my components;
- *forclusion*, the radical rejection of an element of the superego or an infantile reaction that is too terrifying. This element now comes from outside, in the form of an auditory or visual hallucination;
- *social cleavage*, for example between the worker and the consumer, who both have opposite systems of value and who, though they are in the same person, never question each other;
- *social forclusion*, for example when suffering is denied by the medical system which ends up by no longer seeing it, no longer feeling it and which springs up in the medical personnel, however, in the form of psychosomatic illnesses.

We could prolong the list, but the finality remains the same: to avoid facing up, to prevent the self from encountering itself, the other or the real environment. Now, achieving an encounter is precisely what it is all about. Consequently, consciousness must first of all evade the traps set by the defense mechanisms.

Carl Rogers has left us a very rich inheritance. In simple terms, it has to do with three attitudes, but in reality they are much more than attitudes, they are virtues in the most exact meaning of the term, that is to say, qualities of an affirmed self. If the self is defined as potential (and partly achieved) freedom in regard to the mechanisms of repetition, reproduction and maladjustment that prevent the human being from encountering him/herself, others, and the world, if the self is that, then the attitudes Rogers speaks of are the self's natural state, and thus the self's virtues: sincerity (to say what I think and what I feel), authenticity (to think and feel what I am), congruence (to act like I think and like I feel). The self feels no happiness as long as it is not sincere, and its sincerity has no value if it is not authentic, and what is authenticity, if behaviors don't follow my mind's lucid acts?

To the degree to which the self enters its own reality and the reality surrounding it, to the degree that it seeks a true encounter, it provokes in the other three possible reactions: flight, attack, or the desire for an encounter. It is starting from this moment when the desire for an encounter meets the same desire in the other that relationship is possible and the art of relationship begins.

In the beginning, it has to do with not falling into the other's traps and preventing the other from falling into our traps. The two dimensions are crucial. After that, it has to do with approaching each other without ever identifying with each other, or merging, or being assimilated.

CHAPTER 28 : The art of relationship

The plumber listens, the doctor listens, the therapist listens, everyone listens. But who is listening? When the person in front of you suffers enough to want to get out of repeating the drama in which she is stuck, she is seeking someone, and a place, where she can be herself, where the parts of herself that are suffocating her cannot enter, or if they do enter, would no longer have power because of the knight who is there in the castle, and who listens without making moral judgments. To let the being who is there be opened, even as we protect it from itself, from its superego above all, from all that is toxic in it.

Simple! Not that simple.

A woman calls a therapist. She has phoned, she arrives. She has already confronted, step by step, the thousand ravens of fear, pride, and the danger of rejection, of all the prejudices about vulnerability and the immorality of weakness. "What are you going to do there? Aren't you able to cope with it on your own? You're going to whine again? You're going to sob about your fate... And so on and on, for the superego knows very well that its hours of full power are numbered. She has decided. Then the superego brings out its heavy weapons, shoots it arrows. She hears it shouting in her head. You will have to continue the same crazy life. Machine, shut up! Turn!

As he opens the door for her, the therapist already knows all she has had to fight in order to get to him. So he smiles at her like an accomplice, for the moment carries with it a gravity of decision which can at any minute turn to panic.

The gazes delicately cross. Respect, restraint, modesty. The two protagonists have the vague feeling of a secret meeting, like that of a resistance group that has come to prepare a sabotage operation. Something forbidden, something heroic. In any case, it's a special day.

He reminds her of the date, the season, the weather, what they have come to do, as if he had to record this decisive moment in a notebook. He serves her something to drink and they sit down under the light, in a reverential silence.

Seen from the outside, we have the impression that he has just transformed himself into a malleable clay and is ready to receive any blow so as to express every form. Too much rigidity, and she runs away. Too much softness, and she shuts up. Neither crystal nor liquid, plastic. Too much presence, and she remains absent, too much absence and she dreams of leaving. You have no idea how hard it is to balance the first moment! Every prejudice searches for the slightest pretext. At any moment the man who is there can be transformed into a charlatan, a voyeur, a silly fool or a maniac, even before opening his mouth a second time...

And yet the social worker (the psychologist or the psychiatrist) may accomplish the tour de force of becoming just a human with big ears. He can do it, for in the

human being as in all the higher mammals there is an ability to resonate with the emotions of the other²⁰ -- not to know them or understand them, but simply to resonate like one violin string resonates with its neighbor, producing a harmonic. The brain of an ape watching another ape eat a peanut is stimulated at the same spot as if he were eating it himself. And if, instead of eating a peanut, his fellow creature sucks a bitter nut, the brain reacts in the same way, the compassionate ape feels the bitterness also, but added to this bitterness, yes, the pleasure linked to the activity of delousing each other! Removing each other's lice has become a professional activity!

But here the basic empathy, still coupled with the pleasure of taking care of each other, is sustained by a finely differentiated attention. When she seeks to divert attention by recounting an irrelevant anecdote, he smiles and nothing more. When she approaches something painful, he straightens up as if he were advancing toward the scene of an accident. Nevertheless, he knows he is not there yet; the road will be long.

She is like every person who suffers. She has a very painful burn, written right there on her body and her memories. In order to care for her, it will be necessary to reveal her, expose her to view and to the open air, so that the other can look at her, see if it's serious, choose the salves, the antiseptics, the dressings. But a million reflexes will slow this operation.

For a reason difficult to penetrate, all suffering in a "civilized" being is coupled with shame and guilt, as if an admission of weakness or dependence constituted a serious fault. It will be necessary to pass through all of guilt's usual traps. She will want to reject the other (to avoid being rejected by him), abort a meeting, seek a pretext for interrupting the process...

Almost inevitably, a moment will arrive when she will lower her guard, and hurl insults at him with no relation to the situation. Then she will reverse the projection and, through the perfectly silent mouth of the other, she will hear her superego call her every name. Just the raising of an eyebrow will be a reproach.

Exhausted by her own sabotage operations, disconcerted by the therapist's patience and attention, she will try to seduce him, make him fall to the left, to the right, or on his face. She will be humiliated if he doesn't fall, she will be betrayed if he falls. But the therapist won't make fun of her. Then she will use other weapons, she will magnify an unimportant aspect, she will minimize what is beginning to name her pain. She will lead him along wrong roads. All her arsenal of defense mechanisms will have their turn.

²⁰ Gérard Jorland and Béangère Thirioux, "Note sur l'origine de l'empathie" (Note on the origin of empathy), *Revue de métaphysique et de morale* (Review of metaphysics and morality), no. 58, 2008, pp. 269-280.

But the other stays on course. He doesn't let himself be distracted. He is patient and doesn't allow himself to be flustered by the attacks; perceptive when he has to be, he knows that the battle is not against him, but that she is attacking herself in every way. Soon, she lets a memory arise, she is overcome by an infantile reaction, she lets herself go a little, but all at once she gets up, thinks she is stupid (unless she finds stupid the one who, silent and surprised, remains seated in front of her), then makes up an excuse for leaving..

-- Me too, he says to her, when I meet my colleague who helps me be objective in my professional life, I often want to leave ahead of time.

She sits down again. He explains to her this so natural need to be "objectified", it's like looking at yourself in a mirror. Everyone wants to do it, but lacks courage...

And the interview continues. The therapist grants little importance to maneuvers that are increasingly gauche. When he feels that the bond of trust, still fragile, is in the process of coming undone, he returns to the surface of the problem.

-- You were speaking about your son. He hadn't returned...

To return to the facts, the simple facts, knowing that they are still very far from the wound... But they are leading up to it. Above all don't dive too quickly into feelings and never let feelings get away from the facts, wander alone in the soul's vagueness and abstraction. Uncoupled from facts, feelings are like soap bubbles, they go in every direction and burst at the moment when their emptiness becomes too caustic.

So the therapist follows, then, four screens: 1) the defense mechanisms, the traps, which he mainly avoids by according them little importance, or by returning to the goals of the encounter, the context, the need to change things; 2) the facts, which generally start rather far from the principal wound -- they are nevertheless the Ariadne's thread which must be followed if one wants to arrive safe and sound in concrete terms -- ; 3) emotions and feelings, which sometimes are infantile reactions, automatisms, but which at certain times get close to an authentic emotion -- one mustn't try to catch them, they are like little fish, if one points at them too directly, they take French leave -- ; 4) the flashes of consciousness when, suddenly, she seems to see more clearly, admits something to herself -- here, attention must be lively, words become very important, approximations seem odious, only the right word can be tolerated, and sometimes the right word is the expression of a face frozen in its silence.

Four stages. When we approach the deepest (the stages go downward as if we were plunging into increasingly hidden basements) we should expect defense mechanisms, if we return to the top, to the most superficial, we fight with the superego, and if we succeed, we dive into the facts again, then into the emotions, sometimes some lightning flashes, and we dig, we specify, we clarify and we return to the surface. We must not go too fast. A wound is like a little wild animal who

heard a shot a meter away from him one day; he was traumatized and the light of day terrifies him.

The facts, then, are not insignificant. The therapist must understand them, seek coherence in them, for he knows that the woman is headed toward the truth; if not, why would she be there? Along the way, there will be a thousand lies, the result of defenses. The important thing is not to get the truth out of the jumble of lies, it is not about unmasking anything whatsoever, but about letting the subject advance toward the truth, and so all that is needed is not to be a dupe. The man has already guessed what has exploded in the hands of the woman in front of him the day her husband spoke to her about her son. He has probably guessed correctly, but he won't say anything, for if the truth were to come out of his mouth, it might never come out of her mouth. Confiscating her victory over herself is out of the question.

Never try to unmask, but never let yourself be deceived without asking a question that may lead to the truth. And if she wants to, when she has the strength to confront her superego and confront her guilt, she will talk. For if the truth comes out before the day she is ready, she may be broken by her superego's reaction.

We must, then, listen and not judge, and at the same time not be the recipient into which a thing and its opposite can be tossed. The social worker (the psychologist or the psychiatrist) listens, and this also means: "I'm interested, this concerns me, it matters to me that you tell me how it is." Why does this concern him? Because he too is a man who bathes at sunrise in his own light. And to see a being in its light is quite simply the most beautiful sight in the world.

A curious law: infinity is unbearable, too grand for the self, above all too mysterious, but when two infinities meet, anxiety is metamorphosed into pure hope in the tested finitude of the moment, and the lamp of joy is even lit sometimes.

What are the tools for reaching an encounter? Let's not forget that the finality here is not adapting a suffering person to society with the help of advice and medications, but allowing her or him to get out of a non-adaptive and thus very painful repetition and reproduction by passing through her or his own consciousness, nothing more, nothing less. We are not in a medical model, but in a philosophy of participation.

If my inventory is correct, here are the tools in question:

In regard to defense mechanisms:

- verify and adjust the expectations, for sometimes the patient begins to expect from her therapist miracles, shamanic rituals, healing powers, psychic abilities;
- never let it be believed that you have at your disposal a theory that can explain everything and generate infallible cures, so avoid scientism, and when you utilize a

theory, don't make it a mystery, talk about it and even advise the patient to read about the subject;

-- avoid flight, but respect the rhythm. It is about bringing little fish closer to a spring they don't want to know much about;

-- allow reciprocity, reestablish symmetry: from time to time, put yourself in a position of trust, don't be afraid of your own vulnerability, avoid the image of a person who is above humanity's ordinary dramas;

-- demonstrate that you are touched, that you are interested in what is being talked about, that you won't drop the person along the way.

In regard to the *facts*:

-- avoid misunderstandings. Words have numerous meanings. Open up the words. Don't let them stray from the facts, demand some precision;

-- make sure that you have understood correctly, summarize the facts as you have understood them. You must be able to see what it is about without getting into unseemly details;

-- ask for details when you feel that something is being minimized ("He pushed me a little bit...") or exaggeration ("He's always like that...");

-- put perceptions to the test by proposing other points of view, other ways of seeing.

In regard to *emotions*:

-- show empathy, compassion (compassion consists of feeling what the other feels, but with the conviction that the emotion can be borne, for if the other feels that you can collapse as he himself is collapsing, he will not be able to confide in you;

-- liberate from guilt but make responsible. We do our best in life, but we are always able to discover, after the event, a much better solution. Guilt is derived from this discrepancy: "You could have done better." Responsibility uses this discrepancy to discover what hasn't worked so as to do better the next time;

-- make it be understood, felt and demonstrated that the person in front of you is worth the trouble, that she is not a chore and that you are impressed by what she has been able to go through;

-- use all kinds of questions and "if I've understood correctly..."s to get closer to the most authentic emotions and feelings.

In regard to *realizations*:

-- focus in space and time. When the "drama", the crisis is something that is repeated "at home and not at the office or anywhere else", "Friday at dinner especially, and not at other times", the person feels that she is split in two: the "drama", the "crisis" isn't everything, but something that can be pinned down and "objectified";

-- normalize and widen. "Every normal person would have acted the same way"; "If my children had said that, I would have gotten mad, too"; "you know, six or seven percent of the population are homosexuals..." (support groups are powerful normalizers);

-- suggest several interpretations. The same fact can be interpreted in many ways. It is very useful to suggest several ways of understanding the same event. "I would have seen it like this..."

When you arrive at the goal, there is a kind of magic, for it is not the past which carries along the pain, the past has remained in the past, it is memory that restarts the pain in a repetitive game. And it does it precisely because it doesn't touch it. If I have no power over the past, as soon as memory dips the painful events in consciousness they become like foundation stones. They are acquired knowledge. "I have this in my foundation. I have been raped, betrayed, but I reacted like this, and now that I have talked about it, that I have been a witness to what happened to me, now that this is a shared "knowledge", that it's a shared mystery, it's a strength, an experience. No one can be ashamed of having climbed a mountain, or even of having fallen down a cliff and climbed back up it again."

The past, taken on and accepted, has crossed the bridge between exterior memories to an integrated memory; it has become a wisdom of action, a new ability to face up.

In therapy, there is no cure, for there is no sickness, but a suffering now able to do something useful.

CHAPTER 29 : From the psychological to the scientific

Consciousness is the organ of the ontological values that are the basis of ethics, often against social morality. Without it, nothing has value and the psyche collapses with no desire to live. We hold on to life because it appears to us to possess an inestimable value. This value is the echo of being in consciousness, a credit, for being will have to produce the merchandise. In this respect, consciousness is its own act, pure and gratuitous.

However, and this is a beautiful way to recognize consciousness, it expects everything from being, everything it is, and thus it expects nothing from what it is not, nothing from what is only an image, a prejudice. It is like it is in the railroad station when we hold a name written in big letters on our chest because we have

never seen the person we are waiting for, and we are ready for every kind of physiognomy. If, inadvertently, we have made a mental image of that person, we are disappointed or delighted, and risk missing an encounter. Minus an image, without a model and without prejudice, consciousness knows being without having seen it however, for it is itself a being vast in its potentialities, frail and limited in its present state.

Before undertaking its journey, the small child's consciousness needs to receive a good dose of ontological value. It needs to be recognized as being and as consciousness by those around it. This is the role of the family: an unconditional and unfailing love. Without this foundation, without a minimum, the baby will simply let life down and return to the shadows of the night. It's rare, but this happens.

Most childhoods will pass with a simple deficit, a lack of responses to the needs for union, autonomy, recognition, education, care... But above all, they will pass in a moral climate where these needs will be tied to conformity and models: a link is sometimes created between what the child is worth and the morality expected of him. In order to be accepted, he will submit. He will even, in regard to his own consciousness, force distortions on himself that are sometimes serious. He will swallow what is normal yet not viable: hatred of enemies, scorn for people thought to be social parasites, the false honor and privileges awarded those who crush others, the habit of insulting the environment like a huge garbage can... He will feel to be abnormal what is "normal" for everyone, yet he will inflict imitation on himself.

Starting from there, a struggle between the superego (the computer of normality and morality) and the infantile reactions (internalized ways of feeling and acting) become constant. The superego is a kind of electronic collar attached to the neck: it punishes, generates guilt, congratulates according to the degree of conformity with the expected models. Infantile reactions are the internalization of submission or the revolt which follows it. The child can imagine the superego and sometimes become exactly its opposite. In him the "sinner", the "little monster", the "devil", the "dropout" is born. He fights this little monster. And the more he fights it, the bigger it gets. But there are many other reactions. Because of a betrayal, we can develop a reaction of pathological distrust. A lack of response to a need can lead to a reaction of obsessive consumption...

The superego fights the infantile reactions, but between the two, the nucleus of the self fights as well. It wants neither one. It doesn't want an identification with any model whatsoever, for freedom is its playground. It possesses a "disidentifier", a "me, I'm not that", a dilator of the self. There is in consciousness an ever-living critical power.

One characteristic of the struggle of consciousness for its freedom is its straining toward the truth even when the truth will be paid for very dearly. Another is the recognition of the ontological value (necessarily egalitarian, because incommensurable) of all beings. This is called love, but the word has been so

overused that it aches all over! It is precisely because of its fundamental character that it has been distorted in this way. No matter, there is something in consciousness that perceives all that is as true and inestimable.

To the degree that the will becomes the ally of the deep desires of consciousness, the self will develop around its nucleus. We say self, because, on one side, the will applies only to a zone circumscribed by the abilities of the body and its tools. The zone of power is small and it defines the mouth of the funnel. For the mouth of the funnel, a not-self exists that is unlimited, so to speak. At the opposite end, the widening of the cone looks out on the infinite. From this infinitely wide side of consciousness, the "self" knows that it full of possibilities and a participant not only in the all, but in each of the beings it encounters. From this side, there is no not-self. This is why in many traditions where the will doesn't have so much importance, the "me" is called self, not because it is impersonal and without character, but because it embraces everything, like the colors of the dawn can cover all of space.

Freedom does not consist of escaping the superego, defying its taboos and prohibitions, for such an attempt, however easy it may be, will only amplify the infantile reactions, which will lead to even more furious attacks on the part of the superego. It is not about training a perversion by wrestling with the superego or by surrendering to closed values with hands tied, it is not about aggravating the struggle by playing one side against the other, it is about freeing oneself from the struggle, which always turns into drama, it is about facing up to the challenge of one's inner reality and of the infinite wideness of things. This is achieved in an encounter. The self finds itself only in encounter with others, with the earth and with the great works.

One can find it with the help of someone, or without being accompanied. But why? Isn't sharing this challenge with another a greater happiness? Every person naturally seeks to be accompanied. If the notion of the "wise old man" had not been destroyed by abuses of power, we would readily appeal to elders, those who have accumulated more errors and have integrated them wisely. But this tradition has disappeared. No matter, when we are mixed up in a drama that makes us suffer so much, or when consciousness finally makes a socially "normal" situation painful for us, we can feel the need to confide in someone who would know how to listen to us and, above all, nothing more.

It is this cycle we have entered into in this first part.

But consciousness, just like the self, does not live solely in the psychosociological universe. To confine them in this universe of the human psyche would be to stifle them. Consciousness lives in the physical just as much as in the psyche, it lives there even more fundamentally. In its search for truth, it strives to free itself from the psychological, as if it wanted to reach a non-psychological territory, more "objective", less unpredictable, more stable. And it is there that it advances toward "rationality", "logic", "mathematics". In the depths of its intellectuality it discovers wrinkles it senses are rational, logical, mathematical, as if they truly were

the wrinkles of being. It doesn't achieve this easily. It never achieves this perfectly or definitively. But it advances. Rationality, logic and mathematics have advanced a great deal over the centuries, they are now at the same time simpler and more complicated; they are more complex.

This world appears extrapsychological in two ways. On the one hand, it appears not to be independent of the emotions, for aesthetic emotion, the emotion of purity and eternity, serenity, and many other emotions play a large role in it, but it has nothing to do with infantile reactions. These emotions which arise in the direct encounter with the primary wrinkles of the intellect, these pure emotions seem on the contrary to indicate that we are approaching the goal (a truth which is always evasive). On the other hand, this world is independent of the superego, independent of social and familial morality. Yet it is not immoral or even amoral, it has its own ethic which consists of placing the truth above all. In this respect, it is founded on a vow of fidelity of consciousness to its foundations, as if pure intellect should meet pure consciousness. Somewhere in consciousness is the conviction that the truth that belongs to intellect belongs to all of being (in its psychological dimension as in its physical and biological dimension).

This "extrapsychological" world (in the sense in which we just defined it, that is, the world outside the superego and the infantile reactions) of pure intellect, by a miracle we will have to understand, is much more capable of encountering the physical universe than we might think. The more refined logic and mathematics become, the more we succeed in making physics, chemistry and biology speak. The more the intellect knows itself, the more it seems able to know things "objectively". It must be said that the converse helps: as we try to get closer to things, we see that we ourselves are forced to refine our logic and our mathematics. Nevertheless, these develop following their own inspirations.

In short, if we stop confining the self in the psychological universe, it doesn't achieve freedom any better unless it tackles physics, chemistry and biology. It is by willing a true encounter between the foundation of its intellect and the foundation of reality that it most securely discovers itself, that it succeeds in taking its first steps in freedom, for we free ourselves not by getting out of a prison, but in gradually entering a world in which we can collaborate. For this, we must truly get close to things just as we experience them intellectually. Physics, chemistry, and biology are consequently the surest terrain for consciousness on the way to freedom. It is this terrain we will explore in the second part, not as a scientist, but as a philosopher, with a gaze that embraces the whole field of consciousness.

SECOND PART : The total environment

Consciousness (intelligence of intelligence) envelops thought and makes reflection possible. It is fully unfolded intelligence. It makes possible an amazing multiplication of rationalities. Through it, intelligence is not limited to one particular rationality. In its quest for truth, rationalities are sent out. They are like bees, turning around a hive they can't completely penetrate.

In what preceded this, we were immersed in the human soul, in the relationship between psychological memory and emotional thought, in the quest for a freedom conquered from psychosocial memory. But consciousness knows no boundaries. The partition which, as we often pretend, separates the "self" from the "not-self" doesn't suit it; it is, for it, just a cultural product. This partition is at the foundation of a particular rationality, classical rationality (one bee among the bees), but not of the rationality it seeks (the impenetrable hive). If we take the point of view of consciousness, what good would it do us to free our souls from our families if it is in order to subsequently screw it into a rationality that is after all only one cultural content among others? In what follows, we are going to plunge into rationality as we have plunged into psychosociology, we are going there to assist and participate in the evolution of the self, in its freedom, but without imprisoning ourselves in classical categories (self, not-self; subject, object).

Universal rationality (the impenetrable hive) is the very dynamic of the fluids of thought as, with a view to meeting reality, they organize themselves beneath the psychosociological torments. The particular rationalities (the bees), as cultural content, are simply instruments of the psychosociological drama. In this sense, classical rationality is part of the ecological drama.

And yet here we want to escape this drama. So we have to descend, we have to participate in acts of thought which seek their universal fluidity (the hive) in an attempt to escape the hold of habits of thought which are part of the social drama. We should abandon classical logic in order to venture a little closer to fundamental logic (that of the hive). Our goal is to conquer freedom in order to better participate in reality (an ecology). We are going toward a hope and not toward knowledge that is part of our sociocultural corpus.

From the point of view of this hope, science is an ethic of pure consciousness and pure intelligence. "Pure" here means: detached from psychological and social determinants. It is not, therefore, about our following the science which in our culture says this or that, instead it is about participating in its movement toward a rationality more adapted to reality, less ideological. In short, we must not only explore the knowledge it offers us, but enter the movement of its rationality so as

to help the self progress toward its freedom, that is to say its ability to participate in the harmony of nature.

Science, like an established church, protects its powers and detests such an approach. It burns the heretics. Yet it is also a pure movement toward a truth of encounter with reality whose ethic is still an adaptive and competent participation, and not an ideological and destructive conquest. Whether it wants it or not, it is in the movement of consciousness. It is born of consciousness, it is maintained by it, and it closely follows its destiny. Science is not compelled to be an obstacle in to the self; it can be one of the instruments of its development.

And, as a matter of fact, the characteristic quality of consciousness does consist of opening and even forcing open the boundaries of a rationality specific to a given period of history. For example, classic rationality (Ockham, Descartes and Kant) constructed barriers between thought and reality. These barriers have become obsolete and yet they have remained standing as cultural prisons, as prohibitions of thinking that surpasses them²¹. Consciousness, for its part, can only open up this rationality. Yet we must admit that it can lose at this game. It must propose a criterion permitting it to safely pursue its course.

This criterion will necessarily touch upon the relationship between thought and reality. For if thought doesn't have the possibility of being invalidated by reality, if it turns in circles in its own sauce, every venture for freedom of the rational consciousness can only be madness. And nothing says that a logical madness is less dangerous than a psychosociological madness.

If we must leave classic rationality behind (moreover, twentieth-century physics has already distanced itself from it), we must not, for all that, fall into an isolation where thought suffices. The idea is not to free ourselves from one rationality in order to fall into a vague irrationality which explains everything and therefore explains nothing. On the contrary, if recent science has distanced itself from classic rationality, it is in order to adjust itself to the requirements of a reality which refuses to accept Descartes' ideas. It is not about being less rigorous, but more. Freedom, however, is not in the release from prison, but in the discovery of a road that leads somewhere.

The criterion is that a rationality must touch the ground (reality). It must "work", that is to say, provide a hold on reality (by effectiveness, by prediction of results, or something else). Now classic rationality as a matter of fact did start going in circles at the end of the nineteenth century; it didn't succeed in coming to grips with certain astronomical or microscopic phenomena which had, however, been

²¹ At the time, it was a question of separating religion and science so as to escape the hold of the Catholic and Protestant churches. But this necessary separation at the same time created a boundary between the subject (the subjective) and the object (the objective). Now, the categories of subject-object are very troublesome categories for we can't define them without the risk of falling into a dualism (thought, non-thought) difficult to get out of.

verified. And at the same time, internal faults were found in it, incoherences. It had therefore to be modified; this was the work of Einstein, Planck, Prigogine and many others.

Here, it won't be just about freeing ourselves from classic rationality, which is still that of our current culture, but above all about experiencing a movement of logic, a movement seeking a new, more effective coherence, so as to better grasp the tight and yet liberating link between thought and reality. It is about discovering a "New Covenant"²² for a greater freedom, that is to say a better art of living in the real.

Thanks to this additional freedom, we will later be able to discover that our relationship with the environment is not just ecological in the sense that we are in that environment and that we can destroy it, but also in the sense that thought itself constitutes an ecology similar to that of nature and connected to it, and that it is impossible for it to harmonize with nature without harmonizing with its own nature. This passage into the rationality beyond our rationalities is necessary for us if we are to confront the future's challenges. We won't succeed in thinking ecologically if we don't discover the ecology of consciousness, for both share the same deep roots and liberate each other in the process of searching for the truth.

We are going to begin the project of the total environment in order to try to understand it at its intelligible foundation, according to the following itinerary:

-- Starting from the question of the relation between thought and reality, we will attempt to free ourselves from a contemporary obstacle: the quite generalized idea of the *absurdity of the world*. Since classicism, it is customary to think that it is the "I" that thinks and that the rest is "matter" and that "matter" means: "non-thinking". Because of this the world would be absurd in itself, and it is the human being (or God) who would give it meaning. But what exactly is it about?

-- Certainly, consciousness does give meaning to reality. It is even its essence. But if reality itself contained no meaning, the act of consciousness would be totally arbitrary. Reality gives meaning to the human being well before the human being does, for if not, consciousness is only an illusion. In fact, it would be fair to say that meaning emerges from the relationship between thought and reality, a relationship full of mysteries, but also of surprises and footholds.

-- Once we have gone past this obstacle, we will have to recall several preconditions permitting us to plunge into the visions of the cosmos proposed by the new (postclassic) sciences. We will pass through the space-time of relativity, the fascinating universe of light and the sphere of life (the product of light, water and dust).

²² Title of a famous book by Ilya Prigogine and Isabelle Stengers, *La nouvelle alliance* (The New Covenant), Paris, Flammarion, "Champs", 1978.

I repeat, we are not summarizing the recent conclusions of the natural sciences, we are engaging in an exercise of thought and of the confrontation of thought with reality in order to better grasp their intimate relationship. For if consciousness is anything at all, it is the ability to grasp this relationship, perhaps it is itself this relationship! We are, then, seeking here to free ourselves from a simplistic vision of the material world (in this simplistic vision, matter would be the opposite of consciousness and intelligence), in order to bring ourselves closer to a more contemporary vision of reality, one in which it appears to participate in thought inasmuch as the latter consents to evolve with it.

This should lead us to breathe some fresh air, outside a dwarfed representation of the world in which consciousness would be infinitely alone. We should be part of a world that is vast and full of promise. We should have found a way out of our powerlessness without falling into an illusion of omnipotence. A reconciliation with thought will take place, perhaps, and it is what will lead us to the ecological society.

After that we should be ready to dive directly into the heart of human consciousness, into the *very bottom* (if there is a bottom) and grasp if possible the origin of its anxiety, an anxiety so desperate that, in its panic, it destabilizes the climate and all the balances of life. The hope of this book is to plunge thought back again into the full extent of its consciousness so that it regains contact with external reality and also with inner reality (and their relationship), so that it rediscovers there its zest for living, and resumes its itinerary as a free and happy participant in the evolution of reality itself.

If you have understood us, we think that, as long as the human being feels confined in a little world, he can only panic like a hobbled horse and want to demolish everything. If he reaches the open, communing with nature, he will want to walk with her. This is the aim we are pursuing.

CHAPTER 1 : The horrible question

The most terrifying question in the world, the question of alarm: could a consciousness find itself plunged into a totally unconscious cosmos, as unconscious as a storm of Titans? Could we find ourselves absolutely alone with our consciousness, our hopes, our beginners' intelligence, totally immersed in the noise, the fog, and the danger of stormy forces? Alone in primitive chaos. A Greek idea. Can this scenario even exist?

But how might the human psyche, the one we have described, endure it? Those who wrote the world's first books trembled as they formulated this question, or

hid it behind hesitant answers. From chaos into chaos, we can think this, from consciousness into consciousness, we can think this. But from consciousness into chaos is not only the essence of horror, it is also the zero point of logic, it is unthinkable. Yet even so, can this exist? Can the non-thinkable exist? We can reformulate this question less harshly: could a soul sensitive to music survive in pure noise? Could it coexist with a universal noise in infinite expansion? We could make the question more operational: starting from when does noise become music? Is there a criterion? If there is, is the universal environment presently nothing but noise?

In the nineteenth century and at the beginning of the twentieth century, the answer seemed simple: it's the human being who makes the music. In reality there is only noise. The human being hears music even when there is only noise. Music is in her or his ear like beauty is in the eye; outside the psyche there is only noise and so there is no beauty. We don't know what the environment, that is to say the not-self, is, but no doubt it is a pile of unconscious forces, noise. Generally speaking, the human soul resonates with its own image, it forms its own mirror. Outside of it there is neither harmony, nor beauty, nor intelligence, it's the rule of chance and molecular memories.

We nearly fell into that answer. A consciousness in an absolute non-consciousness. Consciousness holds, for it is "self-referenced": it sees the beauty it hopes for. This is why psychology and sociology believed they could advance without taking into account the environment, in the broad and universal meaning of the term. The only environment envisioned was man himself and his results. We the society, we the civilization, we alone were the environment. The rest was not the environment, but the physical universe, the business of physicists, astronomers, chemists, biologists...

But after the theory of relativity (around 1912), after quantum theory (first half of the twentieth century) and the advances in chaos theory (around 1970), the twentieth century ruined this answer. Today information constitutes a fundamental given of physics, chemistry and biology in the same way as energy does. In reality, matter is energy-information, and space-time is a network of exchanges of energy-information. And it is precisely information that makes the difference between noise and music. Music is not just in the ear. The environment, in the broadest sense of the word, includes modulations, that is to say, information. The stars sing. Each star can be located by its own unique song. And we bathe in it, it is our tangible light.

Noise is maximal disorder, and maximal disorder is chance²³, for example, billiard balls striking each other in every direction with absolutely no preference make noise and are disorder, that is to say, chance (equal probabilities in an isomorphic milieu). Yet this void of information is never absolute in the universe. This zero of information can never be reached, any more than the zero of energy. Such a zero is exactly equivalent to non-existence (absolute zero is equivalent to nothingness). Absolutely pure noise is an abstract notion. In reality there is always information. Information seems to be a condition of existence in the same way as energy. A perfect noise would suppose a perfect independence of elements and a perfect independence between the elements and the milieu. Now such an independence is neither thinkable nor achievable²⁴.

The fact that information is essential for existence means many things which we will turn to later, but we can say even now that the elements of reality are never absolutely independent of each other, they don't just strike each other by chance, they inform each other. However, chance (always relative) remains a very important actor in reality, it even plays a decisive role in preventing determinism (linear) from locking the organization of reality in on itself, but it isn't alone, it comes to terms with, among others, its brother the inequality of probabilities (stochastic variations) and its sister the certainty that someday even the improbable will occur.

If there were only noise and chance (equality of probabilities in an isomorphic system) ruled supreme, I could take a photograph no matter where and at no matter what period of history and it would always be the same thing. Looking at my photographs, I could never classify them according to distinct places and different dates. You will tell me: the atoms, the stars, the elements are at different places from one moment to the next. On the photos, they are indeed not exactly at the same spots. It is true that with an extraordinary memory, a computer might identify the differences of distribution, but all these situations would be equivalent.

Are they equivalent? Because, for an intelligence, they would be perfectly equivalent situations. Which is to say? The intelligence is precisely what can register a difference, not of distribution, but a difference of information, of organization. For example, you receive a coded message. You can't manage to decipher it. The text contains more than twenty thousand characters. I ask you to

²³ Chance is defined here as an equality of probabilities. It is distinct from *stochastic* variations, quantities subject to probabilities of distribution, for a hesitant and intelligent behavior may look from the outside like stochastic variations and it becomes very hard to distinguish between an artificial intelligence and an intelligence that is intentionally creative but very hesitant.

²⁴ As we will see in numerous examples, an absolute, in this case absolute independence, brings with it an absolute dualism between the container and the content and this dualism leads to a paradox with no possible solution (an aporia).

rewrite the coded text as it is without looking at it again (pure reproduction of what appears to be a simple distribution). You would need an extraordinary memory to reproduce the same distribution, for you understand nothing (on the surface you don't see any "logic" in this distribution). The elements of the code appear to you to swarm randomly, like sand in the wind, but this is only an illusion. For the one who has found the code will reproduce the organization with ease even as he or she accepts several differences of detail in the distribution. She doesn't need to learn everything by heart, she has found an order, an organization, principles of relationship, equations. She can produce something equivalent even if the atoms aren't situated in the same places.

Since intelligence is what finds simplicities in complication (in order to understand a complexity), intelligence is the organ of order (of organizational order). It is also the organ of the perception of movement, that is to say of the evolution of changes in organization itself. All in all, it apprehends music through what sometimes seems to be at first glance only noise.

Without intelligibility, memory would have to be colossal to faultlessly reproduce a complicated state, and in reality there are always plenty of elements and they are constantly in motion... But with the intelligence of the thing, we need much less memory, for different realities can be equivalent, movements seemingly strangers to each other can follow similar courses. A series of sounds contains music. More than that, we can grasp the essence of the movement without all the details, like a musician who perceives the same melody through hundreds of more or less noisy variations.

Nature is coded, in the sense that it is an enormous network of communication of information. This is why, if we look at the sky attentively, nothing is the same from one spot to another, but there are equivalences, there are hundreds of kinds of stars (not the same, but equivalent according to their kind) and all sorts of strange ways of communicating between them. There is a language, and we can learn to better understand the cosmic interrelations. It is also the reason why there is a history of the cosmos with differences in the levels of organization, of evolutions and regressions, of differences perceptible by the intelligence and not by memory alone.

Why is a difference perceptible by the intelligence and not by memory? I am coming back to this. If, in my absence, you changed the order of the books in my library, let's imagine that they were in alphabetical order and you reversed this order, by his or her memory alone, a very gifted person who understood nothing of the alphabetical code might locate hundreds of changes in my five hundred books, but by my intelligence, I quickly grasp that in fact you have made only one. This change was a movement. A modification of the harmony, of the organization.

Noises are all different, but all equivalent, it is the lowest possible level of music. In music, differences exist which change the equivalences. Noise is zero information. Music includes information.

What is order in the organic sense of the term? The possibility for any intelligence to perceive time through change. Either order diminishes, or it increases, or there is a blending of the two. Sometimes what is close to noise is organized into music, and what is very musical falls back into noise.

Order here has nothing to do with perfectly square squares and perfectly round circles. On the contrary, there is infinitely more order in an amoeba than in a crystal. We are speaking of organic order, we are speaking of a scale between noise and a level x of complexity (not complication, but complexity).

Order is a concept inseparable from time, that is to say, inseparable from a direction in time (from noise to music or from music to noise). Time is a dimension that has at least one direction. It is irreversible only if noise returns to noise. Outside of noise, it can be located by its direction. Order is exactly and very precisely what allows an intelligence to perceive time (a difference of quality, therefore of information and organization, between two moments). If order didn't exist, time would not exist, and neither would intelligence.

Something is intelligible if a movement in the organization gives it a temporal structure, a history. It would be an unbelievable miracle if there were intelligence somewhere and, everywhere else, an absolutely disorganized chaos. We can imagine chaos as the end product of an infinite cosmic dilution, but not as an absolute state: music in the process of turning into noise. We can imagine death, but it supposes life. It is impossible to think that chance is transformed by chance into something more and more organized, this would be to imagine a corpse coming to life, a return to religious myth. If the evolution toward the organization of animals by pure chance is indeed Darwin's thought, then Darwin did no more than apply a religious model to nature. He would thus have eliminated God (the Computer) so to speak, in order to bring in by the back door magic in the most radical sense of this word, that is to say an incomprehensible rise in the state of biological organization (for in a progression by trial and error, the error doesn't explain the trial).

However, when we give it a second thought, we can't imagine that order might go to absolute disorder either, for this would have been done long ago, and we wouldn't be here to know about it. Order and disorder are indispensable one for the other. And intelligence is therefore part of the game, and the game can be played only if there are two opposite hands: order and disorder, chance and differentiated probabilities, evolution and regression, memory and intelligence, reproduction and metamorphoses.

If intelligence plays a role, consciousness is what permits us to situate intelligence itself in its role. Consciousness perceives the movement of intelligence itself, and it also perceives what it is struggling against (not matter, but noise). In short, the

environment of the human psyche gives intelligence a hold, and intelligence gives a hold to consciousness.

We have dodged the horror! Yet the adventure is only beginning, for it isn't necessarily more reassuring to find ourselves in a universe (at least partially) intelligible than in a radically unintelligible universe.

CHAPTER 2 : Intelligence and reality

Order, when it is organic, resembles a music that extricates itself from noise. Between the cosmos and intelligence, there is a community of mind, for both of them vibrate to music (information). For each one of them, music (information) is a condition of existence. Both are movements and evolutions toward levels of organization either more complex or simply different. Both ascend toward music, but also descend toward noise as if to feed from it. Consciousness and intelligence are nothing other than the ability to create and perceive movements of information, levels of harmony.

But what is the relationship between intelligence and reality? Let's do a mini-experiment. Let's allow intelligence go to work on noise and then return to the process and try to learn something about the relationship intelligence has with reality.

First step: let intelligence work on the notion of noise itself:

- 1) noise par excellence, chance, the equality of probabilities in an isomorphic space. This might be, for example, a handful of perfectly symmetrical particles which strike each other and rebound in every direction. In physics, this would be pure heat.
- 2) For intelligence, noise or heat is a collection of little balls totally alike and above all independent of each other. Therefore there must not exist there any electric or magnetic (or any other) relations that would make the particles interdependent and structure an organization (chemical, for example). If not, the heat, the noise, is not pure.
- 3) The environment must be isomorphic, for let us imagine that the environment is a funnel-shaped chamber, then the diffusion would not be the same at the base of the funnel as at the top, so this would already be a bit of information. In this case the information would come from the container's particular form. In order to remain pure noise and pure heat it must just not have any forms. An absence of forms in the environment is not exactly just anything, it is called space. Space is not absolutely indeterminate, but it is an optimum of indetermination, and this is what gives freedom, independence (the greatest number of theoretical possibilities of movements, impacts and new developments), distance and

consequently of non-influence (several influences, like gravity, act proportionately to the inverse of the square of the distance).

4) In order to allow the maximum freedom of movement, an environment is needed which, without being absolutely anything, must even so remain very indeterminate (so as to permit determinations, organizations). This cannot be just any forms or sets of forms, but the closest possible to an absence of form. Space therefore is a precise indetermination: a nearly complete absence of form and not a set of forms which lose their form in forms which lose their form (like a hollow triangle which, with no determination, is constantly losing its form and in which there are hollow triangles which also lose their form in no matter what way, and in which there are other distortable hollow triangles and so on). No matter what forms losing their form in no matter what forms losing their form would not form a favorable environment for noise. It would be an unintelligible monster, while it is possible to think of noise as chance in movement.

5) If the environment must be an almost perfect absence of form, the particles cannot have just any form either. There again, if the particles had forms that changed with no determination, not even a regularity in indetermination, not even therefore a chance determination (which is an equality of probabilities and therefore a regularity), we would not have a perfect noise, but an unintelligible monster, neither noise nor music. In order to obtain noise or pure heat, the form of the particles must permit equivalent collisions.

6) In short, if noise is defined by an equality of probabilities of movements in every direction, it demands that space tend toward maximal freedom (permit indiscriminately the greatest number of possibilities for movements) and that the particles adhere to a definite and stable form...

Noise is surely an almost complete absence of information, something which is as close as possible to information zero, but it is not however an inversion of information. An inversion of information would be forms losing their forms with no possible intelligibility, even that of noise or heat, which is a concept of minimal information. Reality never descends below the threshold of intelligibility, into a sort of completely unintelligible monstrosity, for there are conditions that are just as necessary for mental existence as for physical existence. The only spot in the entire cosmos where it sometimes seems that unintelligible monstrosities suddenly appear is in the human brain or in the crush of a crowd. And yet, psychology and sociology manage to find a logic of madness there. However it may be, if it is possible in a human being, it is possible for a time, for continuance requires a minimum of coherence.

Let's interrupt here this account of the theory of noise (still so incomplete). It is a theory. All we have done is think toward a goal: defining pure noise. We have begun with noise, because a diver in deep water can't empty a watering can of water in the ocean, he must find an absence of water and then water the ocean. Because we think, we are plunged in thought, and we must return to the surface, that is to say the interface between the thinkable and the unthinkable. To return to

the simplest, the minimum of thought: noise. At this minimum level and above it there is the thinkable. Below, in the idea of things losing their form in things losing their form no matter how, without the slightest possibility of discerning any logic whatsoever, we would be in absolute unintelligibility. This non-thinkable does not have what is needed to exist.

Noise has an opposite, music, and it may possibly also have an opposite in absolute unintelligibility. But for these two opposites to be dynamically in relation, they must both exist. By meeting, noise and music can produce the world. But the intelligible and the absolutely unintelligible cannot meet at all.

When there are two opposites in relation, noise and music, we begin with the minimum so as to pass from the simple to the complex. It is a pure logical constraint. We must not suddenly add a big explanation (of the kind: with time we arrive at everything), because the essence of explanation is to pass from the simple to the complex, from noise (absence of information) to music by small steps.

Now let's examine a small portion of the theory of noise (or of heat). We are struck by two things: first, as soon as we put together chains of reasoning, even in order to define the simplest thing (noise), it quickly becomes complex. For example, when we used the expression "no matter what", we had to differentiate at least two "no matter what's": (1) the "no matter what forms being transformed no matter how" isn't the same thing as (2) "an equality of possibilities of movement in every direction". We might have been able to distinguish several other ways of envisaging indetermination. But the one we have retained has been sufficient for differentiating noise (minimum of information) from another thing, unintelligibility: moving forms losing their form and being transformed with no coherence. We see immediately that this monster, if it could exist, would throw us into a state of total powerlessness. We would forever be its victims.

Secondly, the chain of reasonings cannot go on ad infinitum. Theoretically it might, however. For example, the particles we have been speaking of present a problem. Indeed, a particle which wanted to let theoretical chance into its rebounding movements could not be an absence of form, for it is a particle and not space. And in order to produce the maximum of indetermination in the rebounding movements, the particle would have to have a determinate form: the sphere. But the sphere is valid only if the universe has three dimensions.

On the basis of these two small observations (there would be many others to do), we observe that to think of the simple follows a process that rapidly becomes complex. We call this process "logic". At each step of the reasoning, there are junctions, possibilities of going in one direction rather than in another and sometimes one way is logical, sometimes several. We walk in a mental space that is therefore not isomorphic. We can't go no matter where, no matter how. We follow a coherence. And we know very well that if we didn't follow a coherence,

we wouldn't go somewhere by chance, we would go nowhere, we wouldn't even succeed in going in circles.

In thought, the danger is not silence, the background noise, but forms that lose their form and are transformed with no coherence. This laziness of mind is not background noise, it is the monster, neither logical nor artistic, only temporarily accessible in a human imagination which does not reflect. Yes! You will tell me that perhaps there is a code in this illogical monster... If this is the case, it has to do with something else, it's not the monster, it's a music I don't understand yet, archetypes in the book of consciousness not yet identified...

But let's continue our observations on our little attempt at a theory of noise (or of heat). The plunge we are going to take here is decisive. As soon as we began to reflect on noise, we knew that when we would have to confront our (still so incomplete) theory of noise with reality, we were going to face up to a double result. Our reasoning, if it is well done, will, as soon as it is confronted with reality, be neither altogether false nor altogether true. And the reason why a coherent rationality advances toward the least false without ever reaching the true is much more interesting than one might think.

Take space for example. In our little theory of noise, space is seen as having to be without form. Since space is the opposite of a particle, for the latter the absence of form seems easy to define: freedom of movement in every direction. Yes, but in just how many directions? Is it a space of three dimensions, of four, of five, of eleven dimensions?

When logical thought meets reality, it expresses two characteristics: 1) something in reality seems ready to conform to logical reasoning, as if reality too had opted for logic; 2) but it had to give up certain choices (not obligatory in logic) which at first glance appear arbitrary: for example, the number of dimensions. A choice was made, and this choice does not correspond to a logical, but a practical necessity (it was necessary to choose, for if not it would still be thought and not reality).

Logic brings us closer to reality, but the characteristic of reality is not to be theoretical and therefore constrained to choose one reality and not all realities (at least if we stick to "our" cosmos), for perhaps every possible cosmos exists!

The number of dimensions of space seems to be one of those apparently arbitrary choices, for equivalences of noise and heat are conceivable for all types of space, whatever their number of dimensions (necessarily superior to one). It would seem as if reality, in our cosmos in any case, had chosen an eleven-dimensional space with only four dimensions expanded (if we trust the most advanced string theory). It is not certain either that reality chose that the minimal granules of energy-information be spheres (which would suppose three dimensions), nor even, as it was thought for a while, one-dimensional "objects". It seems that these "granules" are two-dimensional "objects", little bits of strings that lose their form (but not in just any way) in an eleven-dimensional space...

It doesn't matter whether string theory is right or not, what we are seeking here is to better determine the strange relation of intelligence and reality. We might say that reality is highly logical intelligence (for the more sophisticated we become in logic, the more we bite into reality), but that it has to do with an intelligence which dwells on some choices rather than on others when each of these choices is as logical as the other. In short, reality may be practical intelligence.

Let's summarize one more important point: reality appears to imitate not our present logic, but the "ideal logic" toward which we are straining, as if it were a length ahead of us; it makes practical choices (where logic permits several possibilities, it makes a definite choice). Reality resembles, then, an "ideal rationality", but practical: there appeared to be several coherent realities, but it was necessary to choose.

However, and this will become more precise as we go on, the reality in which we are immersed seems to have chosen not one reality among others, but the one which allows the drawing-board to be opened to the maximum extent, as if it wanted to optimize the possibilities of complexity, push the notion of limit as far as possible without falling into the trap of the infinite. The thinkable, like reality, is only possible in the relative, in the connected, in the practical, but it seems that reality has pushed the relative in the direction of an optimum of possibilities and complexity.

CHAPTER 3 : The absurdity of the world?

Some people have a good sense of humor, others a good sense of the absurd. "Ab-surd: deaf, inaudible, dissonant, that which breaks the laws of logic, that which is unintelligible", the dictionary tells us.

The sciences, especially physics, chemistry and astronomy, demonstrate more and more clearly that the cosmos is to a great extent intelligible, that is to say, that we can discover mathematical and comprehensible laws which describe the universe rather well. We can simulate on giant computers universes unified by known laws (theory of relativity and theory of quanta) and identified constants which on the whole resemble ours. It is true that something always eludes us, but new holds on reality are constantly being perfected. The cosmos lends itself at least partially to our intelligence, and what is more: it defies it, it forces it to become more supple and more complex. What appeared infinitely complicated becomes mathematically simple as mathematics grow more complex!

Strange that nature is not that strange! We are infinitely small in this vast astronomical ocean and yet we manage not only to drink a little of its water, but also and above all, to bite into its totality. Against all expectations, cosmology (the science of the all) holds up. We have arrived at an astonishing conclusion: as a

whole, the universe is mathematical, but a mathematics we must continually discover through the deepening of our own intelligence.

How is it with the arts, with aesthetic intelligence? Since the beginning of the artistic process (in the paleolithic), the human being has considered the cosmos to be rather beautiful and harmonious. We can argue about the relative beauty, but nonetheless we are compelled to face the facts: the cosmos is harmonious, and it is even what brought about the idea of harmony in the human being and produced the first aesthetic sentiments. In short, scientific intelligence and aesthetic intelligence don't feel helpless in the face of the universe, even if it does remain mysterious. It imposed itself as an object for science and a model for art.

A universe totally absurd on the logical and aesthetic plane would not act like this, it could never be apprehended as a totality. We would have no hold on it other than through little packets inconsistent with each other. It would be as fickle and unpredictable as a clown in a carnival. To tell the truth, we feel that only a human being could manage to produce behaviors incoherent enough to match the definition of the absurd.

Strange paradox: the illogical and incoherent forces and gods of Antiquity abandoned the cosmos with the advance of science; today, the cosmos appears a thousand times more coherent than the human being. And yet this human being claims more than ever that the cosmos is absurd! Why! How is it that the more the cosmos is shown to be mathematical and harmonious, the more absurd it seems to us?

This is altogether normal: the more a being's cruelty seems systematic, automatic, without hate and without emotion, the more it is for us an absurd cruelty. If some being took pleasure in making fragile little animals conscious and then killed them systematically, if this being acted thus, logically, rationally, systematically, without leaving the animal the slightest chance to escape death, if it added an aesthetic concern to its crime, we would correctly conclude that we were dealing with an unimaginable monstrosity. And if it is an impersonal, automatic, cybernetic and mechanical behavior, this adds to the feeling of the absurd, the "deafness" of the cosmic system to human suffering.

In philosophy, when we come upon such a contradiction, the agreed-upon thing to do is to move the machine in the opposite direction. Then, simulate on our computer a world without absurdity, therefore a world intelligible on the scientific plane, on the aesthetic plane and on the ethical plane. Let's simulate a cosmos in perfect conformity with the values we wish that it had. A just universe. No! For what do we know about justice? We must go further. Let's say instead a cosmos made this way: the more we study its physics, its aesthetics and its ethics, the more we say to ourselves: this is surely what had to be done. We imagine the idea of plane geometry, but no, our cosmos shows us a more mathematically satisfactory idea of geometry. We imagine a simplistic idea of beauty, and our cosmos shows itself to be infinitely more original. We imagine a limited idea of justice, but no,

our cosmos shows us a possible justice much more demanding, but much more satisfactory.

Obviously such a simulation is impossible, since we would need to know what we don't know. But let's imagine. Every day of our imaginary experience we are forced to face the facts: the universe is ahead of us on the mathematical, aesthetic and ethical planes. The more we know ourselves, the more we know it, and the more it satisfies us.

Let's enter this universe. We are in a universe where we have nothing to find fault with except our own ignorance. It always has the last word. We truly are its children: to the degree that we grow in wisdom and in knowledge, it satisfies us. It meets our expectations to the degree that we grow in the understanding of our expectations. We are in a perfect cosmos.

Let's now ask the question: in this perfect cosmos, what meaning does our life have? We are forced to admit that our life has no meaning. It is totally absurd. What meaning would a life have in a perfectly harmonized world? The universe would only be a perfect teacher. Once the knowledge was acquired, there would be nothing to change in this perfect world. Once we had attained wisdom, we would be totally useless. For our life to have a meaning, the cosmos would have to be neither absolutely absurd nor absolutely sensible. We have to experience some disagreements with it, we must have something to find fault with. We must on some plane become "separated", a "rebel", and later a participant.

Let's return to reality. On the level of its physical "mechanics", we have nothing to find fault with, everything to learn, the cosmos is entertaining and arouses all our intelligence, we are even compelled to collectivize our intelligence and cooperate if we want to advance in science. It civilizes us. On the level of its aesthetics, we have a little more to add, it teaches us, but we believe even so that we can embellish it a little. Alas! On the ethical level everything is rotten, we feel as if we have to do everything, and even start from below zero.

Now, on reflecting, we immediately ask ourselves how a cosmos so amoral could create a kind of animal gifted with ethics, concerned with morality? We ought to have been in its image: carefree predators, beings "pre-protected" from death. Bergson, Teilhard de Chardin and others have answered this question in a biological way. For the animal, survival passes through obedience to instinct. For an animal as lacking in natural defenses as the human being, collaboration alone ensures survival. In other words, ethics is a survival reflex for a being too gravely vulnerable, a naked animal. It is necessary to repress our "instincts of submission" and learn to collaborate; if not, we won't make it. But it is not a reflex, Bergson observed, it is the result of a reflection, the result of realization. The human "fore-sees" his fate in the struggle for life and tells himself: if we don't learn to collaborate, our species will disappear.

Let's sum up. For human life to have a meaning, the cosmos must not have too much of it. For if the cosmos had already achieved coherence, beauty and justice, what would be the use in living? To have a meaning, two things are needed: a point A and a point Z. Next, there must be a road between the two. Also, justice is a survival technique for physically fragile and mentally reflexive animals. A step ahead then on the road to the complexification of living. A "step" isn't the right word; we would have to say a leap instead, for it does not concern a reflection on what has happened, but on the future: it is up to us to make the possible future through thought, reflection and action.

This gives meaning to our lives or, more exactly, an orientation. We are, perhaps, scouts-inventors-designers-directors, people who plunge their consciousness into the obscure and undetermined cavern of the future with the mission of adding a story to the edifice of life, the story of creative and participating thought. If all this holds up, we may have demonstrated Leibniz's famous thesis: We are plunged in the best of possible worlds. And it is the best because it is not perfect.

But that's the sore spot. The beautiful and intelligible world in front of us is not just a little cruel, it doesn't impose just small sufferings we are able to take on, it doesn't nibble our ears like the mother lioness does to stimulate her little ones, no, it seems to betray the one it appoints to do justice. It shoots the scout, the human being, in the back. "Yes, you work for me. Yes, go ahead. If you want to survive, drag the ball and chain of your old habits up to the reign of justice, but I am going to crush you long before you get there. There will be nothing left of you. The absolute psychopath, that's me."

The world is absurd to the point that human life itself is absurd. This conclusion, if it is true, if the proof is complete, if the case is heard, then we are assured already that the human species will not survive. The suicide of the species is inevitable. Conscious being will go on general strike and its absolute revolt will go to its own death. This idea of death kills.

To escape absurdity, there must be at the beginning a cosmos unfinished in one of its key aspects. In this case: the ethical dimension. It is necessary to "fore-see" and to hope for a better world. All in all, we need to have a situation of departure A, a situation of possible arrival Z, and an actor who is real, that is to say conscious and creative. Yet this would still be absurd if no continuity connected point A to point Z. If all the actors succeeded one another like relay runners shot dead one by one at the end of each relay, there would be runners, but there would be no one to experience the course from one end to the other. For life and existence to have a meaning, one point is key and unavoidable: there must be a consciousness that enjoys, and this consciousness must be united to the actors themselves in one way or another. In short, there must be a consciousness that is shared (multiple in its acts) and participating (united in a totality able to enjoy the surpassing of self).

We will return to the problem of evil in the fourth part of our essay. For the moment let us dive into the logic of physics, that is to say into the logic of an

environment which transforms itself, by itself, in itself, not in just any way, but in an intelligible and durable way.

CHAPTER 4 : Unimaginable physics

Why has popular scientific culture remained in the nineteenth century? Why do theories as brilliant as those of relativity, of quanta, of self-organizing systems (order coming out of disorder) not succeed in entering contemporary culture? After more than a century, they remain more or less confined to their specialities. Culturally, we almost totally ignore the universe our contemporary physicists move in.

We can explain this delay in several ways, but something strikes us: when, at a newsstand, we finally decide to take the magazine *Ciel et Espace* (Sky and Space) rather than *Le Monde diplomatique*, we are instantly transported to the other side of the borders of imagination, in something which transcends insanity, something which, by nature, can no longer be insane. The cosmologies of Egypt, of Greece, of China, of ancient India, the universe of the Incas, the Innu or the Australian aborigines, the cosmos of religion, the cosmos without gods, the cosmos of the scientists of the Renaissance, all these visions of the world are imaginable, and are therefore collectively insane in nature, but there, after reading an article on nuclear physics or the astronomy of galactic clusters, we are absolutely somewhere else. Citizens deprived of the great contemporary theories live in imagined worlds; whoever takes an interest in the latest theories of the physical sciences finds her or himself in a literally unimaginable world.

The universe proposed by these theories surpasses the imaginable and thus is no longer insane in nature. Let's take the inflationary theory of the Big Bang. It speaks to us of a cosmos that emerges after 10^{-43} of a second of life (one second divided by a billion, redivided by a billion, redivided by a billion, redivided by ten million), of a grain of energy the size of 10^{-33} of a centimeter (one centimeter divided by a billion, redivided by a billion, redivided by a billion, redivided by a million), with a temperature of 10^{32} Kelvins (billions of billions of billions of billions of times hotter than the sun), with a density of 10^{96} grams per cubic centimeter (billions of billions of billions of billions of billions of billions of times heavier than the entire solar system in a thimble) and this "atom" of energy after 13.7 billion years becomes a sphere without edges, "presently" with a radius of 47 billion light-years (even if the light of the most distant visible objects reaches us after "only" 13 billion light-years).

Such a 'proposition' is not in the nature of insanity because it doesn't come within the competence of the imagination. A number like a diameter of 10^{-33} of a centimeter can't be imagined. Cut a centimeter of plastic in a thousand pieces and already you can no longer see the particles. Take this grain of dust and cut it again

into a billion. Then another time. What you hold is already a thousand times thicker than the granule of energy-information that is all the universe at this moment!

If you were to be asked what began this universe of the Big Bang, you would say: "Nothing." "No!", the scientist would retort, not "nothing", but a granule 10^{-33} of a centimeter in diameter. You must firmly grasp the unimaginable character of numbers, it's decisive. Remove the unimaginable from numbers, and you would be left with the following sentence: "All began with almost nothing, infinitely hot, infinitely dense, infinitely simple, and this nothing has given us an infinitely great and infinitely complex universe..." Now you are in religious madness completely. To get out of this madness, you must hold on to the unimaginable character of numbers. Numbers, inasmuch as they are literally unimaginable, save science from madness. With science, we leave the domain of beliefs and enter the domain of the unbelievable. Logic and mathematics have gotten out of the imaginary world, have become emancipated from images in three dimensions.

The cosmology of our scientists does not transcend insanity simply because of the greatness of the numbers; the concepts, more than the numbers, are in essence unimaginable. For example, the atom is no longer a particle, nor even a set of particles, but the "result of interactions" between "granules" of energy-information. These strange granules can only be localized in terms of probability, not of probabilities due to our ignorance of details (like the probability that a die falls on six), but of more fundamental probabilities, waves of probabilities that assign them several locations: the granules of energy-information are at such a spot and at such-and-such others. Not that we can't localize them, on the contrary, we can localize them very precisely with very precise probabilities, but before the act of localizing them, they are virtually, but "really virtually" localized in several spots...

This non-imaginable logic that gives rise to non-imaginable mathematics is much more logical than a logic of the imagination, for it succeeds in tying together two opposites like the continuous and the discontinuous which are both necessary for a dynamic to be at the same time thinkable and real. We must conclude therefore that the thinkable (logic) is not the same thing as the imaginable; we can think and calculate what we cannot succeed in imagining. We are not condemned to the narrow space-time of our imagination. It's not the imagination (as organ of images) that is greater than rationality; on the contrary, rationality envelops the imagination.

Let's return to our granules, strange, to say the least. These granules which are never solely energy or information, but always a little of the two, can have a mass or none at all, can be regarded as a wave and also as an incredibly small splinter of energy-information. These strange "granules" (which we must never imagine as like a particle of sand or dust) have the property of self-organizing in such a way as to form extraordinarily complex and dynamic little universes. The movements

of an electron around a nucleus of hydrogen placed in an environment even a little bit real (therefore not absolutely isolated) are already so complex that they defy the most powerful computers.

If the imaginable gods of past religions died under the rationalism of the eighteenth and nineteenth centuries, the imaginable matter of past periods of history (indivisible grains unable to be at two places at once) disappeared in the physics of the twentieth. It is precisely the unique distinction of Einstein, of Planck, of Prigogine and the other great theoreticians of that century to have abandoned the ancient idea of a psychological omnipotent god (projection of ourselves). The twentieth century is perhaps more the death of "matter" (of an imaginable idea of matter) than the death of God. In fact, the two (mind and matter) vanished beyond the wall of the imagination, for they are now welded into reality at a supra-imaginary level in the form of "granules" of energy-information.

CHAPTER 5 : Power to think reality

The miracle is that we can think reality by going to the end of a rationality whose ability to reconcile opposites²⁵ we must, however, refine, opposites such as the continuous and the discontinuous, the tiny and the immense, the simple and the complex, the dense and the diffuse, the local and the universal...

Astronomy emerged in Antiquity starting from the time when people thought they saw the sky was organized in circles. What reason (still subjected to the three-dimensional image) saw as the most perfect form was in the sky! A little later the ellipse was discovered, a form even more perfect than the circle (the circle is only a special case of the ellipse in which the two foci are unified) and even better represented in the sky.

How is it that the base of the soul (geometry) is found in the base of the sky? In that distant time, the sky seemed a little like our mirror. It was worth the trouble to scrutinize it, for it revealed us to ourselves. Astronomy was then seen as the study of depth psychology, freed of the impurities of animal life, a study of the pure Man.

There in fact is my question in all its naïveté: with the arrival of contemporary astrophysics, does this path still have any meaning? Is the cosmos the basis of our soul? Can the psychology of emotions lead perhaps to a fundamental psychology by examining the deepest structures of reality? And here, even more naïvely, is my impression which, I agree, is totally heretical: the reality we are discovering with

²⁵ Not just any opposites can meet and form a dynamic. For example, being and nothingness, the intelligible and the unintelligible cannot meet, for one can exist and be thought, the other not.

the new sciences speaks to us of consciousness, of intelligence and memory at a level of universality that includes us. Not only does man necessarily project himself in what he discovers, but also and above all, the cosmos projects itself into the human being. We are ourselves a projection of reality before we project ourselves into reality.

To be sure, with Einstein, space-time became a reality which no longer so easily fits the circles and ellipses of our imagination. Imagination must yield to a more consequent and coherent rationality, but this may as a matter of fact be able to reveal to us something about consciousness. At the base of consciousness we find the "habits" that reveal the fundamental contradictions (for example: unity, discontinuity) of being and thought, and these habits structure us even more deeply than the archetypes Jung spoke of. This is why the study of the world, of the total environment, of the cosmos, that is to say, cannot be forgotten when we wish to write a treatise on consciousness that is even a little bit complete.

In our reflection on the total environment, we will be following one dimension of reality in particular. Since the night of time, light has been the analogy par excellence for explaining consciousness. Is it just a poetic metaphor? Or does light constitute a concrete element of a concrete consciousness which might be the universe itself? In order to know it, it is best, perhaps, to take a closer look at light scientifically.

Einstein's theory of relativity comes from the discovery that the speed of light is a fundamental constant of astrophysics. Quantum physics is the result of a subtle study of light. Self-organizing behaviors tell us even more about light. Finally, biology appears as a veritable factory of luminous energy. These are the steps we will be following. Through them we are seeking the foundations of consciousness, for we share with the cosmos a basis which is something like thought, memory and even consciousness perhaps. Our consciousness is not this basis, but the basis of our consciousness is perhaps the same as that of the universe. For this reason, light would not only be an analogy of consciousness, it would be a reflection of that consciousness (a little like the electrochemical waves of the brain are reflections of consciousness and of human intelligence).

We should at this point make three observations: 1) There is nothing original in this vision, it is even the oldest vision of the world and the most universal, shared by nearly all mythologies and philosophies until the Middle Ages. Yet it is poles apart from the modern vision, subjected to the categories of subject and object. 2) Such a vision is not a hypothesis, for we can't prove it scientifically. This would be like trying to get up by pulling your hair. If consciousness is in the subject as well as in the object, it cannot be proved in the object as it is proved in the subject, for these two categories by definition cannot meet, and that, in classical thought, consciousness is what by definition makes the subject a subject as opposed to an object. We can't go forward with a renewal of the ancient vision of consciousness without getting out of the subject-object categories. 3) Such a vision leads neither to a universal materialism nor to a universal spiritualism for the precise reason that it destroys the matter-mind dualism and replaces it with a unity of virtuality (the

continuous) which enters into the "granulation of self" (the discontinuous) by the actualization of interactions that are at the same time energy and information.

Teilhard de Chardin said that consciousness cannot be uniquely a result of the brain; it is the brain that is first of all a result of consciousness. The eye makes the object, to be sure, but reality made the eye before the eye constructed objects. If consciousness emerges from interactions between the neurons, it is because the neurons have first been produced due to interactions of energy-information. And what can drive the energy-informations to go toward complexity? Simply the fact that information is an immanent condition of reality and it is complexity in potential. But to say this is to say that consciousness is not substantially distinct from physics. To put it simply, when consciousness observes itself from the inside, it is called consciousness of self and when it is observed from outside, it is called energy-information.

If the separation of subject and object is necessary for the scientific method, it is also necessary to go beyond it to find a meaning for our relation with the real. Scientific reasoning is subject to the categories of subject and object, and this is what gives it power. Science is a subject which studies an object and never the reverse. We must keep science within its limits. It is very effective when it comes to reassembling a structure, to rebuilding it from the simple to the complex. But it is not alone in the search for truth. There are other forms of thought much less sure, much more fragile and unstable, which have as their sole and unique point of interest the ability to include the subject-object border in their study. From the point of view of certainty, it is a very meager advantage - it will give no certainty - , but it is an appreciable advantage for discerning, in the fog, the meaning of human life. Now, who can dispense with gazing into the horizon to better embrace his or her own life?

Nevertheless, we must always know when we are in science and when we are in philosophy. In this essay, we are still in philosophy. Contemporary philosophy argues about two possible responses to the subject of consciousness and reality:

1) The principle called "anthropic" is satisfied with saying that this question is there only because we are there. If the universe hadn't by chance ended up with a conscious animal, no one would be asking the question. It is not because the universe is conscious that we are here, but it is because we are here that it appears conscious. The fact remains that it is until now impossible to find a way, even a possible way, that goes from the infinitely simple to the infinitely complex simply by the notion of chance, especially if we define chance in a strict manner. The notion of information is unavoidable. Yet we don't succeed in defining information other than by making some form of intelligence intervene (of tension toward complexity, or simply something that renders the concept of information intelligible).

2) The principle of logic rests on the fact that complexity can exist as such only if there is in reality an intelligence that is logical (or at least mathematical) in action. We recognize a certain rationality in reality because there is one. And this

rationality is progressing; therefore it is conscious. Probably not conscious as we are, but conscious according to a more fundamental definition of consciousness.

Darwin is the emblematic figure of the first vision. Bergson and Teilhard de Chardin are the emblematic figures of the second. But above all, modern philosophy has chosen to discredit the question itself. This is why it is impossible to imagine that we take seriously a vision of consciousness such as we are proposing here. We know very well that as soon as we got past the first part of our essay on consciousness, we entered the fringe. Nevertheless, as humanity, we are at a dead-end on the economic, psychosociological and above all the environmental planes, and it is not certain that we can get out of it without resuming the search for meaning in human existence.

One of the reasons why the discussion has been discredited is that the first vision is supposedly secular and materialistic, and the second, religious and spiritualistic. But this is thinking with the categories of the eighteenth century. A considerable delay.

CHAPTER 6 : The intelligence of space-time

Certainly, a theory does emerge from an intuition; however, a large number of intuitions are essentially a cluster of reasonings that have unfolded at such a speed that it is hard for us to reconstitute it later. Sometimes weeks of effort are needed to rediscover the details. Nevertheless the basis is logical. When I say logical, I don't mean conforming to a model of logic. Just that logic, like mathematics, exists in the thought of human beings like physics in the cosmos, but we only partly attain it, and always by going toward the least false.

The goal of this chapter is to explore the type of reflection that can take place in fast motion in the mind of a theoretician like Einstein. For we are not seeking only to understand a theory like that of relativity; we want above all to see, feel, perceive, become aware of what happens between intelligence and reality.

When we wish to define the notion of space, we are forced by logic to manipulate its opposite: the granule²⁶. The theoretical granule is the smallest possible thing which can be located at one spot and which stays identical to itself so long as it experiences no accidents from the outside or the inside (which follow a certain logic). Starting from there, space becomes the set of possibilities for locating the granules and measuring their movements. By means of space, the granules can be

²⁶ We prefer to speak of granules rather than atoms because the atom is no longer considered to be the smallest part of energy-information. The word "granule" is here a general term which simply signifies that the opposite of space surely must exist, the smallest locatable part (not necessarily perfectly locatable) of energy-information.

here or there, go in one direction or another. Theoretically, space is thus a concept in a play of polarization: granules/movements.

We have our first problem: are granule and space two absolutely different realities, as an absolute nothingness and an absolute being would be, for example? In this case, we would be stopped by an insoluble problem (an aporia): how can two absolutely different realities be in relation with each other? We are forced to consider that the granule and space have something in common. It is precisely the role of space to be what all the elements of the cosmos have in common. Space is by definition what is shared by all. We must then consider that a granule is one way that space is. We will certainly find in the granule a minimum of the characteristics of space. Therefore the granule will never be able to be located absolutely, never be absolutely stable. It will doubtless be a cloud of maximal condensation, a condensation of the probability of being here rather than being there.

But let's talk about space. For there to be space, heat (noise) must not be at zero degrees Kelvin (absolute zero). For at zero degrees Kelvin, perfectly at zero, there is no interaction between the granules and thus there is no space, for nothing can be located. Let us carefully observe that here it is not a question of trying to conceive of space *before* it was occupied by granules, for then we have a pure abstraction that is not even really thinkable, that permits no development in thought, for in order to develop, thought needs a minimum of two hands, in this case: granule and space. And the two hands necessarily share something in common; in this case, it is the foundation of space-time, to which we will return later, and which is no doubt a state of energy-information.

Only by leaving zero does space become possible. Is there, at the other end of the spectrum, a degree of high temperature and pressure beyond which space is no longer possible? The question arises. Yet if we remain in pure theory, we are able to observe that if the granules no longer have any independence at all, if they cease being multiple and become perfectly one solitary thing without information and without energy, there is no space either. Space must remain between a tiny bit more than absolute zero degrees Kelvin and a maximum not defined, but doubtless limited (not absolute). Moreover nothing in reality, nothing in the world of the thinkable either, can be absolute, for the absolute (nothingness or infinity in every direction) blocks thought since it eliminates the relative, thus the "connectable" in thought or in reality.

Between these two absolutes (zero and infinite pressure at infinite temperature) space connects granules. Why is this concept of connection between granules necessary? Because a granule cannot be locatable in relation to space itself. Space, in fact, is just not an enormous granule in which there are granules; it cannot be a sort of crystal ball with things inside. For if this were the case, there would no longer be the possibility of movement. There would no longer be freedom.

Space has to be at the level of virtualities and granules at the level of actualities²⁷ (but never absolutely).

Space is therefore not a thing in which things are found. It is not a thing, but a freedom of movement. It is by definition the condition which permits the granules to interact with each other. But it is not an absolute of freedom, for then it would leave the universe of the thinkable and the real. It allows for connections within the maximum degree of freedom. It is non-intervention in exchanges.

The minimum of connection is location. Granules are not located in relation to space, but space is what allows them to be located. For this to occur, the granules must communicate, a little like birds. 'Tweet! Tweet! Tweet! I'm there. Yes, but where? Space must permit the exchange of signals. The transport of signals must have at least four characteristics:

-- the signal must be able to travel independently of the thing itself. The movement of things cannot by itself serve to locate them, for in order for a thing to travel, it must be able to change places and thus be locatable independently of its own corporal movement. The thing and the signal must therefore be distinct (but not absolutely) and travel differently (but not absolutely);

-- in pure space, nothing must interfere with the signals in such a way that they would be distorted by space itself; otherwise, we would be in the paradox of the transformation of the transformation of the transformation (ad infinitum) no matter when, no matter how. The mental monster that cannot be thought and cannot endure and thus exist;

-- the speed at which the signal is transported must not be infinite, for at absolute speed (which moreover no longer is a speed) things are so close together that there is no longer any distance between them, and therefore the possibility of locating anything no longer exists. At absolute speed, "here" cannot be distinct from "there". Space, therefore, can no longer serve to locate things. Now, this is its role;

-- the speed of transport must not be constantly changing. If this were the case, we would not really be able to locate things. No calculation would be possible. We would still be inside an unworkable mental monster.

The first thing that strikes us here is that we are logically compelled to utilize the concept of speed, and that the speed of the signal must not be the same as the speed of the things signalled. It must in addition be stable, constant. Now, speed surpasses time. To say: "it's far", or say: "the signal is taking a long time to arrive", is one and the same thing. Space quite simply cannot exist without time,

²⁷ In the dynamic of two relative opposites, like particle and space, there is never a conceptual equality. In this case, it is space-time that is for the moment the common denominator between the two, thus it is space-time that is first. But more fundamentally, it may well be that it is energy-information that is the first principle.

for it is a distance, a play of distance and communication. Without time, there is no distance and thus no space. Imagine a very large sphere, the faster you travel, the smaller it is. Upon arrival at an infinite speed, it is of an infinite smallness.

Time must possess at least three characteristics. First, it must be a continuity, for it is essentially the link between one moment and another. Second, it must on the other hand be rhythmic in regular and stable intervals; if not, it is not calculable, and is therefore unsuitable for locating things. Finally, time in itself must neither grow younger nor older, neither begin nor end, for if not, we would have time within time, which would bring back the monster of the unintelligible. As measurement of the speed of signals, time is the rhythm and not the melody. But it must allow melody, the increase and decrease of information.

Time is freedom for change of information, freedom for evolution (or involution) of complexity, as space is freedom for communication between the granules of energy-information. But the minimum of what time can be is to be found in the concept of signal speed: the non-aging or the non-rejuvenation of the signal (which is probably not absolute).

There, very briefly, is a type of reflection which can lead to a theory. Some may tell me that I am profiting from the fact that the theory has already been elaborated... Perfectly true. I am even profiting from it quite a bit. I might have done the whole history of the theory of time, but this has already been done and it is a long story. I simply wanted to explain that it is possible even so to logically construct a theory and that the greater the coherence, the better the chances are that it is in accord with reality. This being said, theories do not develop in isolation. The human being is in the cosmos. He is permeated by its logic. The practices of the cosmos and the logic of humans are not separable. But let's wager that the practices of the cosmos are not separable from its internal logic either. For if not, logic would be no more than a habit of thought, but since it possesses its own critique and its own evolution, it is not, therefore, self-referenced, enclosed in its own loops like a game governed by conventions.

Note that in this chapter there are several problems which have not been raised. Several imprecisions, several confusions that would need to be clarified. But I repeat, we aren't writing a treatise on physics here, we aren't making a general survey of a theory, we are using bits of reasoning to try to perceive the relationship between thought and reality. If the plane geometry of the Greeks did not fit reality, it is because, among other things, it contained serious internal aporias, for example, the absolute independence of content and container and the absolute independence of space and time. Two logical problems which had to be resolved for a theory of relativity to be able to succeed (some very good attempts at solutions have been proposed starting in the Renaissance).

CHAPTER 7 : Limited relativity

What is space-time²⁸? It can only be a geometry, that is to say a relationship to self. In this relationship to self, points of concentration will be formed, accumulations we have the habit of calling "matter"²⁹. These granules will be in relation to each other in the same geometrical mold as space-time. In short, something is transformed by letting itself be caught by non-linear equations (we will return to this). The non-linearity of the equations precisely demonstrates a form of relationship to self. It is within this more mathematical than material container that the cosmos unfolds its contents. Yet the container and the content are a single reality: a potential for energy-information whose form depends on internal relationships. Everything takes place as if there were only one sole and unique totality whose parts are always states of the all which gain autonomy at temperatures neither too hot nor too cold.

Equipped with this outline, let's plunge into Einstein's world. When you wish to measure the space of your kitchen, you take a meter-stick and you compare. You say: "There are three meters from the chimney to the cupboard." All this is possible because you have in hand a substance of wood or metal of a fixed length and there is an immobile wall in front of you. But imagine that you are plunged into a very great void, so great that there is nothing visible on the horizon, neither up nor down, in any direction. You can't know where you are, you can't even know if you are moving (there is no wind since there is no air nor any other substance). In the total absence of points of reference, your solitude seems infinite, it is impossible for you to locate yourself, you can't know if you are falling on to a still-invisible planet below (or above, for perhaps you are diving head first toward a distant sun)...

Luckily you have your mobile phone. First you phone a friend to tell him to come and look for you... Yes, but where? You have no points of reference around you. You would like to provide him with coordinates such as: "It is seven o'clock in the morning, I am one million five hundred thousand kilometers up, two million three hundred thousand kilometers east, seven million four hundred thousand kilometers north." Four figures that might save you (three for defining your position in space and one for defining your position in time), four coordinates

²⁸ The reader accustomed to science will no doubt quickly skim over the next chapters which summarize what can be read elsewhere (see the bibliography), but here we are doing it with the aim of enhancing the idea that reality is conceivable and that this can come only from a fundamental bond between thought and being.

²⁹ What is named "matter" will so evolve in the twentieth century that matter hasn't very much to do with what classical physics called matter: it is no longer a collection of solid particles, inert in themselves, perfectly locatable, each occupying a single place, excluding each other from this place...

because there are, you think, four dimensions in the void. Very good! However, one detail is lacking: all these figures will be calculated starting from what spot? If space weren't empty, if space were a kind of substance, subtle but nonetheless static (like the screen of a GPS), you might be able to stick a thumbtack somewhere and tell your friend to rely on this immobile point. But if space is not this sort of substance, what would you do?

Luckily your telephone works and your friend answers on the other end of the line. Fortunately your friend is a communications engineer and has very sophisticated instruments at his disposal. What can he do? What solution in this complete void, with no points of reference defined in advance, without the slightest visual, auditory or olfactory sign? He can even so follow the direction of the waves, approach the undulatory source of your telephone like a biologist tracks a fox provided with a transmitting chip. So he gets moving. He too is in a space as empty as yours, with no points of reference. He moves in different directions. Suddenly the "beep, beep" of his mobile phone indicates that he is getting near you. In fact, nothing allows him to know if it is you who are approaching him or if it is he who is approaching you. It doesn't matter! Imagine now that you know perfectly the speed at which the signal travels, yet you can't for all that deduce what distance you are from each other, for you don't know yet how much time has passed between the sending of the signal and its reception. However, if the signal's "beep,beep`s" are closer together the nearer you get to your friend and if you have a good chronometer, then you can calculate the distance and the probable hour of your meeting. But you do need an excellent chronometer.

When the distances between things or persons cannot be calculated in relation to a stable substance common to them (a wall, a floor, a volume of water, a space filled with air...), we are forced to calculate each one's positions in relation to their speeds of approach or of departure. There is no position in relation to space, there are only relative positions between "pieces of reality" in relationship, there are only speeds of approach or departure.

But perhaps all the beings we rub shoulders with are running together at the same speed toward I don't know where! Impossible to know it short of receiving information from a thing or a person going at a different speed or in a different direction. We must locate a thing that isn't following our overall movement. Space does not in itself constitute a reference, it simply permits the elements it contains to situate themselves in relation to the others thanks to the uniform transmission of waves of communication and an adequate chronometer. Speed is nothing other than the decreasing or increasing of the distance between things as time advances.

Yet by what miracle can our mobile phone (any receiver of any wave able to travel in the void might do the trick) know if they are getting closer or if they are getting farther away from each other? Let's imagine that the speed of the wave connecting the two phones varies constantly. Then everything would be an awful mess. If the speed of the waves in the void were not reliable, were not stable, it would be impossible to define the positions of things in relation to each other, nor

to determine the speed of things in relation to each other. Without a stable speed for the transport of information we couldn't locate ourselves. The cosmos would be unfit for calculations, it would be mathematically absurd. It could not function (endure) and could not be known. In order to function, it must have a minimum of coherence and in order to be known, it must be "rational", mathematical.

The cosmos did not choose to be a common substance (there would then have been aporias that would have made it unthinkable), it chose a common speed of communication: the speed of waves capable of travelling in the void. In the firmament, the elements of the universe are not like fish in the water, nor like aircraft in the air, they are points of reference for each other in a "void" that has the quality of always letting certain types of wave pass at exactly the same speed. Void means: without obstacles that might slow the wave in question. Void also means that the wave interacts with nothing during its journey. The wave results from an interaction, it is going to produce an interaction, but between the two, it encounters nothing to interact with; this is what the void is, a void of interaction. It is not necessarily an absolute void, it is a void relative to the wave itself: for the wave, space is void. In this void, the wave travels at 299,792,458 meters per second. Among the waves that travel in the void and therefore travel around 300 thousand kilometers per second, there is light. This is why the speed of light serves as a constant. It does not vary, quite simply because if it did vary, there would no longer be any way of being located in an empty space, there would not be a "uni-verse", but an incalculable mental monster.

One of the things that keep the elements of the cosmos in relation is the constant speed of the waves connecting them. Light is one of these fundamental connections. Today, however, the word "light" generally covers all visible (the visible waves are the colors) and invisible electromagnetic waves connecting the elements of the cosmos. What connects things is not space, is not time, it is speed (that is to say a relation between space and time), it is above all light (in the wider sense).

Obviously, our habit of imagining a space-substance (as if it were a subtle atmosphere like the air we live in) drives us to object to Einstein: "If I pursue a ray of light with an ultra-fast rocket and I approach the speed of light, I'm going to calculate that the speed of the ray of light I'm pursuing is slower." I'm afraid not! In the case of light, subtraction and addition no longer function in the same way. Whether you're going toward light or *away* from it, the speed of light remains very precisely 299,792,458 meters per second. The light wave is not an "object" in space that we can pursue or flee, but the means of locating "things" in relation to each other, more generally the preferred way for exchanging all kinds of information thanks to waves that don't change speed according to the circumstances. The cosmos keeps its physical coherence thanks to light³⁰. Signals

³⁰ Even if the graviton hasn't yet been detected and the gravitational wave isn't easy to measure, it too probably travels in the void. When an enormous star explodes, this leads to a rapid change in the distribution of its mass in space. This change is transported by a gravitational wave which informs everything around it that the distribution of the masses has changed. All things have to adjust to the new data. The

and things don't travel in the same way. Things have a mass, specks of light have none when they travel at their natural speed.

The unique thing about waves traveling in the void is that they are not transported by a substance there. When, however, light passes through a transparent substance like the atmosphere, water, crystal, or something else, it changes its speed according to its energy and therefore according to its wavelength (its color if it is a visible light). Sound waves, moreover, don't travel in the void. In order to be transported, they need a substance, and the denser the carrier substance is, the faster the sound travels.

But how to explain the miracle! By what conjuring-trick does an object already going at half the speed of light not reduce the distance separating it from another object flying at the maximum speed permitted in the void? Recall that, to measure their relative position (one in relation to the other), two devices are necessary. First, a chronometer that measures time. The word "time" covers many realities, but in what concerns the measuring of speed, it is a series of impulses repeated at fixed intervals. Cesium 133 has the property of pulsing in an extremely regular manner, to be precise: the International Bureau of Weights and Measures has specified that a second lasts 9,192,631,770 pulses of a cesium 133 atom. Next, wave-sensors to measure the relative distances (for example, mobile phones), and a meter to measure space. For the International Bureau of Weights and Measures, a meter is the length of the trajectory covered by light in a void during $1/299,792,458$ th of a second. Length is thus defined by the speed of light in the void.

Cesium 133 is what measures time. It is just as good in the first atomic watch as in the second. Now, if these two objects are not traveling at the same speed, does this affect the length of the intervals (the fractions of a second) between the cesium's pulses? Cesium indicates time because it "ages", it travels in time. If it pulses, it is because it is agitated by an internal dynamic. What makes it stable is the transition between two levels of its fundamental state, and this is achieved thanks to weak interactions (phenomenon of atomic radiation like that of uranium). Here, time does not serve to measure the traveler's own time, but the time of the travel.

This allows us to form an image of the space/time relationship (speed is nothing other than a relationship between space and time, it is space divided by time). Movement in space (the distance separating one thing from another thing) is represented on the horizontal axis; movement in time (from one pulse to another pulse of an atomic chronometer) is represented on the vertical axis. Light is a wave so dedicated to crossing space that it no longer has time for anything else, it cannot therefore move in time (and if it has its own time, it would be calculated

gravitational wave travels in the void, thus it travels at very precisely at 299,792,458 meters per second. There are no points of reference other than this speed; it is the universal point of reference. It is not relative, but everything else is relative to it.

differently, in relation to its frequency, for example). If light doesn't age, it's not the fountain of youth either; it pays for its eternal youth at the cost of complete non-interaction (during its passing through the void).

In contrast to light, a perfectly vertical line represents some thing or someone who doesn't budge at all, an old grandmother, for example. She is so dedicated to passing through time that she no longer passes through space.

But almost everything moves more or less in both space and time; it is obviously a relative movement. The more rapidly one moves, the shorter the seconds become (not time itself, but the time of one reality in relation to another reality in relative movement), for when we project the time of the object on the seconds of the clock, the latter are shorter.

However, for any object whatever, the combined movement in distance and in time is always equal to the speed of light. We age because we move in space slowly. This permits us to maintain a very large number of interactions; our lives are literally made of interactions with light, water, air, molecules, etc., and each interaction is paid for with seconds of life. This is not just the mind's view; we are going to die of it.

The theory of relativity empties space and time of a content that would be specific to them (emptiness which will, however, not be absolute). By this emptiness, space allows light to pass in a maximal and constant manner. This prevents light from passing through time. A network of communication results from this, one which is able to serve as a basis for the community of objects which is the cosmos. This means that in themselves space and time offer no points of reference. This also means that space is endowed with a property of transparence (of passivity) for electromagnetic waves (light is one) and that time is as active as things are slow and complex. This also means that space is not autonomous in relation to time and vice-versa.

To understand this interdependence of space and time, all that is needed is to imagine that suddenly, by an impossible miracle, electromagnetic and gravitational waves attained greater and greater speeds, finally reaching an infinite speed. Obviously, in this case space and time would be reduced to nothing. The pursuer

and the pursued would coincide, as well as everything else for that matter. Everything would be here and now, in the infinitely small point of absolute immediacy. Time would be reduced to nothing, since in the tiniest bit of time one thing would be every thing. For space to exist, maximum speed must not be an infinite speed. For time to exist, there must be distances and interactions.

Moreover, to ensure that the speed of the signal is not confused with the speed of things, it must necessarily be much greater. Something must prevent any object from going (in relation to other things) as fast as light. A sort of insurmountable wall, for if not, things might be able to go at the speed of their signal and nothing would any longer be able to communicate information (the characteristic of information is to be something other than the thing itself). The wall which ensures that things, even those that travel rapidly, are much slower than signals, is "mass", that strange characteristic which has always been associated with "matter". In order to travel at the maximal speed, that of electromagnetic waves in the void, to have no mass is a necessity. Light has none.

CHAPTER 8 : Space and "matter"

If we want to go on to the theory of general relativity, we must accept a conversion of our habits of thinking. A "material" mass is not a bunch of sand, of dust, of pieces of chocolate traveling in an expanse. There is no "matter" traveling in the expanse, there are not two realities: things and emptiness. There is only one reality, which becomes "granules" of energy-information and space-time permitting these granules to communicate with each other while retaining their connection with the totality. Space-time can be looked upon as a potential for energy-information (in some conditions: a black hole, for example, is able to liberate this potential for transforming space-time into energy-information). It has the task of connecting individualities to the totality. By the unbreakable link of time and space, neither individuality nor totality can be absolutes.

Energy is nothing other than the ability to modify something, to bring about movements in something. It includes the ability to act (work) and heat (the diffuse agitation we have already spoken of, the minimum of information). *Heat* is a collection of movements in every direction. Heat is the agitation of atoms in every direction. For there to be pure heat, atoms must not be combined. This is why, in order to understand the movements of heat, inert gases are employed. This means that, in pure heat, atoms are for all practical purposes independent of each other. If a perfectly pure heat existed, it would be energy without information. But this doesn't exist in reality in an absolute way. *Work*, the *ability to act*, is an oriented energy which moves a mass in a direction, or transforms a system, or produces a metamorphosis. Work implies a communication of information, something which gives a particular form to movement, relationships, configurations... If work existed without expenditure of heat, there would be

communication of information without transmission of energy. But this doesn't exist in reality.

No energy exists without information nor information without energy. Nevertheless, physics can establish equivalencies. Heat can be made to work by directing it with the aid of a machine (the steam engine, for example). Mass can also be made to work with the help of pulleys. We can establish equations that define the relationship between energy and mass ($E=mc^2$). In reality, however, what appears to be a mass is never anything but energy-information. Space-time is the potential of this energy-information and at the same time the geometry which defines the relationship between "masses" of energy-information.

In the case of limited relativity, Einstein disposed of the idea of ether (a spatial substance). In the case of general relativity, everything happens as if Einstein had succeeded in getting rid of the abstract ideas of "matter" and of "force", inherited mainly from classical physics (from Descartes to Dalton). They had constructed an image of matter as something rigid, locatable, static in itself and permanent, a sort of extremely small grain of sand which moves if it is made to move from outside itself. They imagined that a mass was a unit of matter. Two material masses could not be at the same spot at the same time. Physics could resemble a game of billiards in whatever space. No action could be accomplished at a distance. A thing acted on a thing by direct contact. It was quite an abstract idea of concrete things! For how could such "billiard balls" obey laws and organize themselves in order to make stars, planets, trees and tulips... As Voltaire said: "Organize it as you like, sand (atoms) is always sand." It never becomes a fox or a rabbit.

With limited relativity, Einstein emptied space of its ether, but above all he perfected a new system of reference: the constant speed of waves serving to connect the bundles of energy-information. With general relativity, a mass is a granule of energy-information. And finally, the cosmos is a network of communication between more or less dense and more or less locatable systems of energy-information. Physics is in fact a theory of information which takes quantities of energy into account.

In order to understand gravity (relationship of attraction between masses), let's return to empty space. In an empty space, rays of light (and other waves able to travel in the void) fly at a constant speed. The space occupied by these rays can be imagined, then, as a network of lines of communication, a web in four dimensions (three for space and one for time). The speed of light will be the only point of reference given to any object appearing in a radiation of light.

In the first place, we know that the relationship of attraction between masses (gravity) is a relationship of acceleration (a faster and faster speed, a speed of speed). If your mass approaches a very big mass, you are accelerated toward it. So in the world of relativity where space-time is a network of communication at

normally constant speed, what is acceleration? In short, what is the difference between flying at a constant speed (speed of the signal) and flying at an accelerated speed (speed of the masses)?

When you fly at a constant speed in the void, you cannot "feel" your movement. It is impossible for you to perceive in the state of your body (your own bundle of energy-information) differences that would allow you to verify if you had stopped or if you were going ahead at high speed because all your molecules move at exactly the same speed. So no difference in speed inside your body lets you know what direction you are moving in. Outside your body, as long as you aren't communicating with something else, you can't perceive your movement in space. And if you are beside something moving parallel to you, in your direction and at exactly your speed, again you cannot know if you are going ahead, backward, or are stationary. You simply know that you are stationary in relation to that thing and this doesn't tell you if you are stationary in relation to other things. However, if a motor attached to your back drives you, makes you accelerate, you are going to feel the motor's push. To accelerate, the application of a constant force is required. If the motor exerts its thrust in your back, you will know that you are being accelerated forward. Your molecules will transmit the speed from your back toward your chest, they will transmit this speed molecule by molecule. If you felt the presence of the motor under your feet and the speed is communicated from your feet toward your head, you will know that you are accelerated vertically (as in an elevator).

Any elastic object may "feel" this transfer of acceleration transmitted from one place to another (starting from where the motor's thrust is exerted). If, however, you plunged in free fall into the void (without air or anything else to indicate your movement), if you accelerated, then, by gravity and not by a motor, you won't feel your acceleration very much because all your atoms will have become involved in the gravitational field at just about, but not quite, the same time. What is closest to the mass attracting you accelerates first and maintains a greater speed, a speed which will increase in relation to another. Your body is stretched by the mass attracting you, and it may even be torn, for the thing that is close has taken a lead and in an accelerated movement, whatever has taken a lead increases its lead.

The gravitational "motor" doesn't work from one part of your body to another; the force of gravity acts on all your atoms at almost the same time. The gravitational wave arrives at the speed of light and is propagated in you at that speed. The difference is thus very minimal between the part of your body closest to the center of gravity and that which is farther away. Obviously, if you have a particularly big body, that of a nebula for example, and if the center of gravity you fall into is enormous, you are going to be torn to pieces, but otherwise you will feel almost nothing.

It is because you are presently being accelerated toward the earth's center of gravity, prevented from falling only by the ground, that you feel a pressure under your feet (your weight), a pressure identical to that of an elevator pushing you higher. If the floor gave way completely and you plunged into a free fall, you

could put a scale under your feet and it would indicate zero kilograms. You wouldn't be without mass, but you wouldn't be able to measure your mass by means of scales placed between an object in free fall and a floor which firmly resists the action of gravity. Have no fear, there will soon be a very effective means of measuring your mass: the quantity of soil displaced by your body's impact!

At first, Einstein interpreted gravity as a movement of acceleration³¹. Another important point to grasp on the subject of this acceleration is the following fact: if you drop a lead weight and a styrofoam ball into a void, two masses very different in quantity, these two masses will reach the ground at exactly the same time (if there is no air or any other resistance). Gravity is proportional to the total of the masses and so it has already "added" the lead weight and the styrofoam ball to the earth's mass. However, when the lead weight and the styrofoam ball arrive at full speed on the two scales set up to receive them, the lead weight will register an enormous weight (if the scale resists the impact). This is because the scale on the ground has to employ an enormous pressure to stop the weight's acceleration. The scale measures the energy needed to stop a mass in acceleration. This energy depends on the object's mass and its speed in relation to the ground, while acceleration in free fall in the void depends only on the total mass of the gravitational field centered on the middle of a more or less dense distribution of masses. If the center of a planet is easy enough to define, the center of a nebula, or the center of a double star is much less so.

Since an acceleration is involved, and therefore movement and speed at a given moment, the laws of limited relativity apply: for example, the pulses of an atomic watch in free fall slow down as the speed increases (slow in relation to an object of reference). If you are falling toward a very big planet with an enormous acceleration, you will be aging very slowly (in relation to the planet) at the moment when you crash!

This equivalence of gravity and acceleration also allows us to visualize the network of communication which exists in space-time when the latter is occupied by energy-information (masses) that are very unequally distributed. Mass and all energies accelerate the speed of objects that move in their environment (here, the environment can be immense, in principle limitless). If, on our coordinates, a fixed speed forms a straight line (movement homogeneous in both distance and in time), acceleration is represented by a curve (more and more movement in distance and less and less movement in time).

³¹ For example, your acceleration due to the earth's gravity is 9.81 meters per second squared (every second, your speed increases by 9.81 meters/second. If you fall for 5 seconds, you will reach the ground at a speed of 49 meters per second (176.4 kilometers an hour) after a fall of 122.5 meters.

In other terms, a mass bends the communication network made up of light and other waves, as well as bending the set of possible trajectories that objects carried off in the gravitational field can take.

But this response of light and its trajectories in relation to mass necessarily includes all energies (principle of equivalence). In fact it would be more precise to say that it is the inequality of the distribution of energy-information in a given space that bends its own communication network to its presence. Obviously a lot of energy-information is needed at the same place in order to bring about a significant difference in the distribution of this energy-information. Now, a mass is precisely a dense accumulation of energy-information (we must not forget that mass equals energy divided by the speed of light squared, a very large figure, so it is necessary to accumulate a lot of energy, in the order of 10^{14} joules, to succeed in making one gram of mass).

Gravity comes from a difference in the distribution of energy-information in a totality. The earth, the moon, the sun, all the planets of the solar system, all the stars in our galaxy (the Milky Way), the total of all the galaxies, etc., all this influences the movement of objects in space-time. The gravitational field reflects the collective action of all the matter in the universe. Obviously this action diminishes with the square of the distance, so a distant galaxy has only a very small influence on us, but it does have some.

Electromagnetic waves, light waves and gravitational waves find nothing in the void to slow them, so they propagate at the maximal speed of light. One important detail: when we say that the speed of light is the maximal speed, we have to understand that it is the maximal speed that a unit of energy-information with no mass can take. In other words, if we accelerate an object as fast as possible, we strike a speed ceiling. Since mass increases with speed, the object has to rid itself of its mass in order to go past this ceiling. But it is still possible that other realities travel faster than light if their speed is not due to an acceleration (these other realities are called tachyons). During the period of inflation, space-time itself was dilated much more rapidly than the speed of light.

Since the speed of communication influences the relations (exchanges of energy-information) between things and this speed is limited to 300,000 km./second, nothing is simultaneous, nothing happens at exactly the same time in our cosmos. Every object (including me) necessarily occupies the center of its own point of view. Light waves reach me at a limited speed (very fast on the earthly scale, very slow on the cosmic scale). Because of this, the further away a thing is, the later it reaches me. Light doesn't bring us things, but information about things, an image of things, and in that image distant things are necessarily old things whose present condition I don't know.

When we look at a landscape, the mountain in the distance reaches us a fraction of a second later than the tree that is nearby. Our vision (this is true for any receiver of undulatory information) receives an image in the form of a cone: the contemporary world is limited to one centimeter around us, the farther away

things are, the more they are "not up-to-date" (a little closer to the birth of the cosmos and a little farther from our present time). This gives us a transparent series of slices of reality wider and wider and more and more "ancestral" as our gaze takes in the distance. To see is to look into a thickness of several transparencies, each from a different period. A meticulous analysis is necessary to date all the objects which reach me at the same time, but are old photographs, more or less. We are infinitely nearsighted in relation to the "present", but in the sky we take in around 13.7 billion years of history. An extraterrestrial looking at our earth with a super-telescope (truly super) can, if his planet is 2438 light-years from the earth, catch sight of Plato having a discussion with his disciples. We only see the past! No reality is seen and known, for the information it projects leaves it and what reaches it comes from some distance from it. The infinitely near is infinitely ignored.

If we thought that "mind" is something which moves itself, in itself, by itself, but without creating resistance in its own movement, then the cosmos is not mind, for it is not abstract, it is not just information, it is energy also, and energy resists itself (this is the definition of mass). If we thought that "matter" is a passive reality which only reacts to an exterior action, if we thought that information can be applied to it only from the outside, then the cosmos is not "matter". We may well say that the cosmos is indifferent to our materialistic or spiritualistic ideologies; it is a reality which has inextricably unified the characteristics we have associated with "mind" and the characteristics we have associated with "matter". It forms itself *and* resists itself.

CHAPTER 9 : The continuous and the discontinuous

Space-time is not truly a substance, but rather a virtuality, a depth of possibilities for distribution, for location and for communication, yet also a depth of possibilities for the origination of energy-information. On the conceptual plane, it is as if between nothingness (which is neither realizable nor thinkable) and the granules of energy-information, there was something that is not substance (completely realized being), but a pre-structure, a virtuality of communication and interaction.

Interactions can arise and interact in an environment that is neutral (though not absolutely), in an environment amorphous in itself (though not absolutely), an environment which furnishes this freedom to interact. This power to give birth³² and to interact is called space-time. What will take place in this environment

³² Space-time includes a virtuality of giving birth since at each infinitesimal fraction a particle and an anti-particle are polarized and cancel each other, though in some cases a break in symmetry permits the birth of particles of energy-information.

cannot be absolutely independent of the environment itself, for between a virtuality and a realization there is never an absolute independence. We might think of water and waves. Waves have a great freedom, they can move in every direction, detach themselves from the water to a considerable extent, attain great speeds; nevertheless they have properties which are not just anything whatever, but depend on the properties of the water. This is only an example, for space-time is a substrate and not a substance. In it, the communication signal and the things that communicate are relatively separate, live at different speeds, for the granules of "matter" are possessed by a kind of self-resistance we call mass (inertia).

Space-time is a geometry, a virtuality in relation to what will be built into this virtuality. Of necessity, this pre-structure will furnish something that will yield energy-information. The uterus can't be absolutely other than what it produces and makes possible. It is the environment in which everything happens, and it is also what becomes the content in interaction.

Once again, what interests us here is the kind of reasoning that is at the origin of a theory. We have seen what Einstein did with space-time-energy-information. He united them. And at the same time he united a thought (which had already begun in the Renaissance) with a fact discovered a little before him: the constant speed of light. But Einstein will also advance a theory of the continuous-discontinuous (quantum theory: the fact that energy-information lives through small defined bundles), a theory which had also begun in the Renaissance³³. By what kind of intuition will he advance this theory?

The Greeks had stated a paradox regarding the movement of a thing and its connection with the environment, an *aporia*, and the characteristic of an *aporia* is that it prevents an idea from being coherent and thus being able to become a reality. The relationship between thought and reality is a close one; what cannot be thought in a coherent fashion (ideal of coherence we can never completely define) cannot exist as reality. And reciprocally, reality reflects coherent thought, as if it were whispering in our ears: I am coherent thought³⁴.

³³ Mainly by Nicholas of Cusa. See G. Bufo, *Nicolas de Cues, ou la métaphysique de la finitude* (Nicholas of Cusa, or the Metaphysics of Finitude), Paris, Seghers, 1964.

³⁴ This is obviously the opposite idea to those called postmodern, like Rorty (*L'homme spéculaire* [French translation of *Philosophy and the Mirror of Nature*]) who sees metaphysics as a chapter that is closed. Rorty wants to have done with the conception that maintains that philosophy exposes the foundations of knowledge and that the mind reflects the world like the world reflects the mind. For him, knowledge is not a process of reflection, but simply a process required by reality's constraints. Except that this proposition does not at all correspond with the advent of the great theories that will transform our knowledge of the most material of realities: physics, which really does advance through theory, and more than ever.

It might be said that space-time is as much an environment of thought as an environment of realization. As if, as soon as a thought is made real (in acquiring mass), it resists itself in order to better show itself and define itself. When something is not thinkable, it is not realizable. When something is a reality, that thing is intelligible. More precisely still, if something is thinkable, it is realized in resisting itself, that is to say, each instant is interwoven in all that precedes it. Memory and intelligence are intertwined. This is why, when we make our way between aporias, we find a way that is both thinkable and realizable, that is to say, a theory. Quantum theory is among other things an answer to the aporia of the discontinuous and the continuous.

What was this aporia stated by the Greeks? Let's imagine a perfectly continuous surface, that is to say one that can't be compartmentalized or divided in any way. We might, in theory, place a grid with squares over this surface and imagine that billiard balls are rolling over it and, thanks to the squares, be able to measure their movement. But it's a game. If we really think, we have a serious problem: we end up with balls and a surface. We would have two absolutely different, absolutely independent and therefore irreconcilable realities. The balls would not in any way be space-time and the surface would not in any way be balls. In other words, the surface would be a void of balls and the balls, a void of surface.

This conception leads to an impasse, for we can't establish relations between conceptual (or real) elements if these elements don't have something in common. Now, all our effort has consisted precisely of thinking of space-time as this something in common. If this isn't the case, if there is a virtuality beneath the virtuality of space-time, we push back the problem, and we will have to find what there is in common between space-time and things, thus between virtualities and the minimum of actualization (granules of energy-information). It is just as well to resolve the problem at the level of space-time and energy-information by unifying them without merging them.

But let's just suppose that the balls are in some way a state of space-time, let's imagine that space-time is a kind of sea and that the balls are bubbles formed by a division of this sea. How might the bubbles be shaped in order for them to roll freely in the sea? In the case of a space-time absolutely independent of its content, there is a problem of dualism: the aporia of two absolutely different realities that cannot meet each other. In the case of a space-time too attached to its content, there is the opposite aporia, that of monism: how can the same thing acquire, in a division of itself, a movement which detaches it from the environment? We have to find a track between these two aporias. For only something that can escape the aporias, consequently something that obeys the constraints of "logical" thought is able to become a reality.

The trail between these two aporias will have to take time into account, for time as well cannot be understood in the context of an absolute dualism nor in the context of an absolute monism. For example, time can't be understood as a pure abstraction connecting by magic the state of situation A with the state of situation B with the state of situation C... Time cannot be, as in a movie, a series of timeless

images which replace each other one after the other and are connected afterwards by an observer whose eye is slow in relation to the movement of the images. This idea of time as a category of the observer welding reality together afterwards doesn't hold up (the observer fabricates psychological time after the event but he then superimposes his synthesis on an already temporal reality).

Time can't be an invisible thread between visible images. First of all, a timeless situation, a timeless image, just doesn't exist. In an image, everything is not in the same spot; it is not a point, and because of this, each of its elements must be located in relation to the others by a means of communication possessing a finite speed (light). Therefore each image already contains time from the sole fact that it is a distribution. No space without time. Secondly, the images must be connected to each other, not afterwards by an observer, but in the same time as that existing in each image (for if not, we put time in time, which is very troublesome). Therefore, thirdly, something connects the seconds. Memory and time can't be two isolated things. Time necessarily is memory if we consider that it is precisely the link between what has been and what is. Time must also be a virtuality and a realization at once continuous and discontinuous.

Something must connect the situations. Something must connect each moment. Time has precisely that function. Movement can't be understood as a series of different positions. Time is necessarily a dynamic, an immanent evolution. There cannot be a reality we place in time afterwards, it is time that is the substrate of all reality, and all is in the movement of time.

However, time cannot be anything but the present in its synthetic property, therefore in its refusal to let things pass away completely. It always retains something of them. Time doesn't connect the seconds in single file, it connects all the past through the interactions of reality at each moment at a given place. It is a root which communicates with everything, but with an elastic everything, for the very distant is always the very old also. Nowhere does there exist, either in thought or in reality, something passive acted upon by another reality, as if from the outside. No clay and no potter, for time is itself the clay and the potter is himself made of clay (we will see later how to get out of this too-absolute immanentism).

It is impossible to think that movement is the motion of a ball in a container. This motion is in fact the state of a situation that has been transformed. The image from afterwards shows that the image from before was different, the objects didn't occupy the same position, and this is because of memory which is the exercise of time itself, the ability to see oneself in a state of transformation. From one moment to the next, reality informs itself about what it is becoming. Time arrives before the analysis of movement, it is the transformation of the state of things to the extent that this state of things contains, if we analyze it later, the past, the present and the future. But time, before this analysis, is already a synthesis, a self-transformation.

Each thing is not only in communication with the others, it is also in communication with itself. But in this respect, it finds itself a little late, because of the speed of light. Time doesn't turn backward, it transports itself synthesis by synthesis, so the smallest seed of reality is necessarily vibrating in relation to itself and in relation to everything. An absolutely stable point in space-time cannot, therefore, be imagined. A granule of energy-information can't be located at the same moment that its movement is identified (time is by definition irreversible), it occupies a cloud of probabilities, for it is woven into the original vibration of the continuous and the discontinuous. This was already the intuition of Nicholas of Cusa.

Let's once again try to clarify the aporia enunciated by the Greeks (Zeno of Elea, first of all). If I stretch my bow and shoot my arrow, what does the arrow do in order to go forward? If space-time is absolutely discontinuous, it can't pass between the bars in the discontinuous part since there is nothing between the bars. If space-time is absolutely continuous, the arrow cannot detach itself from its environment sufficiently to advance, for it is enclosed in the same substance it is made of. A way has to be found between these two absolutes, a way in space, but above all in time, for it is time that makes space (through the limited speed of communication signals which go much much faster than things) and not the opposite.

If, like Parmenides, we think of being as a substance, there is no route. To find a way, virtuality, potentiality, probability, and actualization must form four levels of reality. We must not think of virtuality as non-being. This would be as if we believed that thought was not already being. Now, starting from the level of virtuality, we are in being. Only absolute nothingness is not being and cannot be. In these conditions, we can become aware of a continuity which is time itself spatialized as virtuality. The discontinuous belongs to the level of potentialities, probabilities and actualizations. Probabilities define the field of possibilities, and possibilities are already partially discontinuous. Realizations are even more discontinuous.

In short, we have space-time and we have energy-information. The two are not dissociated, but do not live on the same level of reality. Energy-information is immanent in space-time *and* vice-versa, but they aren't on the same level in the road between the virtual and the realized. The two together form a geometry of the continuous and the discontinuous.

Nothing is immobile, nothing is mobile, nothing is mobile in an immobile container, everything is transformation, but this transformation is achieved by level of reality. There is no immobile foundation within which movement happens, for the foundation is time-energy-information-space. Everything appears to be like a memory which absorbs in the present the traces of every actualization without losing its creative virtuality. A present in self-transformation which doesn't let time flow behind it? No, a present that includes the past; such is its power of synthesis, its memory.

Locating is an act that involves time. Locating is an information that supposes an exchange of energy-information with energy-information. It is an act within the act, a turning back on self. Everything is of necessity in interaction with self. This is why there is necessarily a base vibration. In the virtual, there is a more-than-zero probability of existence. Therefore not only are granules of energy-information discontinuous within the continuous, they are also probabilities within virtualities, never perfectly locatable because always in interaction including with themselves (even were it only to locate themselves).

It is only with a "logical" background like this one that a theory like quantum theory can find its way. It succeeds in uniting the continuous and the discontinuous, but it does it by ripping the virtual from the abstract; it makes it a primitive state of reality. And it comes to terms with it. Its first field of investigation is light.

CHAPTER 10 : Light

Visible light is a high-frequency electromagnetic wave³⁵. It is not visible in all of its frequencies: it can vibrate too slowly (infrared waves) or too rapidly (ultraviolet) to be visible. The portion of the electromagnetic spectrum we can perceive with our eyes is minute in relation to the total extent of all possible frequencies³⁶.

Light transports energy-information, not much energy, for the granules of light have no mass³⁷, but it can transport an enormous amount of information. This comes from the fact that the vibration of electromagnetic waves almost perfectly preserves the structure of its frequency. An electromagnetic signal (light is one) is a kind of zigzag transversal writing (perpendicular to the direction of the wave's propagation). This transversality allows the structure of the wave's frequency to be independent of the direction of its propagation, which protects the information from the uncertainties of cosmic life. And since, at its maximal speed

³⁵ Between $3.7 \cdot 10^{14}$ Hz and $7.5 \cdot 10^{14}$ Hz (one hertz equals one frequency per second).

³⁶ See among others

<http://www.ces.fr/Userfiles/Image/Jeunes/livrets_thematiques/Les_ondes_electromagnetiques.jpg>.

³⁷ Even if the mass of light traveling in the void is nil, light possesses a kinetic energy because energy truly does possess a mass equivalent.

in the void, light does not age, the information undergoes very little erosion (since the void is never perfect, over a long period the void's light background "noise" erodes information even so). On the other hand, if the light approaches or goes farther away (relative movement) from an observer or a receiver, the frequency of the wave undergoes a shift (toward blue when it approaches and toward red when it goes away). This is the Doppler effect. In spite of this, thanks to the remarkable memory with which light is endowed, the information it will deliver after a journey of some billions of years will still be very reliable.

Light is a wave, which means that the information it carries can be combined with other information. A wave includes two principal measurements, amplitude and frequency. Amplitude is the vertical distance between a peak and a hollow. Two hollows will add up, two peaks will add up, but the peaks and the hollows will neutralize each other (subtraction). As for frequency, it indicates the number of peaks in a second. The structure of the frequencies of one wave don't interfere with those of another (the different frequencies don't become entangled). To find the messages that belong to each frequency, all that is needed is to screen the frequencies. Frequency is defined by wavelength, the horizontal distance between two peaks. The shorter the distance, the higher the frequency.

However, light is not just a wave; it transports little bundles of energy called "photons" that are the actors in electromagnetic interactions. Where do these granules of energy come from? They come from different atomic or electric reactions. For example, the nucleus of an atom is composed of a collection of tiny bundles of energy-information organized in an already very complex manner: these are the protons and the neutrons. Protons and neutrons are themselves composed of smaller bundles of energy, quarks. The atom's nuclear system is bound together by the strong interaction (fusion atomic energy mediated by gluons). The nucleus appears in several different energy states. The nucleus of the atom can spontaneously pass from a higher energy state to another, weaker one. It then emits an electromagnetic photon characteristic of the atom's nucleus. All that then needs to be done to find this signature of emission³⁸ is to decompose and analyze the structure of the frequencies of the wave.

In a slightly similar way, an atom whose electron is excited, that is to say an electron which wiggles on an orbit a little more distant than normal will fall back into a state of less energy by emitting a photon. When iron is heated, for example, it emits a characteristic light. If we know these characteristics, we can, for example, know by comparison if our Sun contains iron³⁹.

38 . Nuclear isomerism is when the same atomic nucleus can exist in distinct energy states, each characterized by a particular spin and energy of excitation. Nuclear isomerism was discovered by Lise Meitner at the Kaiser Wilhelm Institute.

39 We are speaking here of lines in the spectrum caused by electronic transitions.

So light carries all the information necessary for us to know the atomic and chemical composition of its source. We can read and analyze this information thanks to a peculiar property of electromagnetic waves. When light enters a transparent environment such as a crystal, it is deflected to a greater or lesser extent depending on the wavelengths. The longest and the least energetic (like the red) are deviated less than the shorter and more energetic (like the blue). This will produce a rainbow, and on this rainbow we will be able to see lines of no light (black lines); this wavelength has been absorbed. The whole of the spectrum forms the signature characteristic of the atomic and chemical composition of the source of this light.

All this functions because light possesses a dual identity. Through its "undulatory personality", it relocates itself like the wave produced by a rock thrown in the water. We have the impression that it wants to inform all those around it, from the closest to the most distant, of what is happening to it. Through its "corpuscular personality", granules of energy in other words, it locates itself and runs its course a little (but not really) like a bullet. It is never simply one or the other, but always a little of the two. This makes it a strange being. In fact, the mathematics of waves and the mathematics of projectiles are entirely different.

Because of its undulatory personality, light is dispersed. When it meets a cracked wall, it finds the crack and passes through it by diffracting, that is to say it forms a fringe on the edges of the fissure. If we place two cracks in front of a light source, the light passes through the two cracks and is diffracted behind them. On the other side of the crack, on the side of the two interfering fringes, the amplitudes magnify or inhibit each other: the peaks add up, the hollows deepen and the former neutralize the latter. On the paper receiving the light, we will see very light bands (the sum of the peaks), dark bands (the subtractions) and intermediate bands. Note that it is the amplitudes which interfere and not the frequencies.

Now let's suppose that we still have the same light source, that we make the light pass through the two cracks, but that this time we project the light ray photon by photon, a speck of light at a time, as if they were bullets. The first "bullet" passes through the left crack, the second bullet passes through the right crack and, miraculously, at the end of a large number of photons, we find the same fringe that is characteristic of diffraction and interference. For "bullets", it's absolutely fantastic.

Another example of strangeness: a calcium atom whose electrons are excited emits two photons when it falls back into a relaxed energy state. In some conditions, these two photons are interlinked. When two photons are interlinked, whatever happens in the life of one of them, the other undergoes the same change instantaneously (and not at the speed of light) and this, regardless of the distance between the photons. For example, if we modify the axis of rotation of

one, the other instantaneously modifies its axis of rotation. Long-range mimetism⁴⁰!

Normally, space is by definition what separates two local objects. Time is what separates two successive moments. But this applies to the "non-interlinked" elements of the cosmos. For all the twin beings (interlinked photons) that have been violently separated in certain circumstances, space and time separate them only from the point of view of their position in relation to exterior elements. As for their internal relations, one determines the other: the first undergoes an event, and the other acts as if it were subjected to it at exactly the same time. This information doesn't travel at the speed of light, but instantly.

Let's return to the photons thrown one by one on a box pierced with two fissures. Like every granule of energy-information, the photon is never at a very precise spot in space-time, but we are very likely to find it at a particular spot, a little less likely to find it at another, a bit less likely than that to find it at such-and-such other place; it follows from waves of probability (a definite distribution of probabilities). The photon occupies a zone of distribution of the probabilities for locating it around a given precise spot. We know that through their undulatory side, the photons have the habit of dispersing (like a child with an attention deficit, a little here and a little somewhere way off).

This doesn't mean, however, that the photon has lost all its ability to let itself be located. We might have to say instead that a photon cannot precisely indicate its position *and* its speed at the same time. If an interaction allows us to determine its precise position, it doesn't allow us to determine its precise speed.

We have said that granules of energy occupy a definite, but vibrating distribution in space-time: a probability wave. This is not just a theoretical view. A probability wave is obviously virtual, it describes the fact that a photon is there virtually, that is to say if we search for it there, we have a more than zero probability of finding it. This virtuality is concrete: the photon really does follow the wave of probability preceding it, and this is why light can spray out photons while making a pattern of perfect interference. The probability wave conducts each photon on its trajectory. In physics, between nothing and fact there exists an intermediate virtual reality that is described in terms of probability, but that is as real as the bed of a river is real and really determines the water's dynamics. Nothingness does not exist in fact. It is a virtuality.

40 On the phenomenon of photon interlinking, you can refer to, among other things, the report on "La lumière dans tous ses états" (Light in all its moods), *Pour la science*, October-December 2006, the chapter "Des photons intriqués aux bits quantiques" (Photons interlinked with quantum bits) by Alain Aspert and Philippe Grangier. You can also read Trinh Xuan Thuan, *Les voies de la lumière* (The Ways of Light), pp. 198-208. These days, there is no longer really any doubt about quantum interlinking. Moreover it is used practically in some protocols of quantum cryptography.

What is strange is not the strangeness of the quantum mechanism, it is the fact that this "strangeness" is strange only for a very primary logic, that of a plane geometry in which time, space, and the void are absolutes. This geometry is not really satisfying for the mind, for it leads to aporias due to its dualism. Quantum physics seems to resolve these aporias. Its much more complex geometry is in fact more logical and rational, in the sense that it keeps time, space, matter and the void in relation to each other without letting them get lost in the absolute. In it, individuality and totality are never absolutely separated.

CHAPTER 11 : Time and waves

To better understand probability waves, let's return to the idea of time. Time is many different things:

Rhythm. We have said that time, as a measure of speed, is an interval between regular pulsations. In order to count time, a reliable repetition is needed, a regular beating of energy pulsations. In the music of the universe these pulses are the percussion, they give rhythm to things. Each atomic element lives to the drumbeat of its pulses. Molecules, cells, living beings, everyone beats a rhythm that is its own. It is quantifiable time, a time that has no history since it is identical to itself.

Melody. Through the percussion a melody appears, a second sort of time. A time put together by sequences which arrive impromptu. Certain melodic patterns unexpectedly appear and then are repeated for some time. These are the self-organizing phenomena to which we will return. There is an addition of information, constructive history, negentropy (the opposite of entropy, which is a loss of information).

Noise. Besides the melody that organizes, a third kind of time exists: noise. Noise comes from the random movement of elements. This noise eventually erodes complex organizations. It is called entropy, a word which means "retreat". Heat, though it is a form of energy, does not persist in a void even if the pressure is constant. Now, energy obeys a strict law of conservation. The explanation: the heat lost passes into entropy, it crosses to the side of disorganization, that is to say, of chance or, if you like, to an equality of probabilities (it is no good stirring the soup, it all comes back to the same). Here is where we see the subtle link between energy and information appearing. What is preserved is heat *and* an x quantity of entropy, which represents a reduction of information. Thus when energy is left to itself in the void, it would have a tendency to return to disorganization.

Without rhythmic time, there would be no way to measure time and to place oneself relatively in space-time. Without the melodic time of self-organizing phenomena (construction of complexity), we would not be able to tell any stories, for nothing would be happening in the cosmos. Without the wearing effect of

time, there would be no aging: once an event happens, if it no longer struggles to endure, it gradually fades away. The second and third levels of time together build the story of emergence and decay, births and deaths, evolution and regression, multiplication of forms and destruction of forms.

Though we succeed rather easily in measuring the third level of time, entropy (it balances heat loss in such a way as to maintain the conservation of energy), we don't as easily manage to measure the second level of time: the increase of information in self-organizing systems. Information theories don't succeed in defining complexity in a totally satisfying way. Complexity cannot be simply the reverse of entropy (reduction in the quantity of complexity due to energy expenditure). Complication would be easier to define: for example, the number of different subsystems (non-redundant) in a system. An airplane is more complicated than an automobile. But this definition has trouble taking into account the quality of unity characteristic of a complex system: for the whole to function smoothly, the subsystems have to communicate with each other perfectly. When a horse runs gracefully and happily in a field it demonstrates an enormous complexity in comparison to a robot trotting along mechanically on an even surface. In a complex system, the connection between the individualities and the totality must be tight, but without hindering individual initiatives.

Let's conclude this digression on time, return to the undulatory photons (light) and resume our experiment with light following two roads. Let's place a laser (a source of directed light) in front of a separator of light. The separator divides the light in such a way that one ray will strike a diagonal mirror to the right and the other will strike a diagonal mirror to the left. The two mirrors will relay the rays toward a central detector. The mirrors are perfectly symmetrical, each one the exact same distance from the separator and the detector. On the detector we will obviously see forming the fringe characteristic of interferences (very light bands, dark bands, intermediate bands). Our laser is able to send its photons one by one.

If the photons are perfectly localized like bullets, either they would strike the left mirror or they would strike the right mirror. But in reality a probability wave will pass to the right *and* to the left. There will be a probability of finding the photon to the right *and* a probability of finding it to the left. The probability wave takes both roads. It is because the probability wave has already passed by both roads that each photon "knows" where to go to complete the fringe of interference. It has been demonstrated that photons do not inform each other (a way has been found to "blind" the photons). It is the probability wave that "knows" that the distribution of photons has reached such-and-such a stage, and that the arriving photon must pass by such-and-such a spot. This is why even if the photons are launched one by one, we will arrive at the same result of interference than as if they were launched in groups. The wave is not a collective effect of photons talking to each other, it acts like a flow of probabilistic information. Photons travel on probability waves like water on the bed of a river.

There is, then, a history of photons. Behind them are several virtual pasts. A particular photon could have passed by here or by there... These multiple pasts

(pasts of probabilities) have converged at the moment when something has been done to locate the photons. The photon has been located at such-and-such a place. But before being located, it existed in a probability of occupying that spot or another. I too can happen to be absentminded, but when my wife calls me, she finds me in my armchair reading (and not in my book living another life). Before each photon, there are also futures. If I did something to locate the photon and I uncovered it at such-and-such a spot, I have modified its possible futures; now there are others before it.

Time structures space and vice-versa. The future is inhabited by probabilities because nothingness is an impossibility. Like the void of space, the future is not an absolute void, it is the life of probabilities. These probabilities are not defined only by the past; they follow laws, they sometimes include creative surprises.

Here we have reported sophisticated laboratory experiments. But in nature there are all sorts of ways of "detecting" a photon, and thus of making it emerge from the virtual state to the real state. The experiment with the two cracks can become an experiment with three cracks, four cracks, a thousand cracks. In the void, the photon has in front of it a limited, but very large quantity of passages. We can understand photons only if we know what virtual universe we are traveling in. The knowledge of the structure of this virtual universe is crucial for calculating the energies and reactions at work when light is concerned. In its way, the virtual is very real and even determinative.

It is because light is able to electrically recharge the "batteries" of green plants that we are alive. Biologically we are a small electric current fed by the sun. But before approaching life, it would be profitable to observe some self-organizing phenomena. Don't forget that we are seeking to know if space-time is a geometry, a relation to self, a very developed basis for rationality (much more developed than our rationality) and that, in this "rational" relation to self, the contents are the image of the container. And since we ourselves are a content of the cosmos, we too are capable of this rationality (even though it surpasses by far what we are able to conceive of).

CHAPTER 12 : Self-organization

In the nineteenth century, physicists had not abandoned the idea that matter was like an open-air game of billiards. Heat, for example, is nothing more than a set of accidental collisions distributed in all directions. Heat was thought to be communicated to cold and not the reverse, because the very active balls transmit their kinetic energy (due to their mass and speed) to less active balls, never the opposite. Today the standard theory⁴¹ draws us into a very different world.

41 Let's very briefly summarize the standard theory. Energy-information is organized in complex systems. The fundamental system is the atom. Seen from a distance, this resembles a nucleus surrounded by a cloud of electrons. If we approach the nucleus, we will see protons and neutrons. If we approach a proton, we will see three different

However, we have to explain why heat is lost while energy must be constant. It's easy. All we need is a little mathematical sleight of hand. Besides loss of kinetic energy, there is also a loss of information. In fact, if at the start the most active balls had a more or less specific orientation, by being communicated from one ball to the other, this orientation is lost in the distribution of kinetic energy. If we transform this loss of orientation (and thus of information) into a positive number and compensate for the loss of energy by this positive number, then the energy remains constant. The loss of information transformed into a positive number is called "entropy".

If we know at the start the volume, the temperature, the pressure, etc., and if we isolate the system from any source of heat or cold which might intervene during the experiment, we probably couldn't predict all the details of the movement of the molecules, but we can predict the temperature of the system after a definite time. Why? Because this system is isolated (we add nothing and subtract nothing during the time of the experiment) and it obeys the "limit conditions". The limit conditions are the precise numbers which define the system at one moment of the experiment (any moment will do).

Such a system is predictable because it obeys linear equations. For an equation to be linear, the "limit conditions", and thus the numbers which define the system at a given moment, must not depend on the movement itself. The equations of general relativity are not linear. All the numbers which define limit conditions can't be known at a precise moment. In fact the total gravity depends on the masses involved in the system, but also on the energy of gravitation itself. This energy is at the same time cause and effect, so we can't know its value in advance.

The equations defining the heat loss and entropy increase of the isolated system of an inert gas or liquid (without electrical energy) are linear. The system tends

types of quarks. The neutron too is made up of three quarks of different kinds. From an electrical point of view, protons have a positive charge. The quarks, however, have no electric charge either positive or negative. They have three polarities and not two as in electricity. They live, then, in a triangle. Around the nucleus, we can perceive the cloud of electrons. And all this interacts, emitting neutrinos (electron neutrinos, muon neutrinos, tau neutrinos) and photons. Quarks, electrons, and neutrinos have a peculiar spin ($1/2$ spin) which give them the character of a fermion. The fermion, in the normal state, is the reality closest to what used to be called "matter": fermions obey the rule of exclusion according to which a given state cannot be occupied by more than one energy particle at the same time. What do protons (all with a positive charge) do to live together piled one on top of the other in the nucleus? They exchange mesons and gluons. Gluons mediate the strong interaction which ensures the cohesion of the nucleus. But large nuclei, like those of uranium, have a tendency to become disorganized, producing a very powerful radioactive radiation. This energy comes from the interaction of mesons. Electrons occupy a place in the orbital clouds according to their degree of electrical excitation. The more excited they are, the farther away they stay. Electrical and magnetic energy comes from the interaction of photons. In fact, the gluons, mesons and photons produce the interactions needed for the atom's energy balance.

toward stability, that is, the most equal possible distribution of molecular movements. If at the end of the experiment a person changed the location of the molecules, this would in no way change the distribution of heat. Such a system invents nothing. No event happens. An event is something that happens and which might not have happened. Alas! Or so much the better; the systems definable by this kind of equation (linear equations) are rare.

Imagine two recipients side by side connected by a tube. In the two recipients and the tube is a uniform mixture of hydrogen and nitrogen at the same temperature and the same pressure. Suppose that we heat one recipient and cool the other; the greater the difference in temperature between the two, the more the gases will separate. The hydrogen will more often be found on one side, the nitrogen more on the other. If we maintain the same difference in temperature, the situation will stabilize with a level of separation which will depend on that difference in temperature. The farther we get out of balance, the more the ingredients will be separated.

In this case, we have reduced the entropy of the gases, that is to say we have increased the information. In the end, the information is greater (information is a quantity of order). How can we make order? For example, how can you bring the dust in your kitchen together? By thermodiffusion it will preferentially be deposited on the coldest surfaces. Take your dustpan out of the refrigerator, wait, and the dust will preferentially be deposited on it (alas, this isn't very efficient!).

Let's return to our two recipients connected by a tube. This ability to create order through differences in temperature comes from a coupling of the thermic flow with the differentiated response of molecules or dust to the thermic flow (Soret effect). Obviously, energy must be expended in order to achieve the difference in temperature that will make order, even if only local, in the recipients, where there is an increase in information. The system is simple and the equations are linear. This is sufficient to show, however, that we must not dissociate order and disorder. Continuous heat (a kinetic disorder) can create order, perform the productive work of separating the two gases.

Thermodiffusion is often applied to separate gases and sometimes liquids. Heat diffusion brings about a separation of materials. The system is removed from its stability through the magic of a simple thermic drainage, of a continuous transmission of heat toward cold. The system is, then, not closed and it has a price: it must be fed. If it stops being fed, the temperature will become homogeneous again and the gases will mix once more. There is a struggle for life. Like a living being, a system unfed and out of balance loses information and dies.

Now let's add a little more complexity to this simple process of producing order through a flow of disorder (heat). Let's deposit a thin layer of liquid on a hotplate. Here the heat transport by conduction (collision between molecules) is coupled with a transport by convection (the molecules, pulled from the top, themselves participate in the collective movement). This causes tiny vortexes. Before the threshold of instability, all areas of the experiment look alike. We

could substitute two areas with their scattered little vortexes without anyone being able to notice. We continue heating. When we have reached a definite difference in temperature, nothing is any longer the same. At some places, well-formed vortexes rise, at others, complete vortexes descend. In this agitation, hesitant patterns are formed, as if someone outlined the beginnings of a circle without being able to finish them. At a precise difference in temperature, we will see ovals or spirals forming, or other arabesques. We could say it was a mosaic made up of similar regions (the phenomenon called the "Bénard instability").

What happened? How could this population adopt a coherent behavior and produce forms, in-form itself? The molecules simply stopped being "deaf". Before this, they listened only to the molecules which touched them directly, after this they listen to everything in the experiment. The system acts as if each molecule were linked to the others. This is what is called a "long-range correlation". The molecules can then improvise group choreographies. Here we must be aware of the change of scale of their strange collective "consciousness". In their incoherent state, their "hearing" didn't exceed 10^{-8} of a centimeter; afterwards, it embraces several centimeters! Imagine yourself plunged into a crowd of India's entire population, a billion people, and you know perfectly what each one is doing. It is not an individual illumination, everyone hears everyone. So you start to do complex and perfectly synchronized choreographies with no need for a director.

A long-range correlation defines not only the relation of each one to each one, but the relation of everyone to everyone as well, that is to say, with the totality of the fluid's dynamics. Once caught in the vortex, the molecules can no longer be considered to be independent in relation to each other. They have given up their individual "freedom" in order to embrace a collective "freedom". As the temperature very gently rose, the molecules hesitated. They began to grope by trial and error. Some itineraries were formed and broken. Only gradually did they finally find coherent trajectories. Small groups began to recruit other groups and led them into their solution. Once sketched out, movement creates its own necessity. If you don't follow, you are trampled.

All during these gropings there was competition between the thermic agitation and the constraint imposed upon the whole (increasing heat). Below a threshold, the vortexes resembled microscopic upside-down tornadoes that didn't manage to touch the sky. When they came up to the surface, they forced descending vortexes to form. Each new coherence is a rare event compared to the heat's agitated movement in every direction. At the end, the scattered movements of the beginning define nothing more than the nearly imperceptible trembling of a perfectly ordered crowd.

This imposition of form, this creativity, costs dearly in heat. A dissipation in width and in verticality has to be fed. We speak of a "dissipative structure": a coherence that demands a constant dissipation of energy. And why this dissipation? Because the system must be kept away from balance. Balance here is the collective incoherence which condemns everyone to individual chance.

In order to arrive at a self-organizing phenomenon:

-- the system must be *constrained*. In our example, it is forced to keep itself far out of balance by a constant supply of heat. But it is not the constraint which causes coherence. On the contrary, it is the system itself which "spontaneously" organizes itself to adapt to the constraint;

-- far from balance, the system becomes hypersensitive. In the example of Bénard's vortexes, the molecules become hypersensitive to gravity. In fact, between the top and the bottom, the heat forces the molecules to rise in order to encourage thermic expansion, but gravity goes in the opposite direction; it wants to bring the molecules back toward the bottom. There is contradiction. Gravity is totally negligible on the millimeter of elevation of the film on the liquid's top, but just this separation from balance "forces" the system to seek other information which might be able to guide it. It becomes hypersensitive to the gravitational information that "orders" it to approach the Earth's center of gravitation, thus to descend. This sensitivity is a widening of the notion of causality. Here the causality is reciprocal; it is the system's activity which suddenly gives a meaning to gravitation, which would not otherwise be "heard" by the molecules. Generally we separate in our heads the system and its activities; the activities are not supposed to change the nature of the system. This is not the case here, the activities render the system attentive to very minor causes. Suddenly these causes are heard;

-- as we saw previously, in addition to this sensitivity to moreover very negligible external causes, the system is sensitive to itself, to its own fluctuations as they find their way. Close to balance, they are disorganized as soon as they form; kept far from balance, they have the time to find coherent paths;

-- the system ceases to be defined by limit conditions. There is no number we can introduce at the beginning of the experiment which would permit us to arrive at such a "choreography" of molecules. We can know that at a given difference in temperature, for a given type of liquid, a self-organizing process will develop, but the collective system which takes control of this process is "free" to make this or that choreography;

-- as the system "listens" to distant causes like gravity and "listens" to itself, it ends up by finding a meaning, a direction which will render its movement fluid. There is a narration, a story being organized. The vortexes gradually know that this or that movement leads nowhere. The weak interactions that fail become so much information driving the system to find its way somewhere else. At a given moment, the collective system's choice is limited to two possible choreographies;

-- at a certain critical threshold, the system oscillates between two possibilities: it faces a bifurcation. If we continue the process, it will choose. Let's imagine that it chooses choreography A and abandons choreography B. If we continue to heat the system, it will once more get out of coherence and plunge into chance. Soon a moment will come when another critical thermic difference will place before a

new bifurcation. If a self-organizing system more complex than Bénard's vortices were involved, choice A would eliminate the possibilities which would have resulted from choice B. The system would dispose of a negative memory. The system would not be able to take the forms that would have been possible if it had chosen B. Apart from this fact, choice A will not influence the new choices taking shape before the system. It is characteristic of bifurcations to have neither a zero nor a hundred percent probability; in a number of cases, the probabilities are equal. In short, history does not determine destiny, but partially structures its choices.

In brief, away from equilibrium we can no longer define physico-chemical objects as verifiable realities. A system constrained to leave equilibrium through the dissipation of a continuously renewed energy spontaneously organizes itself. It becomes very sensitive to contradictions due to other constraints and this makes it sensitive to itself. Causality becomes reciprocal and the system's activity gives a meaning and direction to the collective movement. The system is no longer defined by limit conditions, it stops being indifferent to historic time, and enters a narration written by forces which surpass it (which are no longer local). It forms bifurcations which, when the system is endowed with memory, force it to continually grow more complex as it eliminates the previous choices.

These self-organizing processes are not exceptions. On the contrary, they are the norm as soon as there is sufficient dissipation of energy to keep a system out of equilibrium. Now, if something is characteristic of the universe until now, it is that it is, in large part, kept away from equilibrium by the dissipation of energy. We might imagine that, on the whole, this dissipation of energy makes of it an entropic system that exhausts its original heat while locally, from local systems, it becomes more complex as soon as the thermic conditions permit it. We might say this. However, at the present time, far too much is unknown to make any conclusions. One thing is certain, a solar system diffuses heat constantly, it creates a thermic flow, it holds its planets at a certain distance from equilibrium, and it places them in ideal conditions for creativity.

What do electromagnetic waves and gravitational waves do in all this (light in the general sense of the term)? They form a very long-range cosmic system of coupling, they maintain cosmic coherence, they drive the universe to self-organize in complex systems as certain thermic stages are reached. It is in fact very difficult, as soon as we the least bit observe the Earth and the firmament, to not imagine that the universe is the cause and the effect of a play of contradiction between the high temperature of the beginning (in billions of degrees) and the almost absolute cold of the spaces widening out with age. In this immense game, interactions grow more complex, atoms become vibratory organisms thirsting for combinations, and all the contents of the cosmos tend toward the improbable while the container opens out and is emptied of its general heat.

The rhythmic clocks live unbelievable stories. As the past closes back on itself, blocking any return to the fusion of the beginning, the future is opened and branches out; here and there, suns attain the critical sizes necessary for drenching

the planets with light streaked with all the elements needed for the chemistry of complexity. Never again can time be perceived as a repeating circle of more of the same. It is not about a story filled with accidental and ephemeral events; we are witnessing the formation of non-balanced structures that maintain themselves as long as the system dissipates energy while remaining in interaction with the exterior world (the totality).

CHAPTER 13 : Life

Acrasiales are little one-celled animals, a kind of amoeba. In the "normal" state they grow and reproduce like any one-celled creature. They feed on bacteria. When their food begins to be insufficient, they stop reproducing and enter a phase that lasts around eight hours. Toward the end of that period, they start to regroup around some of them who seem to play the role of the center of the aggregation. This aggregation is the response to chemical signals emitted by these strange "leaders". Little by little the aggregate forms a stem surmounted by a sac containing spores. This phenomenon of collectivization is made possible thanks to an intercellular communications mechanism and a differentiation into only two types of cells. In order to survive, they become a collective stomach. Here is an example of self-organization in biology where the danger of extinction produces the reflex of association. These amoebas are individualists sociable in emergency situations.

Even if life is supported by physical and chemical self-organizing phenomena, its complexity is on a scale that can't be compared with physics or even with chemistry. If, by itself, genetics explained the complexity of life, which is not truly the case, there would already be enough to discourage any compiler. The genetic code of a virus alone contains 3182 "letters", that is to say around one page of text; a bacteria contains three million letters, as much as a book five centimeters thick⁴². And the genetic code belongs to a much more complex set of regulators of information.

In fact, life is so complex that if it had not found extraordinary means to feed and repair itself, it would not last a second. It stands on a prodigious peak of information because it is continually repairing its organs. It struggles intelligently against entropy.

Life must utilize complex atoms like carbon, iron, magnesium, etc., and for this, stars must be born and explode, be reborn and re-explode (this can also be the result of certain types of stars of the second generation). After that, chemical processes of great complexity must develop in the sulfurous waters of marine volcanoes, or in some other way. It is necessary, then, that a planet be available

42 . We owe this comparison to Joël de Rosnay, *L'aventure du vivant* (The Adventure of the Living Being), Paris, Seuil, "Point", 1988, p. 26.

that is geologically active thanks to radioactive atoms (very heavy and complex atoms). Biochemical systems must succeed in feeding, regulating, repairing and multiplying themselves in order to survive in the face of the entropy of an environment which must be stable on the thermic plane (between -50 and 50C., a hairbreadth on the scale of possible temperatures in the cosmos!). Such an equilibrium supposes, among other things, a moon massive enough to stabilize the planet's inclination. We could enumerate dozens of similar conditions.

Around 3.8 billion years ago, a primitive bacteria succeeded in stabilizing itself (this bacteria's origin is still being discussed). It eventually satisfied its needs for complex energy (strongly informed energy) by utilizing the biochemical molecules produced in submarine volcanic landslides. In this case, the chemical reaction of iron sulfate with hydrogen sulfide was its first energy source. This energy allowed this bacteria to transform its mineral compounds into organic matter. But this process wasn't very efficient (from the point of view of the art of increasing complexity).

Some descendants of this ancestral bacteria developed respiration and photosynthesis without oxygen (there was none at this time). These cyanobacteria will dissociate ocean water (H₂O, one atom of oxygen and two atoms of hydrogen) to supply themselves with hydrogen. But they had to dispose of the oxygen liberated by this process; for them, it is a poison. They don't succeed in doing this. Destructions-reconstructions ensued, extending over approximately a billion years. And finally life found different solutions. 2.5 billion years ago, bacteria invented the enzymes which allowed them to discharge the oxygen outwards.

Having solved this problem, they began, with the help of light, to convert water and carbon dioxide into nutritive material (for example, glucose) and in this way liberate oxygen. In the billion years which followed, life stabilized the earth's atmosphere at around 21% oxygen. There were still a lot of problems. The earth does not in fact receive just the comfortable visible light, it is bombarded by light that is too energetic: gamma rays, X-rays, ultraviolet rays, etc. Life will leave the oceans to venture on to dry land. It will enrich the earth's atmosphere with oxygen so as to develop the ozone shield (molecule of three oxygen atoms) which filters the excessively violent rays of the cosmos.

In short, life produced its own conditions. Once the first bacteria had emerged from the volcanic waters of the ocean, life developed the means of feeding itself essentially from light. The Earth, a tiny planet, receives from the Sun only about a tenth of a billionth part of the energy radiated from this star, an energy of 342 watts per second per square meter. The Earth's interior emits heat also, through the radioactive radiation of large atoms like those of uranium (0.8 watt per second per square meter).

Life can be recognized by seven inventions:

- 1) *individualization*: membranes able to decide what must enter and what must remain outside, what must leave and what must remain inside;
- 2) *nutrition*: systems able to utilize photoelectric energy (and other forms of energy) directly or indirectly to make complex chemical processes function;
- 3) *respiration-fermentation*: the utilization of slow combustion to transform the energy of foods into energy usable by the cells;
- 4) *reproduction*: the ability to multiply while transmitting a heritage of information (a memory). For some living beings, reproduction will be done through a genetic mixing differentiated between females and males;
- 5) *evolution*: the use of molecular memories to eliminate the ways that have failed and reutilize the ways that have succeeded. Evolution requires phases of multiplication of forms, phases of expansion in specific ecological niches, development of forms less dependent on a specific niche, the expansion of territory, phases of elimination of unadapted forms, etc. Mutations must at the same time be multiple and correlated (for example, the modification of a bird's beak must be correlated with the length of its feet, neck, wings, etc.);
- 6) for sexual beings *death* is added: the programming of mechanisms permitting the elimination of individuals after their reproductive period in such a way as to favor evolution (we must not believe that death is an acknowledgment of the failure of life. On the contrary, it is a solution favorable to evolution);
- 7) for evolved animals *cerebralization* is added: the centralization of information permitting individuals and groups to improve their ability to adapt to the environment, especially to increase the flexibility of that adaptation and its inventiveness. Cerebralization also permits the epigenesis of certain learnings (a knowledge can be transmitted)⁴³.

Each of these inventions is a technical exploit calling upon extraordinary electrical and chemical mechanisms. A mammal of our size combines some sixty thousand billion cells belonging to two hundred different families, not counting the bacteria of the skin and the digestive tract which are ten times more numerous than the cells of our bodies...

And yet, life prefers to choose the simplest solutions! The problems are so difficult that the solutions can't be simplistic. Life is an interdependent arrangement of millions of solutions facing millions of problems, solutions "aiming at" persistence and the development and multiplication of complexity. Each of these solutions is a small miracle of inventiveness. And all this has to depend on a renewed energy which must be utilized with an extreme efficiency (minimization of energy losses).

43 Epigenesis has now been demonstrated, but it has only just begun to be developed.

Among life's inventions there is the mechanism allowing it to be nourished by light (energy of diffusion allowing it to remain out of equilibrium). Food is photoelectric energy in a can. The general strategy has consisted of putting the Sun's energy in reserve in chemical bonds. Glucose, for example, is an excellent accumulator of energy. It is a molecule constructed by photosynthesis. Green plants, mainly the algae, have specialized cells at their disposal for accomplishing this technical exploit.

Glucose will then be burnt by slow combustion in the presence of oxygen coming from respiration. Burning is an entropic operation, an operation of decomplexifying molecules, thus of deconstruction. The glucose will be cut up into smaller units. In short, it's like playing with a yoyo by heightening complexity thanks to processes amazing in their ingenuity (photosynthesis) and by using the entropic fall as a second motor (respiration).

Photosynthesis uses a specialized "organ": the chloroplast, made up, among other things, of granas, which are stratified arrangements of plaques of chlorophyll. Photosynthesis uses simple materials such as water and carbon dioxide, light-sensitive pigments, and electric energy employed at levels of efficiency that would make the best engineers jealous⁴⁴. The chloroplasts form a sort of mosaic of photoelectric units. The electric current's energy will cut the water in two to free the oxygen and hydrogen. Hydrogen electrons are very active. They will be collected by chemical transporters in order to accomplish the synthesis of glucose through the action of chlorophyll⁴⁵.

More precisely, photosynthesis is done in six interlocking stages of an incredible complexity. Respiration is, so to speak, the reverse of this mechanism. Glucose is burned through contact with oxygen. Carbon dioxide and water result from this. This process recharges the cellular batteries (ATP)⁴⁶.

44 More precisely, photosynthesis requires three ingredients: 1) Basic molecules. The photosynthesis of glucose is done starting from two simple molecules: carbon dioxide and water. 2) Pigments. Photosynthesis can't be accomplished without chlorophyll (there are other kinds of pigments able to do a similar work). The chlorophyll molecule is organized in strata in the chloroplast. The "collecting antennae" are formed of pigments and of transport proteins. 3) Energy. Synthesis would not be possible without a rather complicated molecule: adenosine triphosphate (ATP). The ATP molecule has the property of facilitating changes in the orbits of electrons. In short, ATP electrons are very excitable. When a protein touches the electron, the latter changes its orbit. It gorges itself with electricity. The excited electron has a tendency to return to its habitual state by losing its electrical charge.

45 . Under the influence of light, 6 molecules of carbon dioxide and 12 molecules of water will produce a molecule of glucose.

46 Respiration takes place in the mitochondria (a little organism in a cell). The mitochondria are shot through with crista (a sort of very long tube). The mitochondria

It's a system of chemical solutions for the problem of basic diet! A system that would take your breath away, it is so complex and ecological. A food must be complex and combustible. Starting from photosynthesis (from the formation of a sugar like glucose), life will develop thousands of ways of utilizing this basic food (fish, herbivores...).

Life is a small electric current maintained by the Sun. But the chemical processes of synthesis (complexification) and oxidation (decomplexification) are interlocked to form a prodigious chemical "mechanism". To achieve such chemical processes starting from a few rays of light converted into weak electric current constitutes without a doubt one of the greatest mysteries of creation. Moreover, our biology textbooks are very far from exploring every angle of life's most common inventions.

After all these laps on the scientific track, an image, an outline, a vision naturally forms. Space-time appears not as a substance, but as a "void" loaded with coherent possibilities. If we leave these potentialities alone, they enter into interaction with each other, yet at the same time remain connected to the totality of space-time. The whole of these interactions between the parts and between the parts and the whole won't go just any way, but will follow laws of coherence that will give mathematics a foothold. All this will form voids and agglomerations expanding, diversifying and becoming more complex. We would be led to believe that a "nearly nothing" acted on itself, respecting a logic and a mathematics that is still beyond us, and that an immense "brain" resulted from this, an immense fabric of relations whose creativity seems to have no limit. The womb of the world doesn't look like "something", but like the "mathematics" of all possible mathematics, the most profound and most secret of mathematics which we attain as soon as we examine the coherent basis of our own thought.

The miracle of miracles is that the cosmos before us contains no miracles, in the sense that we can generally understand its logic. It would have been so much easier to achieve all this through miracles, through gratuitous leaps in the intelligibility of the processes.

CHAPTER 14 : The scientific method

A summary of all these chapters on the total environment: space is an expansion of influence and energy-information, a collection of determining factors. And all this takes place against a background of logical, relational and mathematical necessity.

tear out the linking electrons to deconstruct the glucose, burning, oxidizing it. The stream of torn-out electrons, that is to say the electric current, will recharge the ADP into ATP.

But when we human beings think, we begin with a concept and slip on a chain of reasonings in a free and quiet space. Our beginning is rather arbitrary. We don't manage to close a chain of reasoning complete enough to simply arrive at a good solid and satisfactory beginning. We have to be satisfied with an (axiomatic) base that will quickly be shown to be deficient: it will be either dangerously dualistic or dangerously monistic.

Dualistic: our basic definition will be too clear and too distinct (Descartes's, for example); they will be mutually exclusive to such a point that we will soon run aground in the impasse of dualism. And if we end up with a set of conceptual objects that are mutually exclusive, absolutely unequivocal, with nothing in common, then we can neither add them (for we can only add similar realities), nor divide them (for then we break their integrity). In such a situation, no operation and thus no relation is possible. In short, through too much clarity and distinction, we fall into the impasse of impossible relations. A pile of balls that fall into the void without organizational relationship. An appearance of logic, but which holds up only because we don't think about it.

Monistic: if, on the contrary, we seek to identify everything with some thing - materiality, spirituality, determinism, chance - , if we seek a fundamental substantial unity from which everything is supposedly drawn, we risk making all logic fall in on itself by explanation so total that it no longer explains anything. How can this perfect unity create a movement, a minimum of internal contradictions able to give rise to relations, to operations? If the drops of water dissolve in the ocean absolutely, the ocean would not have enough differentiation to enter an internal dynamic of transformation.

These two errors are often attributed to the West (dualism) and the East (monism). Now this is not only very approximate, but also false. In reality, these two universal poles combat each other as much in the West as in the East. But no matter. Logic is a game of relations, so it supposes that objects in relation be neither absolutely unified nor absolutely separated. Logic must navigate between absolutes, but it can't relativize everything either, for the relative of the relative of the relative, ad infinitum, becomes a wall as insurmountable as the absolute. The absolute of the relative is a contradiction with no solution. Logic tries to avoid absolutes without making the relative into an absolute. Notice that nothingness is among the absolutes. Notice too that we don't get out of this by simply blending two opposites, for example being and nothingness. The road is much more difficult. In reality, it is the difficulty of the road that makes the road. Logic is the operation of impasses (aporias) that raise the only wrinkles passable for the life of thought and the life of reality.

Logic wants to stand on something solid. Now, the only solid under it is the crest between the bottomless fault of dualism and the quicksands of monism. So there is no fully satisfactory beginning. We must start with something like a number that wants to be a quantity and yet can only be a quantity of a quality never perfectly definable, which wants to be absolutely independent of everything and yet always remains a slightly vague division of everything. A hybrid. And we don't succeed

either - even less - in completing a logic, in assuring ourselves that we have gotten to the end. We will never succeed in saying: here, I have a complete logical system. It has only been possible, and this is already a lot, to logically demonstrate that logic cannot at the same time be perfectly coherent and perfectly complete, as Gödel's incompleteness theorem reminds us. A perfection in internal coherence is paid for by a set of holes left behind. This is not just an admission, it is above all the manifestation of the sharp crest which emerges alone and essential between the two great abysses of the mind. And reason is as subject to it as existence.

Our aspiration to rationality is similar to that to beauty: an unavoidable motivation, but an unattainable goal. However, there is a difference. We know that in the end there are not many logics that stand on the crest of life and endure. Perhaps there is only one. A sort of tree of wrinkles of the possible, enduring and quivering wrinkles in the infinity of impossibilities that is also the infinity of the non-thinkable (or of what holds together only as long as we don't think about it).

The difference between the real and us is that it has found this thread of life, this thread of "coherence", since it is there and produces us from moment to moment; we are still searching for it, but we have not found it since, psychologically, we are doubt about existence, but it has found us since physically we are a manifestation of its fulfillment.

With no assurance, we are staggering on the narrow crest of life; lost in the infinity of impossibles, we seek the coherence and the rationality in which our bodies and our environment go their merry way. But as for us, we can fall at any moment or rather, we are at the bottom of a fall already. We seek a fully satisfactory logic and rationality, but we don't succeed in this. We have to accept a certain imprecision, something between dualism and monism. It is through the awareness of its fragility that science can stand on its thread of thought in the hope that it is also the thread of reality. This state of grace that we award ourselves is surely necessary, for we cannot allow ourselves to wait to achieve a perfect rationality before acting on the world; we are in the world, and we are always acting in it, even if it is only through our respiration.

Next, we employ our tottering and provisional rationality, with no solid beginning, no satisfactory totality, a collection of fragments. With these rags we confront reality. Experience doesn't only lead us to adjust our hypotheses about reality; much more than that, it directs us to improve our logic, sometimes even to change its foundations⁴⁷.

The peculiar thing about human thought is that we can have an idea or even ideas that are not ideas. The day when we think seriously about it, we discover that this idea doesn't hold up. And yet sometimes it has lived for centuries in a culture: For

⁴⁷ For example, S. Lupasco, *Le principe d'antagonisme et la logique de l'énergie* (The Antagonism Principle and the Logic of Energy), Monaco, Le Rocher, 1987.

example, the independence of time and space is not an idea that can stand up for very long if we really think about it. Yet it has endured. In short, the difference between our thought and the thought that is immanent in reality is that our thought is principally furnished with non-thoughts (we are prelogical) while reality can't even outline an incoherent thought since it is welded to the demands of duration, it is thinking duration.

To say this is also to say that thought in reality is not a thought independent of its effects. All its effects are immediately integrated into its own being by a force of memory unknown to us. Memory and intelligence are never separated in reality; cosmic intelligence is never vague. Yes, it can tolerate effects which don't hold up, but this is in order to learn, these are secondary effects which it will integrate in an innovation (more complex and more durable). At bottom, on the fabric of its foundation, it is duration. The reason for the coincidence between thought, being, and duration will appear more clearly to us in the third part of our essay. If we jump ahead, we can say right now that time cannot be anything other than a special state of eternity, and thus a non-finite duration; if not, it would begin and would end, which is a contradiction in itself.

When we say that reality is a "material" thought, we mean that it is a thought which cannot escape itself, its thoughts immediately become its own body, that is to say its memory. But as for us, the characteristic of our intelligence is that it can roll into itself without ever touching itself by a real exercise of thought, or without ever touching its consequences, except when these blow up in its face. In us, thought has succeeded in suspending its course and its coherence. We are thought become potential again. This should make us humble.

But there is another problem. We must say this, that our thought is not a complete system, far from it, and we are faced with reality, which obviously does function as a complete system (though not necessarily perfect), a dynamic whole which stands up (sufficiently to last). Because of this, we cannot therefore embrace any method (epistemology) other than the one that begins with the smallest explanation in order to go to the largest. It is David against Goliath. We can't do anything other than cut the whole of reality into systems which are almost independent. We must begin our scientific explanation of reality with the simplest, I mean with the simplest hypothesis, the scrap of thought which seems to us the most coherent. If we want to understand complexity, we have to begin by hypothesizing that complexity is just a collection of simple parts, a sum of elements that are not complex, for we are not yet capable of an organic logic.

The one who uses tweezers to eat his soup can't catch anything but elements that have the property of being detachable from everything (at least partially). For us the soup remains a mystery whose very existence we can call into question. Our thought is distorted by the necessities of our methods which are themselves adaptations to an inability to think organically. And yet the only possible road between dualistic mechanism and monistic immobility is organic thought: a thought in which the whole and the elements are never absolute one for the other and are always in reciprocal relation. We do not attain an organic logic, for such a

logic is from the beginning necessarily a whole, and therefore can't be the result of a sum of bricks and gears it would be impossible to doubt. It is as if it were necessary to have finished before the beginning, which for us is impossible (we advance theorem by theorem) and inevitable at the same time (for every theorem rests on faith in the coherence of all logic).

The method of verifiable propositions (hypotheses) can yield only fragments of knowledge that must be glued together into a coherent whole, necessarily mechanistic (method perfected in the Middle Ages by William of Ockham and still in force in classical science). "Mechanistic" not because the thing is mechanistic, but because the method is an assemblage. In the mechanistic assemblage, the whole has no real existence, it is only the result of the parts (while in organic thought, the whole and the parts are in a reciprocal relation of interdependence). An airplane has no totality, it is not a whole, but a sum of parts. A horse is a totality from the beginning, a totality differentiated from the inside, and where each component can become a stem cell from which a horse can be remade by cloning.

In spite of our constructed (and not organic) logic, there is necessarily a totalizing logic in our science. Every theory can only be an intuitive and organic whole impossible to verify directly. A theory is necessarily an idea of the whole that is not demonstrated as such. We suppose only that certain verifiable hypotheses coherent with it, by accumulating, consolidate the theory. Science knits with a theoretical needle and a practical needle (hypothetico-deductive and constructive method): its theories are necessarily organic totalities which must explain the dynamics of the parts in the transformation of the whole; its practical experiments proceed by small verifiable hypotheses which supply some pieces of the puzzle (which remains a puzzle of the real and not a living reality). But the gap between the two remains for the moment insurmountable, and this for two reasons: theoretical intuition is organic in nature and analysis-synthesis by verifiable hypotheses is mechanistic in nature (interlocking of elements); the crumbs of knowledge are still very far from producing a coherent vision of reality.

The analysis and reassembly of a horse in no way explains how the animal made itself from the inside as if the totality always existed for it from the beginning. What is true for the horse is moreover just as true for an atom or a galaxy. Nowhere has an independent component been found. Everything has proven to be a whole differentiating itself, and this even at the most primitive level of what we have the habit of calling "matter". The totality is not only a synthesis, it is there at the differentiation of the parts. The relation of the whole and the parts is simultaneous, elastic and synchronous.

The challenge that lies between theory and experimental knowledge is double: qualitatively, it is a question of joining together the organic of the real with the mechanistic resulting from the method; quantitatively, it is a long way from cup to lip. We don't know enough about it. Even so, we do know that in a few years there will doubtless be a change of basic theory in physics, for physics is now limited by contradictory theories.

And the vague idea that physics will explain chemistry, that chemistry will explain biology, and that biology will explain psychosociology is very likely an idea not really thought out, purely cultural, which survives only through reaction to the religious abuses of which we have been victims. Such an idea is the very essence of mechanism, and nowhere have we found mechanism. The whole is always an unavoidable given, even though methodologically it is beyond our means. Nonetheless, the methodological choice of a mechanistic construction is doubtless the only one which for the moment allows science to advance. The risk is to forget that this fundamentally shaky method (though necessary for beginners like ourselves) leaves an enormous gap in which we take risks we are absolutely incapable of measuring.

CHAPTER 15 : The appleseed and the apple

The fact of being immersed in an intelligible world gives us the hope in spite of everything that perhaps our intuitions are not as stupid as all that, but that our methods of proof are, alas, still immature. We are like a child who contemplates a galloping horse outdoors and who, in his house, takes apart a plastic horse and puts it together again. We build a bridge from both ends: the immanent thought end which participates in nature (the intuition of the theory), and the constructive thought end which imitates nature, models it, simulates it (construction by proven elements). Looking at an automobile, we can feel competent; confronted with nature, we are still very unprepared.

Nature in all its broadness, its depth and its duration is doubtless not that elementary, it is an intelligence far more coherent than our own (it endures), an intelligence certainly at the organic stage at least, for it is always immanent in its act and its act is necessarily complete in the sense that it affects the whole as well as the parts adjacent to its action. For it, to think and to be transformed are doubtless the same thing. The intermediary stages of representation, analysis and synthesis do not exist for it. It is much more likely than the opposite that it is a thought infinitely superior to us.

But perhaps its thought is so organic, so immediately a self-transformation in accordance with the bases of a logic of duration, a thought so bound to its own consistency that it escapes us (analytically) and yet penetrates us (intuitively). For what thinks in us, if not it? What is our thought, if not a drop of its thought? And in it, the drop is never a little thing, it is already all of it. Yet in us it thinks very obscurely, by fragments, as if infinitely slowed down, image by image, still incapable of becoming a whole. In us it seems to have chosen to handicap itself and break itself down. It appears to analyze itself in us. But in this respect who knows where we will be in ten thousand years? Will we have stopped resisting its impetus, perhaps?

If we exclude classicism (also called modernity), and look beyond it at the evolution of the great cosmological intuitions, we have the impression that mythologies and philosophical visions are addressed to reality as if it were a thought recognizable by at least three characteristics. First, nature is seen as bound to a rationality much superior to our own, that is to say much closer to the rationality we strive towards than to the one we are using, in any case superior enough to accomplish the work in which we are immersed, a gigantic, complex work, at the same time organically unified, partially analyzable and above all powerfully creative. It was even thought to be a complete and perfect rationality.

Secondly, this thought is never seen as dissociated from its results. It is seen as gathering in all these results as a part of itself. It doesn't think before acting, it thinks in an action that is always a total transformation of itself; it is eternally immanent in its own actions. It doesn't pass through stages of intention, representation, evaluation and realization. It is like a painter who is himself a pot of paint, or like a musician who is himself a vibration.

Thirdly, this thought in process doesn't pursue a goal or goals, it wants to produce and exhaust all the possibilities. An impossibility is the consequence of a basic logic. Whatever is not logical is also what cannot exist. But starting from this ocean of impossibles, it attempts to maximize all the possible. If it is possible, it is already on the way to being realized. And if it is not yet possible, but it is possible to make it possible, it is already on the path of preconditions. It succeeds in multiplying the fields of possibility. The atomic possibles are such that they produce an infinity of chemical possibles, the chemical possibles are such that they produce an infinity of biological possibilities, the biological possibles are such that they produce possibilities for participation in the conditions for a still more complex life... It goes contrary to a goal. A goal is a contraction of the possible; it is a widening of the possibles.

The question is no doubt the following: why does nature work so poorly in us? What does she do to break up inside us into a pile of cubes striking against each other? How does she who glides on a river become a chaotic rockpile as soon as she enters the wretched human brain? Are we the only ones unable to coordinate our thousand billion components? By what miracle can a living brain perceive itself as a set of little wheels connected to pivots? How can a conscious brain come to imagine that its consciousness doesn't belong to it and that it doesn't even belong to reality?

Thought is in us like a man who has had a serious accident. He has to relearn everything, but above all he is now forced to learn by little pedagogically apportioned steps. Thought is like the musician who at fourteen perfectly mastered his art, his fingers gliding directly from the feeling of the music to the musical instrument without the slightest hiatus. But all of a sudden he becomes conscious of the magic, he sees himself playing, his consciousness divides; on one side it remains a coherent whole who observes, on the other it becomes a disjointed series of acts and notes. Time is entangled in the notes, the fingers stumble on the keys, and the music collapses in an unbearable cacophony. From

now on, if the man wants to become a musician again, he must relearn everything through specific consciousness. A colossal task. In the meantime, how many false notes and tortured ears!

There is something retrograde about analytical thought. If mass is a serious slowing down of light, the analytic form of our thought is a serious slowing down of natural thought. Before this tragic moment, we are runners as graceful as the horse, afterwards we are automatons with a stiff and heavy gait. The graceful runner cleaves the air and avoids the obstacles, the robot bumps against things and tears down the trees in its path. The disadvantage of the analytical approach alone appears catastrophic: man the enemy of harmony, stumbling-block, dam in the natural evolution of grace and of life. If it was nature's choice, what a mistake!

But in the final analysis, if he perseveres and once again becomes a musician, if after years and years of learning the human being once again attains the harmony of the horse, he will know an awful lot about rhythm, scales, music and harmony. Through all these years of reconquering harmony, he will have measured its value. In a thousand years, he perhaps will still not play as well as the monkey leaping from one branch to another, but he will know a lot about the value of a graceful movement. As a performer, he will perhaps always be one beat behind, but he can become a wonderstruck admirer and perhaps even a careful co-composer. Before then, will he assume the consequences of his rupture with his own inner harmony and with the harmony of nature?

The appleseed in the apple cannot be anything other than an apple. When it looks at the starry sky, it knows that it is in the flesh of the apple. It knows that the apple is the seed fulfilled. In exploring all that is outside it, it knows itself, but it does it by its inner constitution. Inner and outer are for it the echo of the same movement.

To go to the bottom of the self is not only to find Papa, Mama and all the psychosociological complexes we must free ourselves from, it is also to probe the rationality we never completely escape, and in which we rediscover a certain freedom of knowledge. But to be satisfied with what a culture calls "logic" and "rationality" is not enough, for "this" logic and "this" rationality have been constructed like a religion, partly to meet an ideal and partly with the explicit goal of stifling the drive toward this ideal. Culture always wavers between the breakthrough across the organic unknown (total intuition) and the reproduction of analytical instruments aiming above all to give us a false sense of security (proofs one by one).

Nonetheless, in the case concerning us, the appleseed has the power to dry itself so as to better stand out and become specific. It can think it is dead matter and do its own autopsy. This is an inevitable accident, a destiny no doubt. So it will, by trial and error, build robot apples. It will dissect itself. Nonetheless it won't escape the apple. Its intuition of the whole will always transcend its analysis of the parts.

It doesn't just learn to walk again, it educates itself a lot in this desert, it learns that life is not a machine composed of inert material. When it goes outside once again, it will no doubt not yet have reached the level of respect a primitive man has for a horse, but it will know more than ever, perhaps, the infinite value of a colt set free to gallop in a plain.

PART THREE : The Bottom of It

Let's return to the question: how is it that "nature" is knowable? The history of thought proposes two types of answers. For strict phenomenology, nature is not knowable. We project on it what we are, and that's that. Beneath our representations there no doubt is a reality, but it escapes us entirely. For dialectical phenomenology, if nature is knowable, it is because it is of the same nature as ourselves. Since we are thought and consciousness, it is thought and consciousness. There is, to be sure, an enormous difference between a human being who thinks and a totality like the cosmos, but it seems more logical to imagine that it is the all that surpasses us rather than we who surpass the all.

It's not possible to understand anything whatever about nature without introducing the notions of information and complexity, but watch out, complexity is not complication. For there to be complexity, we must bring together a maximum of diversity, a maximum of simplicity and a maximum of integration. Now it is impossible to define the notions of information and complexity without introducing the notion of intelligence. For example, if I say that a biological cell is complex, it is because it contains an enormous amount of information while preserving its unity (its total functioning). If we want to measure this complexity, we must play with the notions of memory and intelligence. We say, for example, that a library of ten thousand books is complex if it is in order. Let's imagine that the volumes have been scattered by a hurricane and we ask someone to rearrange them in another room in exactly the same way that the hurricane did it, in the same disorder (the hurricane is entropic). A phenomenal memory (but not necessarily a lot of intelligence) will be necessary to carry out the task, a memory which retains all the information detail by detail. On the contrary, if the books are in order (negentropy) and I know the principle of this order (for example, the alphabetical order of authors), I need very little memory, but some intelligence to put the volumes back in place. There is complexity because principles (order in the information) are applied, if not, there is no order. Order requires a mixture of memory (reproduction) and intelligence (according to some principle).

We could say that intelligence is only in us and not in nature, but this leaves intact the mystery of this complexity. We only defer the questions. For science, it is important to never step over the boundary; this is essential for remaining in the world of describing what appears from the outside. But for consciousness, it is impossible not to cross the boundary, for this methodological prohibition doesn't concern it. However, the philosopher can never say: here's the scientific proof... Philosophy can simply grasp that a logic *and* an intelligence seem to pass through nature and the human mind, producing wonders in nature and mumbling in the

human brain. This brings nothing to science, but this can bring something to our comprehension of the world. It is toward this that we are now going.

We have seen that the "logic" we are pursuing is not one "logic" among others, but a collection of wrinkles which furrow the foundation of human thought as much as the foundation of the whole of reality. These wrinkles probably result from a certain type of contradictions: the absolute and the relative, the indefinite and the determined, the continuous and the discontinuous... Other contradictions are simple abstractions: being (viewed as substance) and nothingness, the intelligible and the absolutely unintelligible... The latter can't form a living dynamic, but the others, yes.

In this part of our book, we will gradually approach such contradictions with a view to better understanding the wrinkles, the dynamics that are at the foundation of a "logic", of a "rationality" never absolutely definable, but which notwithstanding appears to guide all thought and all being, produce their movement, realize their coherence, make it enduring, and express in life all the expressions of reality.

CHAPTER 1 : The mystery of knowledge

Science has succeeded in describing approximately how the simple becomes complex, how thermic dissipation creates improbable constructions, how rhythm gives birth to fundamentally unpredictable stories... From the theory of relativity to that of self-organization to quantum theory, the energy-information of light keeps the cosmos unified and pushes it toward greater complexity. Biologists are discovering some portions of life's mystery before our very eyes: an unlikely arrangement of electrical and chemical solutions telescoped into each other. All this within a vast web of information: electromagnetic waves, light.

If a physicist of today were to find himself before a gathering of educated men of the seventeenth or eighteenth century and he explained to them some of his discoveries, he would without a doubt hear a great burst of laughter. Our numbers and our descriptions surpass, in fact, all reasonable imagination or even all unbridled imagination. No one in centuries past, neither the scientists, nor the theologians, nor the novelists, nor the poets, could have imagined the world unfolding before us. Literally, we are discovering in reality something that completely surpasses our imaginative abilities.

It may be, however, that the greatest mystery is not there. In fact, since the beginning it would have been normal to discover a world surpassing us in every way. But this is not what we're discovering, it's something even more amazing. In fact, the philosophers of Antiquity expected that someone would discover a cosmos infinitely great, infinitely complex and sublimely harmonious (an image of God). This is exactly what we have found - and this is what surprises us and leaves us at a loss for words. We expected a weak answer; we have found an

astounding answer. The child expected a big gift for Christmas, a pretty white miniature horse, a simplified model. He rummages in the box and finds a real horse, not with just a few details, but with many more details than all the toys he had imagined.

So, yes, this world is extraordinary, beyond measure, even. An infinity too concretely infinite to believe. We are confounded by its conformity, not to our superficial expectations, but to our deepest expectations, those of Lao Tse in China, the Pre-Socratics in the West, the greatest poets and the greatest prophets. Until now, the result is always more divine (infinite in quantity and in quality) than our idea of the divine. God died in the twentieth century because he had been constructed too small and too puny for the cosmos. The concrete infinite has eclipsed the abstract infinite. And we, we are dumbfounded. We can't get over it.

That's it for the adventure of factual knowledge.

Yet this is not enough for us. This "too big to hold" on the real knocks us over, but doesn't satisfy us. We don't just want to know how this happens, we don't want just to be subjugated by the miracles of the cosmos, we want to know the meaning of all that. This question exceeds our scientific powers. How is it that we can want to know what we are not capable of knowing (objectively)?

By definition, we aren't able to know the meaning of things, for we aren't able to enter the inner through the outer. A doctor can know very well all the details of the physics, the chemistry, the biology and the physiology of a woman, but he won't have the slightest idea of the meaning of her life as long as he can't communicate with her interiority. The outer doesn't meet the inner. We have learned several things about the cosmos, but this, it seems, doesn't get us any further ahead in our search for meaning. In that respect, we feel as if we are at a dead-end.

Antiquity's solution is the following: if, in the case of the cosmos, the outer is the artistic expression of the inner, then the outer will reveal the inner to us and we can have access to the work through our artistic sensibility. If a woman's body were that woman's artistic creation, to know her externally would bring us close to her inner being. In the case of the cosmos, either we stop thinking about meaning (which would be an unjustified repression) or we suppose that it is the expression of an inner reality (its being is its language, it has no other language than what it is). As opposed to our relation with another human being, which necessarily passes through language (since its body is not its own creation), we can encounter the interiority of the cosmos through its exteriority since its exterior is its artistic expression, its direct language. The cosmos may be an artist whose only medium is itself. This ancient solution is perhaps not all that foolish. It puts the poet in a position to listen to the scientist. What the scientist discovers, the poet feels. We could, then, study the cosmos as we could study a painting, a language.

But let's summarize what we have learned up till now, by imagining that it has to do with studying a work of art. In painting, there are four kinds of perspective:

the first is geometrical, the more distant an object is, the smaller it appears; the second is atmospheric, the more distant an object is, the more blurred it appears; the third has to do with colors, the more distant an object is, the more its colors are subdued; the fourth is dynamic, a receding object tends toward red, an approaching object tends toward blue (Doppler-Fizeau effect). Note that painters generally do the opposite. However it may be, these are four effects of light.

If the cosmos is a painting produced by light, we should add to it a fifth perspective, the historical perspective: what is in the past, in any case on a scale of thirteen or fourteen billion years, appears less broadened, less multiple, less diversified, more explosive, hotter; conversely, what is recent appears wide, diversified, less hot, less sprinkled with extraordinarily compact aggregates of information (incalculable number of units of information in a very small space), for example, a fly or a mouse.

The painting produced by light, but by it alone, is composed in a geometrical manner. We have seen that light is cause and effect of the geometry of space-time. Relativity has made it impossible to classify light either on the side of causes or the side of effects; we encounter it on both sides. Different principles of equivalence make it so that light both constructs space-time *and* obeys it. More generally, the contents of space-time sculpt the geometry of space-time, but the geometry of space-time configures the contents itself. More generally, we cannot say: "Here is what obeys (what we used to call "matter" and is now named "energy") and here is what commands (what we used to name "mind" and is now called "information"), nonetheless, something keeps the cosmos coherent and among the great transporters of energy-information that keep the cosmos unified there is light and there is the transparency of the void.

Here too, the wave that transports is not separable from the object transported. There is not on one side waves, and on the other, discrete bundles of energy. On the contrary, the wave and its energy content are indissociable. Nothing is only a wave, nothing is only a granule of energy. The transport of wave energies makes something appear that is strange to our prejudices, something both local *and* diffuse, individual *and* collective, temporal (obedient to finite speeds) *and* intemporal (traveling at absolute or nearly absolute speeds, for example, when photons are interlinked).

Despite all our prejudices, the cosmos is organized as one dynamic "non-substance". There are, then, no causes and effects, we are not in a dualistic world of the type matter/mind, energy/information, causes/effects, mortals/immortals. We must resign ourselves: the cosmos is something that organizes itself, which goes toward the complex when conditions allow it and which produces these conditions as soon as it is able to.

We truly have the feeling that the painting and the artist are indissociable. We find ourselves before something that transforms itself, by itself, in itself, according to a dynamic that never closes itself, but opens to new destinies in all sorts of ways.

We discover a basic meaning to all this: the cosmos doesn't tend toward complication, but toward complexity, for all these systems are unified among themselves, inform each other and influence each other, maintain a close interdependence, tend toward economy and simplicity of solutions. It is not the unfolding of an immense program either, for many problems arise unforeseen on the road to complexity, and the solutions are as unpredictable as the problems, trial and error is abundant, the bifurcations are abrupt, the choices are probabilistic... Nonetheless, all this stands in a solid coherence, for the whole and the elements never evolve separately.

It is not about a system that tends toward a predefined goal, a predetermined target; on the contrary, the whole structure appears developmental, as if it were necessary to be placed among the most problems possible in order to find the most solutions possible. This is why we have used an established, but difficult to measure term, that of "complexity", which combines memory and intelligence. This dynamic picture, at once beautiful and terrifying, stable and unpredictable, diverse and unified, lets itself be grasped, at least in part, by our cognitive abilities and our artistic sensibility. How is this possible? How could a little animal unbelievably minuscule, totally incapable of imagining the numbers in question, how could a minuscule biped on a planet that isn't even a grain of dust in a galaxy lost amidst billions of galaxies, how could this "microbe" which occupies only a microsecond in the cosmic clock, how could this microbe, scarcely born and still so unconscious, succeed in describing with some fidelity the immense picture that contains him?

To become aware that what happens in our minds corresponds to what happens in the cosmos, to grasp that, in spite of everything, we succeed in devising intellectual and mathematical instruments that work, this experience is the most troubling, the most disconcerting and yet the most comforting that there is. "One has the surprise of discovering that a construction elaborated by one's own mind (a theory) can in fact be produced in the real world. A great shock, a great, a very great joy⁴⁸."

If the cosmos is a work, we are a part of this work, but the extraordinary thing is that we are not like a piece of a work, an infinitesimal fraction of the work, like a pot that can be broken into a billion pieces; we are ourselves creators, we are ourselves an artistic sensitivity refined and accorded with the work, at least to a certain point. And in us, in the bottom of us, the part that is out of tune proves that we ourselves are artists.

In short, after having summarized some scientific discoveries, we feel as if we are closer than ever to the oldest idea in the world: participation (which existed long before philosophy and is found alive in several so-called "primitive" cultures)⁴⁹.

48 Leo Kadanoff, cited in James Gleick, *La théorie du chaos, Vers une nouvelle science* (Chaos Theory, Toward a New Science), Paris, Flammarion, 1991, p. 239.

CHAPTER 2 : Creative imagination

It would be logical if nature were of the same nature as ourselves; if we had the nature of nature, it would in fact be especially logical. If this is the case, nature would pass through our thought in order to think itself, and we humans would pass through it in order to think better. In our experience, we believe that we are exercising our thought on nature when in fact we are exercising our thought in nature. There is no outside, we are in nature. We are immersed in it. When scrutinizing "our" thought, we are always scrutinizing a progression that involves us in reality. And it is inside this that consciousness is forged. To say: "We are conscious", is obviously to say: "Nature is conscious, among other ways, through us." Regardless of the road we take, there is no road "outside" of nature. But in following the Ariadne's thread of thought in us, we may feel the presence of being continually penetrating our consciousness, and we may penetrate more consciously in being.

We will begin our journey with perception and imagination. From there we will venture into thought in order to then try to discern the very structure of the thought which passes through us and in which we actively think.

We can't get away from it. Seeing, hearing, feeling, tasting, perceiving, thinking and even understanding pass through the imagination, and this even to the point of what cannot be imagined. To feel an emotion, to reflect, to be penetrated by a mathematical intuition, all this passes through the imagination and exceeds it. To become aware, to know, to connect action and consequences, all this passes through the imagination and surpasses it. But how can we bring infinity into the imagination in order to let it out again more infinite than ever?

When a draftsman looks very attentively at a tree (act of perception), he discovers an infinity of details and he will limit himself. If not, it would be impossible for him to begin or finish his drawing. If a biologist examines a "simple" fir needle, the more sophisticated her microscope, the more details she will find. There will be no other limits to the intricacy of the details than those brought by her instrument or by her faculties of perception. The chemist will be able to progress to the examination of complex molecules where, among other things, the energy of light is accumulated. The physicist equipped with a particle accelerator will find an inconceivable quantity of details in the nucleus of a single carbon atom. In short, reality presents itself with an inconceivable number of details.

If we no longer know the difference between a product of the imagination (a representation) and reality (the thing itself), let's do a test: the imaginary being, in

49 Jean Prxyluski, *La participation* (Participation), Paris, PUF, 1940.

its dynamic, offers us a limited number of details; reality, no matter what reality, presents an infinity of details. The real is a bottomless well, if we dive into it, what we bring back up are only perceptions, representations, simplifications. Being never leaves the depths of infinity. What is found in our imagination is no more than a very poor outline. Compared to the real, our thought is unbelievably crude.

If we didn't have the ability to simplify the real, to reduce it to imaginary objects, to limit the details, we wouldn't be able to know anything. Seeing everything, absolutely everything, would make the least perception (construction of an image of reality) impossible for us. The extraordinary multiplicity of details is so close to infinity that it would exhaust no matter what eye, brain, computer or supercomputer before it could complete a single image. From reality's side, the eye, the ear, the nose, the senses in general must limit themselves, choose, transfer to thought a limited quantity of organized information called "perception" or "representation".

Man is the carbon paper of being. Between the copied outline and the real outline there is an infinite distance: one is a representation limited and prepared for the instruments of knowledge, the other is a reality literally irreducible, rooted in the inextricable mass of being.

It is not so much the senses that limit perception as the constraints specific to the operation of thought. The crystalline lens of the eye is, without any special instrument, already capable of so precise a reception of light that it would immediately saturate the brain if the latter did make selections. The nerve impulse must be transformed into materials adapted for the fabrication of an image. If not, the brain would "freeze" like a computer saturated with a surplus of data. To become functional, we have to photocopy everything in "representation" mode: a saving limitation, an unavoidable step for knowledge, but a dangerous reduction. The real (of an unheard-of complexity) must be inserted into the unbelievably small cavity of our brain. Out of it come rough mock-ups able to be thought by us. Before we can know, a nearly infinite number of bits of information have to be erased. To advance a single idea, an infinity of information has to be ignored. The price of knowledge consists of ignoring almost all the real information (in wave or corpuscular form) in order to retain only a little of it.

Some autistic persons, because their schematization reflex is weak, can directly draw their perceptions after a moment of observation. An autistic person looks at a cathedral for scarcely thirty seconds and then leaves the scene and draws the monument from memory... The level of details retained is enormous, too enormous for practical application. The autistic person cannot think the cathedral, it overwhelms him, for he has kept a dangerously paralyzing level of details. Nonetheless, there is a limiting of details, an already vast sacrifice of all the information that has reached his eye. In the case of a so-called normal person, the filtering is a thousand times greater, almost nothing of the cathedral will remain, a rectangle, some triangles, a cross...

The more structured thought is, the more elaborated its vocabulary will be, the more it will be able to subtract information judged useless and retain information judged pertinent. Our intention sculpts perception even before the experience. We retain information following an outline that resembles a net thrown into reality to catch certain elements judged useful. Looking at a fir tree in the middle of a field, a poet will have a perception totally different from a biologist's.

Intention acts like a principle of simplification. A little while ago, you were looking at a forest and you noticed a fir. You chose one of its needles to place under a very powerful electron microscope. You choose a molecule. Each time, a limitation consists of cutting one unit off: in a forest, a tree, in the tree, a needle, in the needle, a molecule... This unit depends on the intention, but in its turn the intention depends on a principle: unity. Thought cannot have a structure independent of certain necessities peculiar to thought, necessities which can be discovered by mathematics and logic among other things. The wildest, the most irrational imagination is still inhabited by some principles such as unity, multiplicity, discontinuity, continuity, unilateral relations, reciprocal relations, additivity, subtraction, form, color...

With experience, the unity chosen by thought will not be arbitrary; it will enclose a system or a subsystem that has at its disposal some degrees of differentiation and autonomy. The peoples of the North, for example, differentiate a great number of types of snow.

To make for itself representations starting from reality, thought utilizes concepts among other things. The representation of the tree I saw yesterday is something like a mixture of perception and my acquired concept of a tree. The concept appears as a simplified form for responding to needs for generalization. The concept must be able to be applied to all trees, so it must aim at simplicity. But if we deepen the notion of our concept of tree, we will ask ourselves what the difference is between a tree and a blade of grass. The concept of tree, and the concept of grass at the same time, will have to be made more precise. If we ask for the difference between a tree and an animal, we will make other distinctions on other levels. The same applies if we want to distinguish a natural tree from an artificial tree.

As long as we don't think about the concept, it appears simple and schematic, but if we have the misfortune to go deeper, we begin to attribute to it a set of precisions that can go very far. An almost infinite set of precisions is necessary to arrive at a "simple" form capable of serving as a concept. A perfect concept, that is to say a definitive concept that would serve to define the tree in a complete fashion to the point of being able to distinguish the tree from all other realities, includes an unlimited set of precisions. In short, such a concept doesn't exist. Every concept evolves and contains a zone of inclusion which attaches it to other beings and the common essence of all beings.

Even a concept said to be "abstract" (which doesn't refer to a reality perceptible by the senses) appears to collapse into details if we look into it more deeply. For example, a circle is very simply defined: a set of points equidistant from a single center. But this set of points must be infinitely stable, the set of points must be infinite (if not, the circle would not be a circle, but a star with infinitely long points developing between the points of the circle). The diameter must maintain a very precise proportion in relation to the circumference, in fact, a proportion so precise that only an infinity of figures after the point can express it (the number π). The circle must be drawn in a two-dimensional space and not in one or three or four dimensions. Plane geometry is plane only for someone who doesn't linger over it. We could pass our lives studying its isomorphic space and its strange characteristics.

This is also true for numbers. The numbers 1, 2, 3...seem equivalent. But the equal and odd integers don't have the same properties. The series of prime numbers is not definable (at least until now) by equations. Some operations produce imaginary numbers (which aren't imaginable in the same space as the other numbers)... We quickly find ourselves with a set of very complex concepts.

We can escape details only by ignorance and absence of thought. In other words, a simple outline is no more than a prejudice. Physical reality and even mental reality are entirely different. They involve an infinity of precisions that must be short-circuited at least in part in order to go forward. If you want to plunge into the keenest analysis, you'll never get out of it.

We don't make up a supposedly perfectly simple thought-space. The space-time of thought is not just anything, and it is above all not an invention. We can try to know it, but we can't act as if it were an arbitrary construction that we can simplify arbitrarily. The space-time of imagination is not the result of the imagination; it obeys rules which have not yet been completely discovered, far from it.

But let's leave the world of details. Let's go to the side of the absence of details, the side of "one". One is not much. It's so small that it's not even possible to see a tree, a needle, a cell, an atom without anything else, absolutely nothing else. In order to see a tree, we have to cut and paste the tree into a space that is not this tree. We need two things, then: the tree and a space without trees. It is impossible to see a tree without other things to delimit it, not even space, for that tree would of necessity be infinite. All finitude can only be a delimitation in an infinitude. Every one is so infinite that it cannot be thought and this one can be some thing only if it is delimited by something different from itself. What delimits it must be different, but not absolutely different, for if the tree's "other" is absolutely different, if it had absolutely nothing in common with it, it would not be able to delimit it, it would have no action on it. It would be two ones (the tree and the other thing) which would have nothing to do with each other, and they would have nothing, not even a space-time, in common.

It can be seen that one is not more thinkable than two. There must always be a third reality to unite them, even if it is only space-time. And all the realities that

are in space-time must at the same time be of space-time and other than the space-time which connects them.

One is, then, as unknowable as a multiplicity without limits. It too requires a limit and must be limited by a second reality which is not it without being absolutely different. However, as soon as an entity, a tree for example, has been limited in a space from which it stands out, it is so multiple in all its details that it is necessary to limit the level of details we want to observe.

In-finite "one" is so absolute that it is not thinkable and it is not physically viable either, for it is too static. Multiple infinity is not thinkable either unless it is coherent and we limit ourselves in the analysis. It is not physically viable either, for an infinite exchange of information would make any physical dynamic impossible. Everything happens as if reality, whether physical or mental, escapes these two absolutes of infinity (the infinite "one" and multiple infinity) even as they carry the traces of infinity in its details and in its unity. "One" is not enough (which makes it in-finite) and the infinite multitude is too much. These two "abstractions" are however present and absent at the same time in physical reality and in mental reality.

Whether from the multiple side or the unity side, thought reduces reality to representations and conceptions. But if we put a conception or a representation to the test, we discover a large number of "just about's", big or little forms of cheating, for efficiency requires us not to think about everything, to stay on the surface with consensus-based conceptions and representations that suit everyone a little.

From this point of view, what is consciousness? It is that encircling which "knows" that between reality and representation there is a radical difference: the first is a mystery, the second an acceptable, operational and necessary "illusion". Consciousness is that reality which sees thought in activity and smiles at its unremitting work of reduction. It is there before, during and after thought. The distinctive characteristic of consciousness is that it is never completely duped. It sees the design and the destiny of thought, its incessant activity of weaving, its web of words between the ground of being and the ground of thought. It knows that the ground of being as well as the ground of thought are indiscernable and ineffable, and that there are only more or less superficial representations which lend themselves to our mental manipulations. In the great traditions, this invokes the gap that separates the sacred from the profane (the concept of god being obviously on the side of the profane, while the mystery of the infinite and the finite is on the side of the sacred).

CHAPTER 3 : An all in an all

I am an all. If I were not an all, if I were only a pile of dust, I would not exist and the pile of dust would not know that it existed. What is an all? No one knows it

completely and it is without a doubt a very great mystery, but if an all were not on one way or another a reality, if only the parts existed, there couldn't be enough coherence in us to think, and there wouldn't be enough coherence in the cosmos for it to be thinkable.

The all can't be just the total of the interactions between the parts. A strange reality has formed the parts, a strange reality holds the parts in conformity with the laws of relations, a reality ensures coherence. The all exists and without it, nothing would be coherent enough for the parts to communicate with each other.

I am an all, but if I look around me, I realize that I am enveloped by a landscape, an earth under my feet, a sky over my head. Let's go toward that envelope. Let's imagine that we are turning toward something, no matter what, but that we don't want to miss a single detail. Let's imagine that, in another direction, we are turning toward an all, the most inclusive there is, an all which encompasses everything. To reach these two goals at the same time, the best thing would be to turn toward the biggest one that exists and is certainly real: the universe, the maximal conception of a reality one and multiple. The biggest one possible for our eyes is certainly the universe. By definition, the universe is the inclusive all par excellence. For us, however, it is perceptible only from an inner point of view, from inside, so to speak. The all includes us. Obviously the all exists before all perception, its manner of informing itself calls upon mediators of interactions such as light, gravity, etc.. It doesn't need us in order to be informed about itself. In it, all is interaction, information.

From the point of view of electromagnetic waves, it is not all that receives all, but an atom, a molecule, a plant, an animal, a human, any receptor system receiving information coming from all the universe. No receptor in the entire universe is deprived of information about everything, and this is thanks to a radiation that informs it. All receptor systems in the universe are systems of reference and are informed of everything. The universe is convergent from the point of view of information. I don't mean that we receive all the information about everything, nor that everything in the all informs us of its existence (some realities are perhaps forever hidden from us), I simply want to say that light and many other transporters of information connect us to an all that is really the most inclusive possible. Whatever we may be, people, atoms or things, we are a system of reference equivalent to all the others and we receive from everything, an extraordinarily complex radiation (infinity of details) which informs us of everything (but not absolutely).

Let's imagine we are turning toward that one containing all. We can look everywhere then, it's equivalent. Since we are a convergent system of reference, the rays are turned toward us; they arrive from everywhere with an equivalent density in every direction. It's even more true for the gravitational rays that pass through all obstacles as easily as they cross the void (like neutrino rays, for example). The rays that reach us travel in the void at the speed of light, which is very slow given the immensity of the universe. The light of quasars (very old formations) takes several billion years to come to us; even a celestial bureaucrat

wouldn't have the patience to wait for light's "report" on the most distant quasar. It is impossible to have an up-to-date vision. We see everything at the same time, but nothing is up-to-date (except for what is close to us).

The extraordinary property of the universe by which each point is informed by the whole set of electromagnetic radiations is called transparency. An opaque universe would be a universe in which each point would be informed only of the points next to it. Let's imagine, then, that we are taking off, not in a plane, but on a ray of light leaving the earth and going off to the far reaches of the universe toward some quasar. For the travelers, the journey would be instantaneous. To straddle a ray of light in the void is like straddling time itself. It doesn't pass, for we are on its back. This doesn't prevent the others from seeing us depart, from waiting for us, from growing old and dying. For our friends, and for all that isn't on our ray of light, our journey will last billions of years.

Let's suppose that we could travel much faster than the speed of light, at the speed, for example, where two interlinked specks of light inform each other: a speed which for the moment appears infinite. If we were one of the two specks and our brother were on a quasar since the beginning of the world, we would already have been informed of what was happening with him. In brief, there would no longer be space or time between us in relation to this information.

Space is the time that multiple things take to inform each other so as to be part of a total unity (let's not forget that "space" comes from *spaze* which means time, duration: space is a relation between temporal systems). Without radiating information, no unity, no "uni-verse". In the case of the universe, physical light and its constant speed act as one of the unavoidable "structuring" of this space. Change the speed of light and you have another universe.

Light keeps unity in multiplicity. Obviously it is also something which, like the interlinked specks of light, "travels" at infinite speed, that is to say, something which must always be there everywhere at the same time. For example, the speed of light must be the same everywhere in the void, it must be constant, for if not it would not be a universe, but a chaos of a universe. Constants are everywhere the same in the universe at exactly the same time. Relations are defined in the same way everywhere at exactly the same time (the laws of physics are the same everywhere exactly at the same time). In short, if light "spatializes" the cosmos, extends it over vast spaces, the constants and the laws (rules of relation) maintain an intemporal (though not absolutely) unity of structure indispensable for its functioning.

The "relation" of the all to the units of reference which inhabit it is temporal in regard to information and intemporal in regard to structure. In this all that is the universe, we ourselves are an all. Our body can't be anything other than a "piece" of universe, a piece that forms an all. It is hard to imagine that our thought is simply an abstraction, for when we conceptualize a bridge, at length and with the work of hands and tools, a bridge over the river really does take shape. Not only does the landscape change, but a chain of consequences is launched, and these

consequences have effects on us. It is, then, more likely that our thought that our thought is, like our body, a living "piece" of total thought, a piece which has its own unity, a piece which forms a totality in the totality.

CHAPTER 4 : Being and thought

For a physics (dynamic of energies and information) to be possible, certain conditions are necessary:

Unity and multiplicity. An ultimate but relative unity must escape stasis. An absolute unity would have no dynamic. Nonetheless, without some dynamic unity, it can't be seen how the laws of the universe would be the same everywhere, and therefore we wouldn't be able to understand the coherence of the cosmos. In short, an absolute chaos cannot be a knowable universe (not even by itself) and thus quite simply cannot exist (it wouldn't have sufficient coherence to hold time). An absolute and perfect unity can't exist either; it would be too static to extend itself in time. Unity and multiplicity are not opposites, but necessary complementarities.

Singularity and universality. Each part must be sufficiently unique (through some details), unified and "autonomous" to not immediately be either the all or another thing. It must then include an infinity of details which allow it to have a unique individuality even while exchanging information that make it participate in the total dynamic of the all. The singularity of each reality, a singularity produced by the infinity of details, is not contrary to universality, but is complementary to universality and this is produced concretely through constant exchanges of information. Each snowflake is singular, but none is isolated, each participates in the all through exchanges of energy and information.

Being and information. It must be possible to establish a set of exchanges between the all and the parts. To do this, each part must interact thanks to an exchange of energy-information that is not exactly its being. The exchange of signals isn't the displacement of things. This necessitates some differentiation between the part (the atom, let's say) and the interactional radiation (the exchange of gravitons, gluons, photons...). It's not about two realities totally different in nature (the atom too is a system of energy-information). However, what informs (light, for example) doesn't transport all the atom in its infinite detail, but only what the other atoms need to know for everything to function.

Immediacy and temporality. Some speeds of exchange of energy-information must be constant and finite (for example, the speed of light). If not, the universe would be too incoherent or too immediate to exist as a physical dynamic unified enough to function. But some structures must be immediately known everywhere (for example, the constant speed of light must be immediately the same everywhere). Immediacy and temporality are not contrary, but complementary.

Transparency and opacity. Space-time must be able to develop as a structure of distances sufficiently transparent to permit long-range exchanges of information. Without transparency, light would not be able to travel. Gravitational information lives in an even greater transparency than that of light. However, the wave must be captured somewhere by some thing, for if not it is totally useless. In the place where it is captured, its journey ends (at least for a time and in some manner). There are, then, opaque realities that don't allow information to pass, but capture it. In short, transparency and opacity are also two complementary realities.

To this other characteristics are added which seem to serve to avoid an absolute redundancy. In fact, if we stopped with these first five characteristics, physics could only be a very simple system constantly returning to the same thing in all directions of space and time. To avoid such a confinement in homogeneity, at least one other characteristic must be added:

Negentropy and entropy. Exchanges of energy-information create complex systems on the atomic, chemical, biological, ecological and cosmological levels when there is a continual dissipation of energy that keeps the systems out of equilibrium. This is negentropy. However, if there weren't a tendency toward the breakdown of complex systems, they might become no matter what and the cosmos would rapidly lose its coherence and its proportions (one system might become hegemonic in relation to the all). Every complex system must struggle with the forces of simplification in order to maintain itself in a general harmony. Life is an example of this necessary struggle for a total protection of the ecology.

Now, if we leave physics to enter the universe of thought, we will also find basic principles necessary for thought. For knowledge to be possible, certain conditions are necessary also:

Unity and multiplicity. A theoretical unity must be broken. An absolute unity is not thinkable. Without some unity, it is impossible to see how a mental world could keep enough of its unity and diversity to be intelligible.

Singularity and universality. Every part of exterior reality must be able to be perceived and represented by a process of reduction both physiological and intellectual (there must first exist, then, a difference between the information and the thing it informs us of).

Being and information. The representation and the thing represented must remain in tension. We must constantly keep in mind that, in relation to the thing, the representation is a radical reduction. It is a simplified outline that doesn't exist in the world of things. It is produced by connection with a concept (a representation is an intermediary between a thing and a concept). For example, a dog can become a representation if there is a concept of "species". This concept constitutes a great simplification; the concept is applicable to all the individuals who share defined characteristics. Nonetheless, through some aspects, the

concept possesses an infinity of details as we seek to distinguish it from other concepts.

Immediacy and temporality. Thought could not exist without some coherence. But thought does not invent the base of this coherence. Thought can gradually discover logic and the basic paradoxes of logic. Logic can evolve from discovery to discovery. But the base of this coherence is stable, always there, immediately present in all thought. If the discoveries of logic and mathematics are evolving, and thus temporal, metalogic (the real bases of logic) is intemporal. Logic is not simply an intellectual game, it is the minimal structure that permits the very existence of thought and of reality.

Transparency and opacity. Representations define themselves in a system of exchanges which as its own characteristics in an imaginary space-time. The world of the imaginary is at the same time very different from the real world and similar to it. Representations and concepts live in a mental space-time that organizes itself into complex systems. But there is a limit to the questioning. We can't question a concept indefinitely; there comes a time when this concept appears tautological. If questioning is similar to transparency (it opens concepts through differentiation and association), its limit touches opaque elements (the basic concepts that are not "fragmentable").

Negentropy and entropy. Thought works by complexifying and simplifying. For example, in mathematics we try to simplify the system of thought to the maximum extent, but this leads to complexities. There is something in the real structure of thought which makes it impossible to simplify to the point of axioms perfectly coherent with each other. The relations between axioms create complexities that are sometimes proven impossible, sometimes insoluble until proof is found to the contrary.

All in all, even though they are different, the real and our thought (not thought as we imagine it, but thought as we experiment with it) show amazing similarities. The necessary conditions for physical life and the necessary conditions for thought resemble each other.

Our thought is ignorant of the "material" knowledge (exchanges of energy-information) that is exchanged in reality and yet is itself organized by exchanges that follow rules similar to the rules we encounter in "material" reality. Thought is a stepping back from the real which allows us to return to the real with ever superior weapons for understanding the real in the way that a work can be understood by a creator. Everything happens as if understanding thought equipped us for understanding the understanding of nature and vice-versa.

But as for us, we are beginners in thought, it is only with difficulty that we are tearing ourselves away from non-thought. We are nearly always in a state of non-thought. Waves of vague ideas ramble in our skulls; sometimes we take the time to string together one or two coherent thoughts, and sometimes a thought is imperative.

Starting from the few rare exercises of thought we have with great difficulty succeeded in achieving in our lives, we can, even so, feel our unity with the keen and lively thought that nature itself is. The characteristics that allow a physical dynamic to exist are also the characteristics which render it intelligible. For some, this comes from the fact that it is we who think the world and therefore we take from the world only what is intelligible for us. The "logic of the cosmos" would only be a projected human logic. But then, how is it that it is the cosmos' very nature that has, so to speak, forced us to become logical, more intellectually rigorous so as to advance toward knowledge? If the known cosmos were only the projection of our thought, we would of necessity be enclosed in a tautological system, and there would be no history of thought nor history of science. On the contrary, we are evolving in this relationship with nature and this is called science.

Thought, however, is not just a tool of knowledge. Through its possibility of acting on reality it becomes a cause of change. It creates exchanges which change nature. When nature passes through thoughts that themselves pass through consciousnesses, nature can increase in complexity (a garden, for example) or decrease in complexity (for example, the disappearance of species). Thought acts like a second creator, like a classical musician who participates in an orchestral piece that began well before her and involves many others besides her.

However, we surely have to admit that the two creators there are not equal, for one is coherent and possesses billions of years of experience, while we don't even manage to be coherent or even take responsibility for the consequences of our acts. Fortunately, our intuitions can no doubt participate in the all, but with enormous risks of error.

We could outline the cycle of thought as follows:

- 1) Reality is organized in a dynamic way, and the characteristics of the coherence necessary for this dynamic make it intelligible up to a certain point.

- 2) Knowledge necessitates a thought with characteristics at the same time similar to and different from reality. Too similar, and our thought would lose its consciousness and its distinctiveness. Too different, and our thought would not be able to evolve in its knowledge of the real and in its ability to collaborate with it.

- 3) The relation between our thought and reality supposes that the two dynamic systems function according to compatible principles and that their relation can create an evolution of representations and concepts for a better embrace of the real and an evolution of actions for a better adaptation to reality.

Why be surprised that the cosmos that produced us has produced a fellow creature?

CHAPTER 5 : The conditions of consciousness

Let's return to *immediacy*. All reality exists only through exchanges of information. In physics, these are the interactions between the components of the nucleus of the atom; in chemistry, the interactions between the electrons; in biology, there are thousands of electrochemical exchanges between the components of a cell, thousands of types of exchanges between the cells, between the organs, between the living beings themselves; psychological life looks like a set of internal and external connections; our collective existences depend on sociological, political and economic relations; planetary ecology is the result of a breathtaking number of exchanges of every kind between the components and with the whole itself.

All these exchanges of information are kinds of knowledge: the atom knows how to behave, this means that it reacts to the information that forms it and brings about its movement, the molecule behaves according to the exchanges of information that organize and mobilize it, the cell "knows" what it must do to preserve its internal equilibrium, the ant reacts to thousands of bits of information so as not to hesitate much in its behavior... Everything "knows" and this "knowledge" makes and moves all things.

However, if information didn't take a certain time to travel and reactions a certain time to occur, nothing would exist, not even space which depends on the relative "slowness" of the exchanges of electromagnetic waves. In perfect immediacy, no unfolding would exist because no time would exist; all information would be so immediate that space would not be able to widen. Space is the relative slowness of information, the limited speed of information which defines the distance between distinct realities. Without space, nothing distinct could exist, not even purely spiritual identities, for they would be one and the same identity, so immediate that we might speak of a pure coincidence of being and nothingness, its static state would annihilate it into an infinitely immediate point. Imagine something that knows itself so perfectly, that is so perfectly and so immediately itself that there is no longer distance possible on any level, this being that is immediately itself is so infinitely minuscule (without space and without time) that it has all the characteristics of nothingness.

Let's return to *multiplicity*. It seems that all the components of reality are at the same time the result and the cause of coherent information traveling at finite speeds. Without this basis, physics, chemistry and biology could not be sciences; no knowledge about this information and these realities would be possible, for there wouldn't be any exchange of information (of "knowledge"). In short, from the sole fact that some knowledge is possible and effective, we are led to think that reality is a coherent whole that unfolds in space-time through information exchanges. No energy seems to exist without information. Every energy transfer serves to communicate information. Nor can we say that first there are things and that these things communicate; the things themselves, even the most elementary, are exchanges of information.

When we pass through a meadow in flower, we are fascinated by this unbelievable fabric of exchanges between atoms, molecules, cells, plants, insects, rodents, the sun, the moon, all the stars... And all this functions. A complexity it would be impossible to describe even if we knew it, for it is much too composite, mobile and evolving. And yet there is every reason to think that such a complexity results from rather simple principles, somewhat stable rules of exchange and at least partially comprehensible relations. When all is said and done, the colors are matched, the sounds sing, the scents intoxicate, and this doesn't collapse on the simplicity of its base, but holds up, is continually completely transformed without ever falling into a fatal disorganization. This seems organized in such a way as never to be terminated but, on the contrary, to liberate futures not contained in the potentialities of the beginning. The scenarios which lead to the absolute death of things, and they are numerous, are not to be found in reality, at least not until now. Today we foresee the diminution of the cosmos more than its annihilation (Andrei Linde's theory of an eternal and self-reproducing inflationary universe).

Let's return to *intelligibility*. That the universe can be explained theoretically starting from an immediacy (a minute point) that is unfolded into a coherent set of internal relations in such a way as to widen itself, create multiplicity, maintain itself, grow more complex in proportions that are limitless in principle yet at the same time harmonious in practice, thanks to regular exchanges of energy-information (capable of being expressed mathematically), this origin (immediacy) and this unfolding (multiplicity) allow the universe to be a single intelligible reality in its totality and in its details.

When intelligence returns to the "knowledges" that govern physics, chemistry, and biology, it knows that it doesn't know, it knows that it must learn from reality. This is science. The knowledge of one's ignorance has borne the name of "learned ignorance" since Socrates. Learned ignorance doesn't just keep the seeker of truth in a state of humility, it guides her or him. Intelligence really knows that it doesn't know, but also knows that it is able to know, that this knowledge is within its reach. This is learned ignorance also, and since it has to do with a position of second-level intelligence in regard to first-level intelligence, learned ignorance is an act of consciousness.

Once these components are put in place (immediacy, multiplicity and complexity, intelligibility and learned ignorance), we are struck by the similarity between the conditions of consciousness and the manifestations of reality.

Were the intelligibility of the cosmos achieved without trial and error, thanks to unique and predictable solutions, we might be correct in saying that it is a mechanism. The characteristic of a mechanism is to always contain in its seed all that it can become. But this is not the case. Through accidents, probabilities, possibilities, complexity opens its own road. Consequently, we have the impression that we are dealing with an intelligence that works in its own actions and reactions, that discovers ways of self-organization, that invents as it goes original solutions for maximizing complexity. An organic thought.

The tendency toward complexity resembles a battle, as if one wind went in the opposite direction, as if one current flowed back toward disorganization. For example, in order to fall back to a far lower level of complexity, you would only need to increase or decrease the Earth's mean temperature by a hundred degrees Celsius (nonetheless, it is very possible that there are other temperatures favorable for self-organization). Chemical molecular organization and biological cellular organization seek to grow in complexity as soon as this is possible and even tend to produce for themselves their own conditions for complexification.

If consciousness is anything, it is critical intelligence (reflecting on meaning and finalities) that acts on functional intelligence (producing complexity in order to open new futures). Given that the human being comes from nature, is of nature, and remains a being of nature, at a certain height we have the impression that what it is about is nature itself putting itself at a distance from itself in order to question itself about itself and act on itself with a view to a particular level of complexity in order to achieve not a finality, but the invention of new finalities.

In order for there to be consciousness, something of reality must of necessity already be unfolded, a sort of music that has created, by its own temporal structure, an intelligible spatial architecture, a cosmos. In the face of that living work of art, an observant intelligence recognizes itself, perceives that this reality has something to do with itself, that it follows principles, rules that bring about drives toward complexity. The observant intelligence can feel the intelligibility of things. In the face of this, consciousness wants to participate, to try to add values. In its eyes, the world should be worth something.

In this "reflection" of the second creativity (invention of finalities) on the first creativity (production of complexity), one passes through the feeling of a "kinship of intelligence": Nature and I resemble each other like a child resembles its mother, as the leaf resembles the tree, as the appleseed resembles the apple. There is, then, a concept of self that includes all nature. All at once, everything is at the same time unknown (a human being doesn't know what an atom knows) and yet everything appears knowable (at least in principle). As if the "knowledge" were suddenly found outside itself in order to let intelligence rediscover itself and feel its effects through the human being with new creative aspirations. This strange feeling that our bodies live in a world functioning thanks to information exchanges, to "knowledges" which escape us while we who inhabit these bodies have the intelligence necessary for rediscovering its logic, we call this so strange dichotomy consciousness because it desires and is able to understand what it doesn't know even as this knowledge (information) keeps its being alive from moment to moment.

It is impossible for a person to remain in this movement for long without imagining that perhaps all of nature is conscious long before she or he is. In fact, how could nature produce this world, keep it alive, develop not only all its potentialities, but add conditions for new possibilities? How could it succeed in this without constantly reintroducing an intelligence into an intelligence so as to invent new ways of producing an animal able to do as much and thus participate

in its movement? How could we reach consciousness if a consciousness weren't working to awaken itself through the natural beings of which we are timid and crude examples?

People will say that everything is explained by atomic interactions. My brain is explained by atomic interactions too, but this doesn't prevent me from being consciousness. On the contrary, my physics has some common nature with my consciousness just as it participates in my consciousness. "Matter" and consciousness are two sides of one and the same breath. The former is consciousness seen from the outside; and the latter is "matter" that perceives itself from the inside.

To sum up, no consciousness seems possible without: 1) the immediacy of its own foundation, its own creative source; 2) functional intelligence that is real and thus able to create complexity and means of arriving at complexity not included at a given stage of possibilities for a system (a first way of widening the future by introducing possibles into the process of evolution); 3) introspective and critical intelligence able to perceive, create and participate in finalities which multiply (a second way of widening futures); 4) a learned ignorance which separates and unites these two levels ("matter" knows, consciousness learns); 5) kinship between "my" consciousness and nature's and the recognition of this kinship.

Consciousness is an intelligence of intelligence whose distinctive characteristic is widening the future's possibilities by multiplying finalities. In short, it is about being able to be filled with wonder at every step without ever closing off the processes ahead of us, for a process, no matter how wonderful, cannot, once closed and locked, any longer be filled with wonder. If consciousness exists, this means that at any given moment there is a certain number of possible futures, and that later, at another moment, there are even more possible futures. If there is consciousness, functional intelligence opens up and spreads out like a tree, by multiplying its twigs.

CHAPTER 6 : Memory and consciousness

Throughout the cosmic "void", every fraction of a nanosecond a "particle", that is to say a quantum of energy-information, cancels out an "antiparticle". It's the pulse of virtual energy. The void pulses, cesium pulses, as well as all stable complex systems (from the nucleus of the atom to living organisms).

Rhythmic time: the beat of the void and its systems. Time seems discontinuous, as if there were no string to bind together the smallest fractions of a second. But if there were no link between the pulses, there would be no pulse at all. Some kind of memory has to "hold" the beats together in order to see that they truly are regular beats. If not, there would never be anything more than the last pulse, and

the poor last pulse wouldn't know that it is a pulse. It wouldn't be a pulse at all, for it wouldn't be connected to the preceding or the following pulses. Discontinuity and continuity are not opposites, but necessary complements.

Hysteresis time: the delay of information due to transport, most often by an electromagnetic wave such as light. This delay is what maintains space, its elasticity, and the network of distances which separate and connect things. Joining together is inseparable from cutting apart.

Historic time: the history of the complexifying of systems fascinates us, but this history cannot be separated from that of disorganization. It is at this level that time shows its irreversibility, that it follows a double arrow: self-organization (negentropy) and disorganization (entropy). The seamless relationship of entropy and negentropy appears to us in the form of "struggle for life".

When there is no internal or external interaction, as in the case of photons moving in the void, there is no passage of time. If the "eternity" of free photons didn't exist, time would be torn to shreds; it would be a confetti of moments. Moreover they wouldn't be moments. Infinitely isolated from the others, each moment wouldn't even exist, too tightly surrounded by the nothingness of time (an unthinkable). Eternity and temporality are, then, complementary also.

In short, time is the joint between discontinuity and continuity, union and separation, eternity and pulsation. By what miracle do these "opposites" manage to form time?

Let's go toward the source. The apparent discontinuity of pulses and interactions raises a major problem. In fact, there wouldn't be any time if nothing brought the moments together. If moment A and moment B were not united by a kind of string, there would be an A and B, but there wouldn't be time. B would be unaware of A. There would be no succession of before and after. Time is a continuous flow; to be more precise, almost everything that belongs to A should be found in B (the latest moment synthesizes the preceding moments). The flow of time is in fact a reproduction (but not just a reproduction).

There is no time without memory. It is this memory that is the very "body" of time. But it's a funny kind of memory, a strong, *primordial* memory, one of which our psychological memory is only a weak reflection.

In fact, B is A modified or not modified. Here it is not about the transmission of information in time, it is the "thing" itself that is transported from moment A to moment B, it is reality itself that "travels" in its own time. Often the thing finds itself transformed, but it recognizes itself as the same thing and it is recognized as the same by its environment despite the transformations. It is, then, a memory that includes a knowledge of self capable of passing through the transformations, a knowledge that passes through successive forms of its being. Its "integrity of identity" is preserved, for if not it would not be a whole, a system, an identifiable coherence that functions.

Obviously the word "knowledge" is used here in a strong sense, as when we say that the atom knows how to react to gravity. In regard to time, it is an even more immediate knowledge, for it is the very thing that keeps its integrity in spite of transformations. What do we mean by "thing"? We are talking about the system, of the whole set of interactions, and we must insist on the idea of the whole set, of the whole, because there can be a great number of changes in the parts, in the relations between the parts, and yet the whole will be capable of being located not only for its own sake, but also for the other realities that will recognize this system as an atom, a molecule, a cell, an animal, a star..

In short, time is a peculiar memory, for it shifts into a continuity things themselves in their integrity in spite of transformations which can be considerable. The proof is in the exception. A transformation can occur which breaks the thing's integrity. Then we will say: the photon has been absorbed by the electron; the proton has come apart; the atom is dislocated; the molecule is divided; Jean-Marc is dead. The memory in question transports the whole network of relations that holds together the integrity of things. This integrity can be broken.

Time cannot be limited to a single string, for example the string of an atom which slips in time at the rate of several billions of pulsations per second. Why? Because the knowledge transported gathers up all the information that reaches the atom and transforms it. In principle, this includes all the universe. We would then have to imagine a network of strings, and even a continuous fabric encompassing the whole of reality. The words "string" and "fabric" are analogies borrowed from space. We must be careful with them, for this "fabric" just can't be a substance. We are in the order of time, so it has to be a memory in the strong sense of the term, a substratum reproducing the relations that maintain the integrity of the whole and of all the "totalities" which form the whole.

This is why Henri Bergson, Teilhard de Chardin and others have identified the consciousness with time, for the "con-science", in its minimal meaning, is a "science" of self, a knowledge of identity that crosses transformations, a memory. Without this "conscience", this continuity of identity, time would be torn, the universe would not temporally hold together, it would disintegrate into moments independent of each other and unable to slip into each other. On the other hand, this "knowledge of identity" must be strong enough to recognize itself when transformed, but flexible enough to accept the transformations. It holds to being, it is detached from form⁵⁰.

⁵⁰ Once again they will tell me that the words "knowledge", "consciousness", "intelligence", etc., are psychological words, that I use them in an analogical sense. I sincerely think that we must understand the opposite. In the concrete cosmos, we find the full meaning of the words knowledge, consciousness, intelligence. It is there that they have their first meaning. Once in us, they find a second meaning. Once in the human mind it is no longer anything more than an analogy of knowledge such as it is lived in the reality of the cosmos. It is we who are second in relation to the cosmos, it is we who are the fruit and the projection of the cosmos, it is we who are the analogy of the cosmos, the microcosm.

But what is a transformation? For there to be transformation, there must be an internal movement, this thing must be composed of other things, and these smaller things must change position in relation to each other. A transformation for the total thing is the complete set of movements among the components inside this thing. For example, an atom is a system which evolves in time, it pulses, it is transformed even as it keeps its identity from one pulse to the other. Let's imagine that it is persecuted by a photon that changes the orbit of one of its electrons and consequently changes the energy level of the whole atom. The atom has undergone a transformation and this is shown by the distance between the electron and the nucleus. This transformation is known to the interior of the atom thanks to exchanges of information between its components. Space is first of all a place of internal transformations. For the electron or for the nucleus of the atom, there is not a transformation, but simply a change of distance. For the nucleus and for the electron, there is only a change in distance, but for the "whole" atom, there is transfiguration.

Let's change the scale. The universe is a whole in transformation. The transformations it undergoes are manifested by movements from point to point within it. The time which allows exchanges of information between the components and the time of the metamorphoses of the whole are not situated on the same system of reference. But the whole remains a possible and even necessary system of reference. There is a universal beat and beats in each part, there is a universal time and multiple times. The time of the whole and the times of the parts (which are totalities) are certainly synchronized and in harmony, but we must distinguish them.

Whether the whole is an atom, a planet, a star, a galaxy or the universe, how does it know itself? Let us suppose that a point in space serves as its spy. The point will be informed of all the internal movements of the universe. However, in order to inform the whole, who would this so well-informed point address? Where is its principal, where is the whole? Must it, for example, inform each one of its parts? Would informing each part inform the whole? What is a whole? The answer to this question is of considerable importance to all levels of reality. For the whole is a necessity, it must exist as such, for if not, the cosmos collapses.

We are almost compelled to imagine the following solution (that of Albert the Great and Nicholas of Cusa): at least one of reality's dimensions does not occupy space; it has remained infinitely small, and it is the whole, since it gathers everything into the infinitely small. The whole is it. Whatever the size of the space occupied by a whole, it is great in some dimensions, but one dimension remains infinitely small, that is to say something is able to be informed as a whole about its own transformation. This is the *transphenomenal* point. It ensures the coherence of the whole and the preservation of identity in the transformations of the whole.

This point is infinitely small since the type of information it contains doesn't travel at the speed of light but is everywhere at the same time (for example a law of physics, a constant, a relation, an equation). This point is infinitely great since all reality respects this kind of information at the same time.

So where is this point, this not-unfolded dimension? It can't be somewhere in this space, for then it would be a component of the whole and not the identity of the whole. It is something infinitely small (in the sense that it synthesizes the whole and its identity). Something infinitely small that is everywhere at the same time. An eternal moment for an eternal dimension in which all of time unfolds its differentiations. This preservation and this reproduction of the totality and its integrity, this immediate knowledge of self is a memory, but a memory that knows itself and recognizes itself as "identity". It is difficult to deny its consciousness. Not only does it maintain identity in the flux of time, but it maintains the identity of the whole across transformations. This identity, however, must not be imposed as a form.

For this transphenomenal point, the whole is a being who knows itself, that is to say who knows that the knowledges exchanged in it form, all in all, an identifiable knowledge, a coherence of laws, of principles, of reality which forms its identity. This strange "continuity" of reality envelops the before and the after, the whole and the parts. It is a kind of self-knowledge that makes it possible to say that there is a transformation, a time appropriate to this reality. This strange unity is not necessary simply for the existence of the whole called "universe" (the inclusive maximum), but is also necessary for the whole called "atom", the whole called "cell", the whole called "system" and no matter what concrete system of reference. Discontinuity acts within a continuity: memory. Memory is such that it preserves the identity of totalities across forms thanks to a mysterious point of coherence which has all the characteristics of consciousness.

CHAPTER 7 : The future and consciousness

The future is not just an imaginary reality. If the past survives in memories (physical, biological, psychological) and probably in an integrating total memory also, the future preexists in the potentials, in the actual and in the things themselves.

In the *potentials*, the future is defined as a very concrete set of possibilities and probabilities. For example, I don't know how, but I definitely do know that I am going to die. I don't even know what death is, but I know that I am going to it. In physics, a ray of light knows before it reaches a junction how many gates form this junction. Projected on a wall with three slits, the photons (specks of light) will share the routes in a very impressive manner. When the photons arrive one by one, each photon knows where to go, for it knows the arrangement of the slits

and how the preceding photons are distributed⁵¹. We could give multiple examples like this, in physics, in chemistry and in biology. The future is not nothing, it is structured, it is the structure of the possible. There is not an infinity of routes before us, but potential routes and impossibilities.

In the *distant actual*, the future is defined by information sets (physical, chemical, biological, sociological...) which connect all things without exception to the limited speed of light. Everything is connected, but everything is connected at finite speeds so that nothing escapes the entire set of things, but above all nothing escapes the time it takes to be informed. At the moment when a thing receives the information, the things it is informed about are already somewhere else. Information is fundamentally delayed. When an atom is informed of the position of stars in space, they are actually somewhere else. The future is in the distant actual, for it is what defines and will define the movement of things. For example, a galaxy has just exploded; this creates a gravitational wave. Let's imagine that this gravitational wave comes and destabilizes the earth to the point of bringing about a change of orbit fatal to life. So the future of the planet actually is determined by the state of a distant galaxy. Our future approaches at the speed of light.

In the *things themselves*, time remains "captive" for a relatively long period in the form of the stability of things. Some organizations are very stable. For example, protons are extremely stable systems of three quarks. Energy-information is captured in part in units or systems that are stable. Without this stability, the universe would be an absurd chaos. But nothing is absolutely stable. Each proton contains an extraordinarily weak possibility of exploding in the next second, but this possibility becomes very strong over ten billion years.

If all the "knowledges" existing at a given moment determined the future in all its possibilities, there couldn't be any consciousness. There couldn't be any participation of other intelligences. The cosmos would only be a program and the mathematics it contained could be entirely defined by a computer. But this is not the case. The cosmos remains a mystery as we remain a mystery to ourselves. Some choices make no difference from the logical point of view, so the cosmos chooses apparently arbitrarily, with no apparent intention, yet in total these choices seem oriented toward a maximum of diversity, complexity, probabilities... Not as if it were pursuing a goal, but as if it wanted to widen the range of goals.

However, a human being who observes nature generally agrees that it is beautiful. But she or he is shocked because it doesn't seem to award any value to the endurance and the quality of life of individuals. On the contrary, in order to ensure the evolution of the whole toward more diversity and more adaptability, it

⁵¹ An experiment demonstrated, measured and continually replicated for almost a century. This "knowledge" photons (specks of light) have appears to be immediate and is explained by the quantic nature of light. Quantic objects follow probability waves that appear to precede them.

invented individual death. It seems to place its bets on the species and the large groups rather than on individuals.

Human beings realize that they would be more at ease in a world that respected individuals. They want to add finalities to the future: respect for individual life, the reduction of suffering, peace between the species, justice and who knows what else... It is as if they saw futures that don't seem to be included in nature's plan. Their will produces effects. It is on this account that we say that the human being is a moral being: he or she invents and introduces possibilities which widen the range of possible futures. I return to this: if the task of intelligence is the creation of results, the task of consciousness is the creation of finalities.

Is this enough? Is it possible for the universe to be a creator without striving toward creation, without "aspiring" to creation, without anything in its constitution leading it to overflow with creativity? It would be as if Bach had produced his music without any tendency toward beauty and that afterwards, on reflecting on what he had done, he discovered in his work a beauty he hadn't even wished for.

Admittedly, every creator well knows that the result is very different from the aspiration which motivated their creative action. They don't always easily recognize their aspirations in their work. Sometimes they are disappointed, sometimes they are impressed. This said, they know very well from their first actions that they were aspiring to something, to a beauty they couldn't name (whose form they didn't possess), but which worked on them. Their consciousness couldn't just be introspective, in aspiration, in value and in expectation it had a content.

If consciousness exists, it is what connects a beginning and an ending, a before perceived as a beginning and an after perceived as an end (in fact a multitude of ends which open up). Consciousness cuts time into units it can envelop, take a second look at, and evaluate as a finality it recognizes or doesn't recognize. Just as it forms "totalities" in space, it forms "totalities" in time (units of history), the two being indissociable.

For there to be consciousness between a moment A and a moment B, it is necessary for the moment B to be recognized as the moment A more or less transformed, and never the reverse, for as opposed to space, what connects the points of time is not reversible. In space, points refer to each other with equivalent status; in time, moments refer to each other in a direction: B was not totally in A. Admittedly, memory can recognize afterwards that B was in A as a tree is in the seed, but despite the genetic resemblance, it is B that is A transformed and not the reverse. Time is irreversible.

Some, like Plato and many others, thought that B was only a development of A. That at bottom, between A and B there was no true difference, there was no degradation of information, there was no increase in complexity, the tree was totally in the seed. Because of this, time wasn't different from space, B was reflected in A as much as A in B. As in space, there was reversibility between the

two. In the passage from A to B, there was plenty of memory, but no intelligence, no creativity in the process itself.

No artist can believe this. For how many efforts does it take, how many attempts, errors, rough drafts, dissatisfactions to arrive at a work which, moreover, is never simply satisfactory, on the contrary: either it disappoints us or we find it marvelous, generally both of these. To be sure, moments of grace do sometimes arrive where everything follows naturally without any special deployment of energy. But in the majority of lived experiences, there is an excess of energy in relation to the work produced (increase in complexity). This is also what happens in the story of life: a lot of energy for a small innovation (but sometimes too, a little energy for a complete leap in the scale of complexity).

For there to be consciousness, it is not enough that B ensue from A, that B be attached to A, it is necessary that, despite the preservation of identity in the transformation, B not simply be A without loss or addition of information, it is necessary that B include a certain surprise, a certain inventiveness in the activation of being.

But this is not sufficient to verify the idea of a "tendency" toward something which can afterwards be specified as an intention. But is there an intention even in us? Isn't there rather the perception of a network of finalities and the tendency to take new roads? It is even, perhaps, simply a matter of keeping futures open, of multiplying them! Consciousness is not guided by an intention perhaps, but by a call to creation, and thus to a widening of the possible.

However, we can compress the future also, we can shrink it or try to close it in many ways:

-- through redundancy (infinite replication). In this case, there would be no broadening, no breaking out of the pack. Time would be locked in a loop. There would be no going beyond. This would be incompatible with consciousness, for consciousness would die of boredom, would annihilate itself so as not to put up with the loop (even if this loop were a masterpiece);

-- through reaching a goal. Once the goal is achieved, it's the end, the repetition of the same, and in the monotony consciousness would kill itself;

-- through programming. Time would only be the execution of a program. Without the addition of intelligence and values, we would find ourselves in eternal cycles. There too, consciousness could not survive;

-- through transformations that would change nothing in the degree of satisfaction of animal and human consciousnesses. We would have a universe endlessly transformed, but which would in no way correspond to the aspirations of the consciousnesses it has itself developed;

-- through transformations able to totally satisfy the consciousnesses emerging in the cosmos. For, and such is the paradox of consciousness, once satisfied, consciousness would disappear.

The possibility of a continuous opening implies, not a single finality, but the development of a network of finalities which are opened as the universe evolves. It seems that this structured in the cosmos. People will say to me that infinite opening is an impossibility... I don't think so. You would need an infinity of modalities to exhaust the absolute - which is the non-existence of nothingness. We'll come back to this soon. It is characteristic of consciousness to open up finalities. Beauty, for example, opens in always new regions, contributing values without ever being able to exhaust all its possibilities. Beauty is infinitely renewed as much in differentiation as in wideness and in depth.

And if a consciousness can reflect and participate in the renewal of finalities, it is because time is such that this is possible. Perhaps it is something other than a consciousness tending toward a cosmos suitable for the exercise of introspective consciousness, yet this cannot be "nothing", and perhaps no more appropriate word exists for characterizing what we are talking about here than the word "conscience" (as long as we recall that it is our consciousness that is a by-product of the cosmos and not the opposite, and that consequently it is human consciousness that ensues from a primordial consciousness).

This opening of time, which corresponds to the fact that the end cannot be the reproduction of the beginning, is nothing other than the impossibility of an identity founded on the persistence of a defined form. Without the movement of the parts, the whole cannot be; it is necessary for it. The two are linked together because the identity of the whole is not a form and yet recognizes itself in transformations. In a story, whatever its scale may be, the end cannot be the beginning, and yet it is the story of a whole, of a unity. The mystery comes from the fact that a form never covers being since being is the creative source of form.

In short, time necessitates a continuous substrate which cannot in fact be either space, or ether, or anything whatsoever if not a memory that is very distinctive since it transports a knowledge of identity, a capacity for totalizing which maintains the coherence of the cosmos across its transformations. Time forever remains both creative and destructive; in order to survive, creativity must nevertheless prevail over destruction by a short length at least. For creativity to prevail, time must constantly open, broaden, give rise to new terrains that consciousness will later reflect upon in terms of finalities and values.

CHAPTER 8 : The physics of consciousness

In the reality of our great universe, there is only physics. It is made up of all the visible and invisible known and unknown waves of energy-information. If we were ever to succeed in entering into contact, in whatever manner it may be, with beings formed solely of photons, beings of pure light (and thus without weight), able to be at one and the same time in the Milky Way, in Andromeda and in the most distant quasars (interlinked photons), they would still be physical beings in the most modern sense of the term, that is to say in the sense most absolutely inclusive of all reality. We agree on this point. "Physical" means real and real means physical (in reality *phusikos* means natural).

There is no place for a second reality since the first is by very definition totally inclusive. What is more, if there were a second reality radically different from that of physics, it wouldn't concern us, it would have no influence on physics, it would be, for physics, non-existent. In fact, let's imagine a reality A and beside it a reality B, there must be one of two things: either there is a reality C which joins them, for example space-time or energy-information, or more subtle still, the mathematics of their relations. In this case, it is this reality C that is the true physics, the base, the quintessence of physics. It is certainly possible that the foundation of physics is a form of mathematics which corresponds to an infinitely subtle intelligence. This would still be physics, nature in other words. Or else there is no reality C joining A and B. In this case, for A there is only A and for B there is only B. No passage or any relation is possible since these two realities don't meet.

Moreover, this second possibility, the existence of two realities absolutely different in nature with no connection between the two is quite simply not thinkable, for it supposes the existence of a delimitation of B by nothing (nothing connects them), thus by something that doesn't exist, nothingness, in other words. This is why all radical dualism isn't thinkable, for nothingness isn't thinkable. The existence of nothingness is a contradiction in itself.

Thus there is only one fundamental reality and the twentieth century decided to call it "physics" and this even if this "physics" includes phenomena attributed in bygone days to angels and spirits such as the possibility of being at two places at the same time, even if it includes laws and constants absolutely everywhere at the same time, even if it includes information, a tendency toward complexity, an impressive coherence, mathematical relations, etc., no matter, it's physics since it's natural, that is to say directly or indirectly observable. We agree.

Our intelligence which thinks this universe is also physics; it is indissociable from energy as all information is indissociable from energy. It is not because we are free that it is no longer physics, since physics includes unpredictable, probabilistic, random and even singular phenomena. We agree on that.

This acknowledgment raises, however, a truly intriguing question: how can our thought think physics? More precisely, if thought wanted to know its ability to invent a reality (it doesn't much matter which one provided that it can really exist at least as a possibility) how could it manage to do this? How would it know that it had succeeded? Let's suppose that this thought instructs itself to be the most coherent possible, would it succeed in inventing a viable reality and would this reality be like physics? Is a simulation possible? Let's imagine that it reaches a conclusive result; we might almost conclude: physics equals the thinkable, is nothing other than the thinkable. What cannot exist in complete intellectual coherence cannot exist physically either.

Metaphysics, the search for the foundations of physics, is nothing other than this search: can thought, when it wants to remain coherent, end up at anything else than this "physics" that is right there before our eyes? Formulated in an almost religious manner: if we were creating universes, could we make a coherent world substantially different from the one in which we live? This search called "metaphysical" is crucial, because if physics and the thinkable are inseparable, we are able to think the meaning of the universe, understand it, feel it as if it were "our" work. And for an ordinary conscious human being, this makes all the difference between life and death. Such is the adventure of metaphysics.

CHAPTER 9 : The foundation

One of the primary characteristics of the thinkable is that neither absolute being (traditionally called God) nor absolute non-being (nothingness) can be thought. The former is too much, the latter not enough. If thought can't think the absolute, it can't avoid its horizon.

The absolute is always on the horizon. The horizon of the thinkable is always there, in the landscape of thought. For example, the form of a tree in the imagination stands out in something that surrounds it. Let's imagine that the tree is drawn on a piece of cardboard. Then what is the cardboard resting on? Let's imagine that the cardboard is resting on a table, the table in a house, the house on a planet, the planet, in a galaxy, the galaxy, in a galactic cluster, the galactic cluster in space-time, the space-time in the total of all possible mathematical objects, the possible mathematical objects in coherent thought, coherent thought in... On the horizon, there is always and inevitably an absolute enveloping never intellectually thinkable, but never totally absent from thought. Only the absolute of being can include everything without being included in thought, without being an object for thought. For its part, absolute nothingness is an absolute of exclusion that excludes itself.

In order to include, the absolute must be able to include everything; if it includes paper, it must possess a nature that allows it to become paper. It must be able to

take the physicochemical form of paper. If it can contain mathematical objects, it must be able to become a mathematical object (for example a number). It's a little like space-time, if space-time contains everything, it is because space-time can take the form of energy-information and energy-information can take the form of an atom and the atom can take the form of a molecule, etc.. In short, the absolute at the horizon of thought, the absolute not thinkable in itself, but which remains an indispensable horizon must have a nature that can become everything that can exist. It is a substrate.

Why is this substrate necessarily absolute? The reason is simple; nothingness quite simply cannot be. Its characteristic is to not exist. If nothingness had preceded being, if nothingness surrounded being or if nothingness followed being, being would only be a point in infinite nothingness, a point which would dissolve into nothingness. In fact, in order for something to be in something, this thing must be of the same "substance" as what it is in. For example, all that is in space-time is necessarily of space-time. Energy-information is necessarily space-time constructed in some way into a wave-particle (though this might be the opposite; energy-information may be widened in space-time). Now if being were surrounded, preceded or followed by nothingness, if nothingness were the horizon and the substrate, all it contained would have the nature of nothingness, in other words the nature of non-being.

There precisely is the route where thought can't venture without losing its coherence. If nothingness is, nothing is. It can easily be seen, the essence of nothingness is to not be; the essence of nothingness is to not be thinkable. Nothingness cannot endure having being beside it or in it, for radical dualism is impossible. Nothingness is an absolute that is not.

Conversely, being is an absolute (a one without limit). Absolute being is not thinkable in itself, but it can be what thinks, it can be the absolute inclusive substrate of everything. As there is no nothingness, the horizon of all thought in action is the inclusive absolute which has no real opposite. Its opposite, nothingness, has the misfortune of not being able to exist either in the real or in the thinkable. In short, if we take away nothingness, we find ourselves with the absolute, in other words something inclusive containing all the thinkable, the substrate and horizon of the thinkable.

However, if we imagine the absolute as a substance without rifts, without emptiness, if we imagine it as a compact thing which contains nothing but the plenitude of its own substance, as would for example be a space-time absolutely full of all that it could theoretically be, full of a perfectly compact material; there would be to such a degree nothing else in reality that such a substance would be totally static, so static that there would be nothing dynamic in its physics, thus no physics at all, and there would be no nuances in its content, thus no thought possible in regard to it. Such an idea of absolute being (the absolute of fullness) doesn't hold up, it is not achievable or even imaginable, it contradicts itself. In the same sense, a cosmos absolutely full of energy-information, compact, is in contradiction with itself, since energy-information precisely is an exchange. In an

absolute plenitude, nothing can budge, pass through, be transformed, be informed, change form...

Here some will accuse me of returning to the philosophies of the Middle Ages. I am flattered by this. All the more so since I have adapted to contemporary physics (with the help of a great number of contemporary or near contemporary philosophers like Broch or Lavelle), the best of the philosophy of the end of the Middle Ages.

CHAPTER 10 : One, three, seven

Nothingness is too empty, plenitude too full, and yet there is surely something that can hold up in the thinkable and in the possible. How can a horizon-substrate, absolute in principle, not be a plenitude (in the sense of compact substance) and at the same time not contain nothingness? There is a way: become a potentiality through polarization. What does that mean?

Suppose that we place on one side an ability to act and on the other an ability to react; we will then have avoided nothingness *and* plenitude. Somewhere there might be active creative source without limits (since it can't contain nothingness). Aristotle named it "Agent Intellect", Lao Tse made of it the "yang" principle (and there are many other names according to the traditions). Moreover, there might be a receiver allowing itself to take the form determined by the active principle. Aristotle named it "Reactive Intellect", and Lao Tse made it the "yin" principle. In short, we may have, on one side, something that might resemble an acting force and, on the other, and, on the other, a reacting reality.

Obviously, neither of these two poles is realizable or thinkable in an isolated manner. Were the creative absolute isolated, it would not be able to act. Were the reactive absolute isolated, it would not be able to react. We must not imagine, for example, to the right, the reactive, to the left, the active and between the two a relation, for we would then fall into dualism (the idea of two realities completely different in nature). We have seen that this is not thinkable. No, we must think that every element in this thinkable universe is at the same time active through one aspect and reactive through another aspect. For example, seen from one side, it is something that acts in giving a form (of energy-information); seen from another side, it is something that reacts to this informative action. For example, an atom, or no matter what unit of reality is informer and informed. Everything in this cosmos sends energy-information and receives energy-information even as, in its being, it is energy-information. It is very hard to imagine another solution. All the great traditions arrived at these two principles: the active and the reactive in a single substrate.

If nothingness is not, then being is without nothingness, and thus is absolute. It can't be anything other than absolute and yet, if it is absolute, it cannot be dynamic (therefore thinkable) without being polarized into active and reactive principles. However, these two poles cannot be separated; they are the two faces of the same reality. Through this polarization, the absolute horizon and substrate holds itself together so as to move itself by the impulse of its own action and its own reaction. Seen as a whole, it is something that transforms itself, in itself, by itself.

Active principle, reactive principle and relational foundation --- this trilogy has been named potential trinity by the metaphysicians. This potential trinity is source of all the dynamisms. It has as its base active energy-information, in light, for example, and reactive, in the electron, for example. If we had thought reality simply, we would have had to end up with something like action, reaction and relation. This might have looked different from the cosmos we are in, but we would have been forced to think of something like energy-information capable of being active on some sides and reactive on others. We would have been compelled to place this two-sided energy-information in a relational interface similar to space-time, that is to say in an interface which reacts to its own energy-information.

We must go further, however. This trinity is not sufficient, for by itself it would be dangerously redundant. In polarizing the active and the reactive in each creative element, we have the minimum required for releasing a theoretical absolute from its stasis. However, as soon as the system is set loose, it will empty out its energy; the active will exhaust the reactive in an instant. To get out of this, we must not only polarize the active and the reactive, we must also make sure that, as soon as these two poles attempt to unite, they will create a diversification that will have no limit.

A moment that closes on itself, a moment in which the end meets the beginning, such a moment, whether it is very long or very short, does not pass the test of the absence of nothingness. Therefore it cannot exist. In order to exist, time must be a breaking out of futures such that the futures can never fall back into the beginning. Time is open or it doesn't exist.

Moreover, without our being able to do otherwise, by polarizing the active and the reactive we have done something else, we have emptied the absolute (horizon and substrate) of all its "actuality". It is impossible to polarize any other way. Imagine that you have an ocean which has no limit above or below, to the left or to the right, in front or in back, and you want the active to be able to act on the reactive. You will certainly have to separate these two poles in one way or another, but you will also have to empty the ocean of its contents, for if not, there is no place, no emptiness (not to be confused with nothingness) for any dynamism whatsoever.

But how to empty the absolute without introducing the notion of nothingness? Aristotle like Lao Tse found no better solution than the "de-actualization" of the absolute. It is surely necessary to act in such a way that the active is not already thrown upon the reactive; in short, we have to introduce time. It is necessary to

move their union away to the most distant future possible, even infinitely distant. For this, it was necessary, without our knowing it, to remove actuality and let potentiality alone fall into reality. Thus the two poles truly form two dynamic poles. The two poles, wanting to recreate actuality, will act on each other, taking all their time, even infinite time.

We have seen, moreover, that the two poles cannot simply be isolated in two distinct reservoirs, the active at the extreme limit of the horizon, the reactive at the other extreme, for, between the two we would have nothingness, and this is impossible. Thus the only solution is to imagine that everywhere in the void of actuality a nearly symmetrical polarization is formed. In short, we have some kind of space-time coming from an emptying of actuality which makes it a potentiality and in this potentiality, at each real point, at each possible "referential", there is a polarization of the active and the reactive (a potential energy, in short). This is necessarily symmetrical, but must not be absolutely symmetrical, for if not, everything would fall back into everything in an instant, and the cosmos would suddenly run down, would actualize itself without enduring.

"De-actualization" has emptied the absolute of its actuality. This actuality is in the infinitely distant future, and it is also in the potentiality of each now. Space (*space*) which means moment, duration, is surely the void of actuality inasmuch as this void is a potential charge in every point of this cosmos. But what do we do for there to be more (and much more) than a single potential point, what do we do so that polarization will seek to be discharged in a limitless number of points? For if not, the cosmos could not endure since time would close in on itself in a monotonous return on itself, with no creativity.

It is here that the notion of creativity takes all its meaning. Until now, the active-reactive polarization, which necessarily required actual-potential polarization, didn't let us glimpse multiplicities other than two positions able to be closed at the first instant of the cosmos (energy, but not information). The only way to escape this is the notion of "form". There also, Aristotle and Lao Tse weren't able to find other solutions. We are forced to imagine something like an infinity of forms. We must invent another dimension in the field of polarization: the polarization form-formlessness.

The active will have to not just act on the reactive, it will have to act by giving it a form, that is to say a way that is different from another way. Movements will have to be differentiated. Differentiated not only in space, but also in time.

Form cannot be thought in space alone since it necessarily has to evolve and move. Consequently it is also an organization of time, it is a movement of space-time on itself, a movement created by energy-information and creating energy-information. In this way, when the potential begins to tend toward the actual by throwing the active on the reactive at all possible points of all possible moments, form will be differentiated and we will find an infinity of details that will distinguish every point of the real (for if not, there would not be several points, but only one).

Information is that quality of energy resulting from the active-reactive and potential-actual polarization which makes possible a limitless diversification of all the movements that will result from the tension of space toward its future. It wasn't possible to do otherwise, for if not, the energetic polarization (active-reactive, potential-actual) would only last an instant, and everything would return to the undifferentiated absolute in an instant. The form-formlessness polarization had to be invented.

This triple polarization (three multiplied by two, plus the unity of the whole, makes seven) necessary for all physical or mental dynamics (active-reactive, potential-actual, formlessness-form) constitutes the minimum of polarization for the absolute (the absence of nothingness) to be able to escape its sentence to stasis in order to come to life (life = tension toward the future, thus actualization of time in eternity, eternity since nothingness doesn't exist).

CHAPTER 11 : Cosmogony of consciousness

Without intending to, we have, by this triple polarization, thought of another thing we need to speak about now. To produce potentiality, we had to move the actualized forms, the finished world, into an infinitely distant future (we invented time). We then imagined an infinitely distant future where everything is finished (through forms, but without ever being able to stop at one form or at a set of forms), but as for the cosmos, it remains potential, a potential that is being infinitely actualized. This is necessary in order to free being, in order to allow being to become all that it can be dynamically. This has led us to think of a kind of reservoir of all the possibles, a reservoir available since the "origin", but always removed farther away, dwelling behind the horizon of time. We now have to come to terms with some kind of reservoir of all the realized possible forms. If we don't do that, we dive straight down into a real feat of magic: by enchantment, the cosmos will develop differentiated forms, they will come out of nothing, from something undetermined which will have to miraculously create something determined! This would be like asserting that everything will come out of a magic box. This is not thinkable, the non-thinkable is just what this magic box is. Now our project is to think in order to come up with something real, possible, and coherent. We are forced, therefore, to imagine a world of organized energy, a world of energy-information, and a world of possible forms relegated to the other side of reality. How do we get to that?

The problem is the following: what is to be done so that the idea of information isn't arbitrary? Obviously, the principle we are seeking will become a set of coherent laws, a set of precise constants, a structure of the real able to evolve etc., all that is necessary for science to be possible and for the cosmos to be possible. However, this must not come out of a black box, from a simple prohibition of thinking; our objective here is to make everything come out of thought (except for the act of thinking itself).

It wasn't possible for either Aristotle or Lao Tse to escape the notion of intelligence (a universal *noûs*, a cosmic *logos*, an unnameable Tao, but creator of forms, a "reservoir" of all possible forms, so active that it merges with a creative source). This is why, from the beginning, Aristotle speaks to us of agent intellect and reactive intellect while Lao Tse moves potential and actual information into the Tao without form and creator of forms. In short, either information is completely magic (coming out of nowhere), or else it requires an "intelligence" (even though it may be supra-personal).

What is an intelligence? It is a polarization of form and formlessness, it is a creator of forms, it is a place where the formless takes form thanks to the very structure of the thinkable (logic and mathematics) and thanks to learning by trial and error (return to memory). To create forms, it is necessary at the same time to be formless - for if we already had all forms set in advance, we would just be reproducing these established forms (like Plato's demiurge), then we would simply be memory and not intelligence and we would banish, without resolving them, the contradictions concerning the absolute - and create forms starting from the actual principles of the thinkable.

A potential of forms, an intelligence, cannot be thought of as a potential of energy. In the case of energy, it is sufficient to polarize the active and the reactive, the actual and the potential; in the case of information, we can't simply imagine a reservoir of predefined forms, a kind of memory that would already contain all that the cosmos can be. This would only move the problem somewhere else, for we would have to think this memory, it would be like a cosmos before the cosmos and it would have to be explained. We may just as well face up to the problem now, how is it possible that information is potential in all these exchanges of energy?

Imagine a limitless creator of forms (to remove nothingness is to remove limits). Such a creator of forms could do nothing but reproduce itself, for why would it limit itself? But if it reproduces itself without limitation, the result is so much itself that this gets us no further ahead; this poor creator is condemned to itself. We have to free it from itself.

To do this, we have to imagine that even its identity as a creator, its necessarily unlimited identity is not accessible to it. If Bach had known perfectly who he was, if he had known himself without any limitation, he couldn't have created his work, for he would have created himself, and he would have closed his work with a definite end (himself). But the "ignorance" inherent in his creativity allowed him to create a work other than himself, yet a reflection of himself nonetheless. The "ignorance" inherent in his creativity catapulted him outside all defined forms, made him potential creator of an infinity of musical forms.

We have no choice but to imagine this sort of "ignorance" of self. It is part of the creator's essence not to know his identity absolutely, for then it would take the infinite out of infinity and this would get us nowhere. It recognizes its identity in its work and through its transformations, but it cannot recognize it absolutely to the point of giving it a name. If it were only memory, it would contain itself or

simply refuse to know itself. This would be a strategic ignorance, an act of suspension of self, like a mother who refrains from doing something herself so as to prevent her child from being engulfed in her and made unable to develop its own personality. A restrained memory is not an intelligence.

To solve our problem, we must conceive of ignorance at a much deeper level. Identity cannot be confused with knowledge of self, it cannot be an identification with a content, for then plenitude falls back on itself and time is only the delay of this plenitude. We must admit that identity rests on a fundamental and existential asymmetry between the potential and the actualized. The actualized is never the potential. The actualized surprises. The reservoir of potentials is not the reservoir of actuals. The actual adds to the potential; actualization is not a transcription.

If creative intelligence is something, it is this fact: in the tension of potential and actual, there is a turbulence, a turmoil, a refusal of the self to be confined in a fixed form.

In this reservoir of reality, a structural turbulence exists, a dynamic chaos inherent in self-differentiation; if not, there is no thinkable logic, for logic would preexist itself, it would not be able to judge itself as logic, it would say: I am logic because I am logic. We would be in a pure tautology.

This fundamental turbulence of the basic informational source (and therefore of the creative source), was called in Greek tradition "kenosis", an internal break characteristic of all creators.

There is, then, in secret, in the mystery of the creator, of all the creators, an idea of self, a vision of one's own infinity where the creator sees him or herself grounded in creativity by a necessity: creative turbulence, the founding maelstrom. Starting from this, transformation in self, of self, by self results from an intelligence as much as from a memory.

Kenosis is nothing other than an asymmetry necessary for a creator's identity in order to escape the paradox of absolute stasis. In short, all memory includes a foundation of creative intelligence, if not, it falls back into the absolute. The Judeo-Christian tradition has named this trinity, existential Trinity: memory (the Father), intellect (the Son, the Father's concept of self, memory-intelligence relationship (the Spirit, *spiration*, the creative turbulence produced by *kenosis*, ignorance of self).

This trinity of memory, intellect and creation is necessarily unified in a perception of self that cannot fall back on itself, and this unifying power has always been named consciousness. Consciousness is the clear perception that thought is fundamentally creative and not fundamentally reproductive, and that because of this, creation always prevails over knowledge.

The creator knows that what she or he will create will surpass what she or he can know, that the music that will come out of her or him will never be absolutely knowable, such is the fundamental state of consciousness. A cosmos that can be thought is a cosmos that never closes into knowledge.

CHAPTER 12 : Synthesis

If we went back over what we have said, we would be surprised: nature isn't incomprehensible! Contrary to all expectation, cosmology has become the legitimate science of everything. The cosmos is not "ab-surd". The line was extremely thin, however. For our life to have a meaning, the cosmos had to be neither absolutely sensible nor absolutely insane. We had to be able to participate not only in its unfolding (like a worker), but also be able to think it, be able to modify it, be able to come to terms with it (like a creator) without ever being able to get to the end of it. And this is surely what has happened, and it works. Tragically, yes! Tragically. But it works. We will soon have to tackle the problem of evil.

A general look inside current scientific cosmology allows us to believe that:

- space-time is not a substance (like an ether, for example), but is defined by the constant speed of information transported by electromagnetic waves and gravitational waves;

- time is not separable from space. It is even its condition. And time forces us to grasp the presence of a substrate of memory-intelligence-consciousness (reproduction of self in eternal transformation where identity is pursued yet at the same time never identifiable with a form);

- time informs us of interactions, exchanges of energy-information. It composes the history of its interactions thanks to its intelligent and conscious memory ("con-science" of self, but not absolutely "science" of self);

- energy-information is the basic unit of physics. Reality is neither a wave nor a particle, it is at the same time a wave *and* grouped in "packets" of energy-information that are localized *and* non-localized according to rules of probability. Nothing of what classical thought called "matter" is found in modern physics;

- by the limited speed of light, the past becomes the only perceptible reality while the present defines the future. The memory of light is nearly perfect. For each point of view distributed in the cosmos (referential), the cosmos is never pure space (simultaneity), it is always space bewitched by time. Space-time is convergent for each receiver and divergent (radiating) for each transmitter;

-- gravity brings about accelerated movements while waves transport information at constant speed. Equilibrium in the very long term is therefore very improbable and yet the cosmos may be eternal and at the same time shot through with always open stories of expansion, transformation and communication. Metaphysically, this is not surprising, for otherwise it would have to confront the paradox of the existence of nothingness, that is to say the existence of an absolute beginning and an absolute end;

-- quantum physics shows us that futures are inscribed in the probabilistic nature of reality;

-- time is rhythm, history, creation and destruction;

-- a system constrained to go out of equilibrium by the dissipation of a continuously renewed energy spontaneously organizes itself. It becomes very sensitive to the contradictions due to other constraints and this renders it sensitive to itself. Causality becomes reciprocal and the system's activity gives a meaning and a direction to the collective movement. The system is no longer defined by the limit conditions, it stops being indifferent to historic time and enters into a story of creation which obviously contains a dimension of destruction. These processes of self-organization are not random events, they are, on the contrary, inscribed in reality's laws;

-- Life is recognized by individuation, nutrition, respiration-fermentation, reproduction and evolution. For other biological beings, sexuality and death are added as well as cerebralization, the ability to learn individually and collectively by the passage into consciousness. Each of these inventions is an exploit calling upon extraordinary electrical and chemical mechanisms.

The cosmos is organized as a single dynamic reality. We are not in a dualistic world.

Science is possible to the degree that reality is at least partially thinkable. Becoming aware that what happens in our minds corresponds to what happens in the cosmos is a beginning. But to grasp that what happens in the cosmos is reflected in our minds makes it possible for consciousness to think about nature, enter into participation with it, and take responsibility. We can include our plans in the fate of the world and learn the consequences.

When we attempt to create a thinkable cosmos instead of seeking to know reality, we arrive at a certain structure which helps us understand reality. The triple polarization necessary for every dynamic, be it physical or mental (active-reactive, potential-actual, form-formless) constitutes the minimum of polarization for the absolute (absence of nothingness) to escape stasis and take on life (life = tension toward the future, thus actualization of time in eternity, eternity since nothingness doesn't exist).

What is an intelligence? It is a creator of forms, a transformer. But consciousness remains a necessity since it makes it possible to preserve identity across transformations without allowing it to be "frozen" in a form.

A fundamental asymmetry appears in time. The end is not present in the beginning as form, but as identity, an identity necessarily creative in its essence, in other words never "closable" in a form, since it is what transforms.

In short, creative memory (intelligent memory) is necessarily unified in a self-perception that cannot fall back on itself, and this unifying power has from time untold been named consciousness. Consciousness is the clear perception that thought is fundamentally creative and not fundamentally reproductive, and consequently that creation always prevails over knowledge.

For creativity to prevail, time must constantly open, widen, give rise to new fields which consciousness will then reflect upon in terms of finalities and values. Human consciousness reflects because cosmic consciousness has preceded it. Consciousness recognizes itself in reality, but it recognizes itself in order to complete itself, assume a role, promote an ethic, open finalities.

FOURTH PART : Evil, death and presence

We have visited the habitat of consciousness, its conditions, its structure. In the human being, consciousness gives being value. In the cosmos, it participates in intelligence and opens finalities as if preventing the cosmos from being directed toward a goal. The cosmos is our creative womb, our house. We are born of it, but without going out of it, an intra-uterine birth! We want this world to be better, with more sense and less suffering. It resists us, yet it responds to us. The link between habitat and inhabitant is "eco-logy". But we and the house are not two realities different in nature; we form a single reality.

In this part, we will go by circular movements into the deepening of our connection with the all, since this is exactly what consciousness is: to embrace everything in one single light.

The first obstacle is the scandal of evil, for suffering and death shock us to the point of no longer being able to love our so immense house. Alas! This revolt against nature only aggravates our situation. We will try to grasp evil by its "logical" roots rather than by a moral perception.

Next we will pursue our odyssey on the beaches where the inner sea comes to meet the outer sea that is always rising and striking the coasts of our resistance. But why resist it? For it certainly will conquer, it will carry us away, yet it will not want to dissolve us, since it has made us for life, and not for death.

CHAPTER 1 : *La strada*

La strada is a film by Federico Fellini produced in 1954. Here's the story. Somewhere in Italy, there where the sea and the sun strike the beaches, a slightly simpleminded girl is, in an act of poverty and destitution, entrusted to a wandering circus performer whose one number consists of breaking a metal chain attached to his thorax by puffing up his lungs. He is a man with lungs of iron. The girl gets on his three-wheeled cycle and they go from village to village for a pathetic performance where trumpet and drum accompany the only feat the acrobat is capable of. The man is named Zampano and he is as harsh as the misfortune that forged him. Brutish, he treats the girl like his pet animal. It might be said that they were a coyote and a lamb united in the same fate.

One day, the girl meets a clown, a tightrope walker who does his stunts at very great heights, a light and slender man who dances on life so as not to fall into his inner sea. His strategy is perfect. He transforms the mills of his life into music, laughter, and provocations. By a mysterious light, his words break up the black night's fears and worries. This is because he is convinced of the usefulness of the girl and of the smallest blade of grass: "But look, if Zampano keeps you with him, it's because you must be of some use to him. [...] Maybe you won't believe it, but in the universe everything serves some purpose. Even you. Look, take this little stone, for example... I don't know what purpose it serves, but it surely serves some purpose. Because if it served no purpose, the stars wouldn't either⁵²." Every thing in its place participates in the great rolling of the cosmos, and this is what happiness is, to feel that if we weren't there, at this precise spot in the movement of the spheres, all of the celestial machine would break down into its original chaos.

The clown talks and talks, but he loves the girl and finally offers her another life as he hands her the pebble. She takes the little stone at its words. From now on she knows her own destiny. She goes off again with the man with the iron lungs.

The wretched man is swollen with envy and jealousy of the clown, and an anger that is nothing less than that of a big cosmos that didn't want to be what it is, but another one, a world less hard, less rapacious, less unjust, less cruel: a world that would know how to talk rather than roar. But he is this hostile cosmos on which thousands of furious suns and rocky planets wander. He is the rockpile of a life of battles against the elements that forged him. How could he get to something else?

ONE night they stop at a convent. A lighthearted sister offers the girl a place in the monastery where everything is in divine order: to sing, to dance, to grow vegetables in the garden, to live in gratitude, sheltered from hard things... She doesn't say a word, and once again mounts the tricycle of her destiny. They go off once more in their chariot of fire. Life closes over them, compresses them against each other, shakes them like water and rock in a fishermen's cove. Unable to communicate either with himself or with others, Zampano only shares his misery. Blind to all tenderness, he furiously pursues his struggle against the furies of his inner world.

And then, on a highway even more isolated than the others, he meets the tightrope walker, the happy clown who is repairing one of his car's inner tubes. Seized by rage, Zampano kills him. An accident of anger like the gale which, depending on how the gusts blow, sometimes casts a ship on a reef. A sudden and impersonal change of mood. This time, the girl is horrified. The wretch takes her away by force. They flee to the north, in the snow, in the cold and the phantom villages. She can no longer eat. And time, slowly and at length, does its work.

⁵² Excerpt from the film *La strada*, text by Tullio Pinelli; French adaptation by Bernard Rosselli.

The girl becomes like the silent lake at the foot of the furious volcano. And he sees his own face in the lake. He deposits his trumpet and some warm clothes at the feet of the sleeping girl. He cuts this connection. He abandons the image she sends him of his so black cosmic soul. He delivers her from him. After this he wanders alone, does his act again. His lungs weaken, life closes down on his chest. The chain tightens, the man exudes his anger. It is given back to him, blow for blow. One fine day, a calm spell arises. In the noonday sun, as he walks through some village, he buys a small ice cream cone and quickly eats it. Hazardous happiness.

The sky and the sea draw him to places he doesn't know. He hears a song as if it were coming out of heaven. No! It comes from the sea. The song is sung by a young mother hanging her laundry near the beach. He comes closer, for this unique tune was made up by his former life's companion. "Where did you get that song?" he asks the woman. -- "A girl was singing it," the mother answered. "A girl no one wanted. She died not very far from here."

The blow hit the target. Zampano wanders a little more. Night imposes its serenity. The sea beats the rhythm of the human heart. The man splashes salt water on his face. He returns to the beach. And he collapses in his suffering which he feels at last. He has entered humanity. The man has pity on the grains of sand sliding from his hand.

La strada is a masterpiece according to the following definition: after having been executed by a masterpiece, the person, resurrected, no longer wants to return to worlds other than the one there in front of him, since all his illusions have died. After having been this film's victims, we want the world that produced this masterpiece. We want the world in which *La strada* is a necessary work. For a masterpiece is a work that emerges from an "ontological" necessity. If it didn't appear somewhere at some time, the world couldn't live, it would disappear in its moral void. We wouldn't want a world that didn't have the characteristics needed to make *La strada* inevitable sooner or later. Besides, such a world wouldn't want itself and would annihilate itself. By dying of love, the world is saved from nothingness by the film. And if someone asked me what a "saint" is, I would say that she or he is a masterpiece that cannot be written or sung, a masterpiece that can only be lived. However it may be, one who has seen the film knows that this story is imperatively lived as much by persons as by peoples and, perhaps, by all the cosmos.

Then I think of the evenings when, with friends, we began to dream of a better world. We have all dreamed of a better world. We have all played God: "The world would be much better if there wasn't death. Injustice is ugly. If children can die of hunger, God doesn't exist, for if he did, he would be a monster. Wolves that eat lambs, I can't stand them..." And then we start to think up pink or blue worlds, trees with aromatic fruits in spongy paradises. To imagine is easy, for what we begin, we don't complete; we are satisfied with painting a vague picture that we immediately find boring. If a 200-page novel had to be made of it, it is not certain it would ever be completed.

And then we look at a masterpiece. Suddenly all we have set up collapses, insignificant. An ordinary work draws us into another world, an imagined world. This is fine. We have spent a few hours forgetting. Perhaps we have even dreamed of living there for a while. But this was before being rooted to the spot by a true work coming straight from the true world.

I have some very clever friends. Some excel at talking to me about God, their god. He is beautiful, he is nice, he is gentle, he is merciful. Others are better at criticizing their conception of God (imagining that they are criticizing God). Still others speak to me about the world they imagine they see, an insane world, a tormented world, a machine world. There are many who speak to me of the death they imagine, terrifying or magnificent, appalling or marvelous, a dive into nothingness or into nirvana. I sometimes feel as if I were with Saint-Exupéry's Little Prince, going here and there on different planets, each in the world he or she wishes, in the world she fears, in the world he covets. And I get taken up in the game.

And then a masterpiece arrives and all these pitiful and uninteresting worlds head out the door. One of us has plunged into the world that is there, into the world that makes souls like those that cross paths in *La strada*, and we wouldn't want other worlds. From now on they can tell us all kinds of mean things about the world, but none of it holds up, for we have seen *La strada*. We don't want to lose the brute, or the angel, or the clown, or the brutal facts, the clear awareness or the satirical wit, we don't want to lose any of these contradictions; we want to come from there, have been made by that; we want to be able to one day say, before a great cosmic council: "I come from the planet where Fellini lived." And to observe the jealous looks of all those who come from a supposedly better world.

Why don't we go outside also? Outside our sketches of the world, outside our barely begun inventions, outside our so-approximate gods and demons, outside our prejudices... Why don't we, like Fellini, go to meet the women and men of the street, the swarm of people who await us? Disarmed at last, to confront a winter or a summer sky, or simply the woman who lives upstairs, or the man who is laying down flooring downstairs. It's not about sacrificing our imagination, but on the contrary with planting it in the earth so that it can in the end grow to the height of mountains.

What I like about the scientific masterpiece of physics and chemistry, the work of humble seekers of facts, is that they dare to open their eyes to the only measurable opacity that comes into their hands: the manifest energy of phenomena. They touch in the night the mass of a space or the contour of a compressed moment. They describe. They try to experience the world that is there. Thus they surpass all the ordinary and famous artists who have us enter their absurd or happy worlds.

Is it possible that the planet Earth on which I attend to my activities has not succeeded in doing anything whatever with me? Perhaps I have rambled around it like a moon without ever landing. But it has made artists and saints, and one day I was seized by one of them.

What is happening here, in the great house of the stars, inside the Milky Way? What is this tormented energy making in the inky space surrounding me? It is pressing a thermonuclear juice out of stars, with which it waters billions and billions of planets laden with surprises. It deposits on them a dust of complex molecules. It keeps some pet planets at the right distance far from equilibrium. It pummels them, bombards them, irradiates them, magnetizes them... there there are born, by a chain of events it will take us millenia to discover, plants, animals, primates, bipeds, gatherers of plants, group hunters of mammoths, talkers, designers of dreams...

And then animals of a cerebral species succeed in becoming entangled in their own imagination. They are finally captured by their thoughts and from then on they live at the same time in two universes -- the one they think and the one they are destroying. The man with iron lungs is born. He fights against the windmills he imagines even as he wounds and breaks, without seeing them, those who inadvertently approach him. Nonetheless, this strange animal cannot not learn. Such is the only impossibility that concerns him: he cannot eternally refuse to learn. All his existence, he will struggle, fight, spit fire and ashes in the sole hope of escaping his destiny, of avoiding the only prohibition that is his. And he swells the pain, and he crushes his own feet, and he cuts his fingers, and he tears off his ears, and he puts out his eyes, and he stabs the one he loves... No matter, the more he delays the encounter, the more caught he is. Here he is, furious volcano sparkling in a terribly quiet lake, his inner sea. And he has pity on himself.

Rock closes the ground so that we can walk on the burning lava of our geologically active planets, the millennial movement of mountains shows us in what direction the tectonic plates are displaced, trees lift molecules to expose them to the bombardment of photons, herbivores eat the products of photosynthesis, carnivores crush the muscles of antelopes and the primate learns. We learn. Our history is scarcely beginning. We have met many tightrope walkers and we have killed them. But the young soul we drag along with us on our tricycle opens its mirror lake for us. We will see. We will see.

One day, we are going to collapse on the beach. One inevitable day, we are going to stop teleporting ourselves into heavens or hells, with the gods or the nothingness of the tormented worlds of our imagination, one day, we are going to confront ourselves on the beach. We will not escape love. For inside ourselves we are full of lakes. We are, each one of us, the volcano, the lake and the clown. We turn and turn in the circus, drums and trumpets blaring; unable to speak, we moan. We are three inseparable solitudes. It is impossible that in all the great school of the spheres, there will not one day be a true meeting on a frozen lake. Consciousness envelops all, for it has developed all.

CHAPTER 2 : The logic of contradictions

Sooner or later we will have to confront the chapters on evil, which, as everyone knows, are long chapters for humanity. May as well do it now. Let's take the time. Let's look at evil starting from a certain height, from a certain detachment, from certain questions. Why does the world always go so royally wrong? And above all, how is it that by fighting against it we manage to create so much unhappiness?

To succeed in this, we must first understand the dynamic of contradictions. Let's begin with an imaginary experiment⁵³. A drop of water in free fall is put in focus by a high-definition camera. Very beautiful shot. Let's return to the event. Light passed through it, reflected it, and it penetrated the camera lens. Photosensitive cells registered thousands of different signals and reproduced them on a high-definition color printer.

On the photo, the transparent environment is now expressed by thousands of perfectly opaque colors. Seen in a magnifying glass, innumerable nuances appear. Nothing is less transparent than these colored inks on photo paper. An ant walking over the photo would never be able to reach this astonishing conclusion: all these opaque colors, seen from the right distance, reflect the pure transparency of air and water... Are opacity and transparency opposites? Transparency is perceived only when frozen in an opacity, on a photo, as in the back of an eye. Light is grasped only when it is captured.

Let's return to the water drop in free fall. It seems to me that I can travel from my eye to the drop, then bounce back to the Sun. In plain sight I can take every direction in space. Transparency is that freedom. I reach the Sun's surface. I dive into the womb of flames toward the maximum of density. Billions and billions of atoms are compressed against each other, squashed by gravity. In the fury of the cramming and confinement, the atoms' private space is crushed, ground, crumbled. The nuclei are laid bare. An unbearable crowding reigns in the disorder. The nuclei fuse to form more complex systems. Hydrogen becomes helium (on the quantic scale, helium is already a very complex system). New, even more complex entities are created in the impenetrable shadows of the milieu and generate an enormous energy which will, with difficulty, rise back up from this compressed world. Nevertheless, this energy will clear a way toward the Sun's surface and pour out as heat in the waves of flames falling back into dark abysses. Photons will spurt out from everywhere and water the firmament in every direction. Each ray will then with meticulous care transport the information from its origin. A creative frenzy.

⁵³ This experiment was inspired by the writings of Jakob Boehme, imagining that Boehme was living today with the knowledge of light and fire that we now have. For it was in observing fire and light that he began his reflection on evil.

Contraction and dilation, division and synthesis, shadows and light, visible and invisible, heat (entropy) and complexity (negentropy), are they enemies? On the contrary, like the couple formed by the thumb and index finger, they build the world with the finesse of an infinity of nuances...

In reality, my gaze went nowhere. The light came to me. Photons, opaque, consistent, without the slightest transparency, came to strike molecules in my eye which were organized by life to receive them. They excited electrons. They produced an electric current which went back up the optic nerve. Parallel and differentiated waves came to produce chemical and electrical reactions in my brain. My brain interpreted this recomposition as transparency. Illusion and truth, two opposites or two complementarities?

Everywhere we go, it is impossible to escape the logic of contradictions. So in what abyss does the bottom lie in which all opposites are born and organize the world? We must approach this mystery, for it is the source perhaps of a first level of turbulence which can be judged by us as "evil".

At the bottom of all these creative sources, no matter which ones, whether they are human, subhuman, or superhuman, there is a collision of opposites:

-- the *infinity* of the formless creative center and the finiteness of created forms. The center of my creation can only be an indeterminate that determines, a formlessness that forms, a potentiality and an activity infinite in principle, while its productions are necessarily limited by their forms. In the traditions, the creative center is often called "source". No source escapes the first constraint coming from an inevitable contradiction: the infinite-indeterminate-determining and the finite, determinate, evolving form;

-- the *identity* of the creator and the *otherness* of creation. No creation can exactly be the original creator, for otherwise the result would itself be the cause and the creative explosion would not be able to enter time. The creative identity is secret; the Persian sufis compare it to a curl of hair with an unattainable center (Meister Eckhart also used this comparison). The Greeks called this original form of the "learned ignorance of self", *kenosis*;

-- the *eternity* necessary for the source and the time constraining creation. If the source were not eternal, what would precede it, what would succeed it? It couldn't be nothingness, so it could only be itself. However, all that it does begins and ends, all that it does is enclosed in a greater story, a destiny, a series of mutations, for if not, there would not be any works.

Infinite-finite, prohibition of identity, temporal eternity, three great contradictions that create many others. And if these contradictions are operative and determining, it is because they are bubbling in a bottom of bottoms that cannot be cracked. They come from a source of contradiction somewhat unimaginatively named unity.

This calls for a "logic of being": unity, infinity, identity, eternity are of prime importance, but they are forced to fight themselves, they are forced to fight their unity, their infinity, their identity and their eternity in order to tear themselves away from stasis and live as a creative source. There are not two opposites, there is one source reality which represses its absolute character out of necessity. Why? What is the power behind all this?

Being and nothingness are not opposites of the same order as the infinite and the finite. They are the only absolutely incompatible opposites. They are incompatible and because of this all dulling, all deadening, every tendency to rest on a static base brings us nearer to nothingness. The nothingness of transformation (absolute immobility) is a kind of nothingness, and it is as incapable of reality as the other kinds of nothingness. The absolute zero of temperature, absolute cold, is an impossibility, that is to say that if something loses absolutely all movement, that thing no longer exists, it is annihilated (warning to all those who might want to set down once and for all the "truth" of their god, of their non-god, of their law, or of their discovery).

The deepest ground of logic is as follows: all opposites are relative and dynamic as the thumb and index finger are dynamic because of the unity of the hand; being and nothingness, however, are absolutely incompatible absolutes. The first is, the other is not. Since nothingness cannot exist, then being is necessarily unlimited in every direction, even that of complexity. A limit necessarily requires nothingness.

But conversely, if the absolute of being were so full, so complete, so perfect that it would not fight itself, it would join nothingness through absence of internal turbulence, through absence of creative turmoil. This is what leads us to glimpse in the absolute depths a mad exuberance, a laugh that shouts, a primordial *gout de vivre* forcing every creator to fight him or herself, to fight her or his inertia, infinity and eternity. Being itself fights against nothingness (actually, the idea of nothingness), such is the law of the depth of depths and this leads to other struggles (against inertia, infinity, identity and eternity). This struggle is possible because being is thought. If not, it would not be able to fight against an ontologically impossible nothingness. But thought lives in the fear of nothingness, it lives from this fear.

There is no being, no source, no creator, however human, however divine he/she/it may be, that is not broken on this logic: to be full of self (static state) is impossible, it is necessary to live in order to escape nothingness (to live means to be relativized in opposites, to enter the dynamic of opposites). Static being is not the foundation, at the foundation there is not any kind of being at rest. It is life that is the foundation, it is the struggle against a "self full of self" that is at the foundation.

Even the coldest logic cannot escape this imperative. Every creator of logic is caught in the net of the depth of depths. For example, let's imagine that we want to construct a simply mental and perfectly abstract reality formed entirely of equal

parts. Say a hundred perfectly equal cubes. None can be distinguished from the others either by color, or texture, or the material used, or defects of form, by any quality, by any deficiency. Here is a perfect set for a theory of sets precisely because we have abstracted the quantities from the qualities. We wanted to keep only equal objects. But they are distinguished all the same by location in space, for if not, they are the same cube and there is no number at all. It will be necessary to assign them coordinates. We will suppose a perfectly homogeneous space, we will suppose their immobility. We want the simplest possible system. The coordinates will be numbers. Each cube will be designated by these numbers indicating their location in a three-dimensional space. We can then move the cubes, group them, add them or multiply them. We can do simple mathematical operations.

Already we have a sizeable problem, the number of cubes, the numbers that distinguish the cubes (for example their coordinates in a three-dimensional space), the numbers used in the operations, these types of numbers are all distinguished by figures, but these figures don't mean the same thing. For example, if we add 3 cubes and 2 cubes, we will have 5 cubes. But if we multiply 3 cubes by 2, we will have 6 of them. In this multiplication, the figure 2 designates the number of times 3 must be added. This 2 doesn't have the same meaning at all as the number 2 when it is used to designate a number of cubes in an addition. In the first case, 2 refers to the number of an operation (to multiply by 2 means adding two times), in the second case, 2 is the number of supposedly homogeneous things. This confusion seems benign, but the inevitable ambivalence is at the origin of, among other things, a still insoluble problem: it isn't possible to know all the prime numbers in advance by a simple formula (a prime number has no divisors except itself and one). In order to know the prime numbers, we must test them one by one.

We could enumerate many other complications. The theory of numbers that seeks the simplest possible system does not succeed in its program and years of study are needed to make progress with the problems that are added on as we find solutions to the preceding ones. For a number can't be a pure quantity without any quality. Quantity and quality are inseparable. In mathematics and in logic (it isn't necessary to distinguish them here), there is a basis that is not at all homogeneous, an invisible basis which, as we exercise the work of creator, forces the work to become more complex. The work will not be what we might have wanted at the beginning starting from our prejudice about what is simple; the work will be what we discover, what we tear out of the depth of depths. Mathematics seeks the simple but discovers the complex. It fights the complicated with the simple, but finds the complex in the simple. This struggle makes the creator enter the reality of the depth of depths, and, century after century, the work emerges, always simpler and always more complex. The phenomenon is general: a set of obscure constraints forces thought to submit to a thousand contortions it wants to escape, a set of obscure constraints forces the universe itself to be contorted. Thought and the cosmos are both forced by the same logic of struggle that has its origin in the obscure source of contradictions.

What do we mean here by "obscure"? This signifies a set of problems which can't be defined in advance in a transparent space, but are discovered one by one (or by clusters) by plunging actively (that is to say, while thinking) into the world of maximal simplicity (the One). The creator of mathematics, as well as the cosmos itself, doesn't act in an empty and simple background. There is no backdrop simple and free of constraints (even for the first creator). Creators work in a living background which forces all mental constructions and all cosmic creations also to grow more complex as the struggle advances, as time goes by.

Having the same deep constraints as the cosmos, advanced mathematics describe physical reality better than the elementary mathematics of the first Chinese bureaucrats at the beginning of writing. Mathematicians are drawing closer to the cosmos because they are drawing closer to the very depth the cosmos has to come to terms with, that is to say the depth of creative thought.

CHAPTER 3 : Primordial anger

Imagine, then, a filmmaker who has to come to terms with life, sound, light and characters, all of them sunk in the dark depths of being.. Let's go further, let's imagine a complete and primordial creator that starts its cosmic work in the virgin depth of the depth of depths, and who wants to accomplish, layer after layer, a work whose first finality is to produce the maximum of works which will themselves be creative. Its goal is not to make a film, but to make a meta-film that would permit the creation of all possible films by all possible filmmakers! A work which would have as its finality the invention of finalities!

At the start, in what is apparently a great void, there is only the creator, there is only its mind that it believes has no constraints. As long as it hasn't tried to create anything whatsoever, it believes in the omnipotence of its creative power. At least this is what we imagine at the beginning of time. It doesn't think of facing up to the constraints of the depths of depths. It says to itself: there is no one to force me to do anything. I am starting from zero. But as soon as it goes to work, it will encounter the dark depth of its being, not the homogeneity it imagines, but a million and perhaps an infinity of constraints, and it will be forced to come to terms with them. How surprised it will be to observe that these perfectly objective constraints it confronts are also the perfectly inner constraints that constitute it! Can the creator be reconciled with the creative depth? In this question there is all of life, all of suffering, and also all of joy, the worst and the best, I mean to say that there is the problem of "evil" and the work of making peace with "evil".

Every creator is an infinity trying to define itself, an identity that cannot reach itself, an eternity that cannot calm itself. Whether it is the first creator or a little brain buried in a primate's skull makes little difference, the constraints it confronts do not come primarily from physics, chemistry or biology, they come from the

sole fact that being cannot be nothingness, they come from the foundation of logic and mathematics. The poor creator can't even imagine that her or his contradictions are simply two symmetrical opposites, no, between two contradictions, the relations are complex (as we see in the books which attempt to describe the relation of light with supposedly empty and homogeneous space). Everywhere there is a dark depth full of constraints, a depth that forces a creation, but also makes impossible an infinity of prejudices (fancies that will not hold up for long in the face of real acts of thought or of creation). The creator enters the dark depth of the Source's structures. Regardless of the entry into matter, energy's every act will be fatal to the illusions and prejudices concerning a supposed simplicity of the depth of being and any neutrality whatever. Whatever the beginning, the creator's primordial simplicity will end up with the phenomenal complexity of the work.

Let's go to the identity side. What is it that can drive creative energy? Being can only arrive at existence through and in the struggle for life. As soon as it emerges, it is forced into multiplicity and heterogeneity, this in order to avoid annihilation in absolute simplicity. It follows that information (the multiplication of forms) emerges at the same time as energy (information and energy cannot live independently of each other). Knowledge of self is by this very fact inherent in life. But it is desire for knowledge and not knowledge. In other words, information creating forms precedes the fact of being informed; there is a difference in time between the informing energy and the informed energy, between the active and the reactive. In short, this supposedly inert mass cannot escape the necessity of informing itself, of willing itself, of touching itself, of knowing itself. For if it could escape this, it would have no part in being. It would have only nothingness. And this cannot be. We must repeat it: the first necessity of the darkness of the first depth is that stasis is an impossibility for being. Stasis is a way of associating with nothingness that is prohibited for being.

The first constraint is the dive itself, the movement of diving into the dark depth. It is impossible to escape the dark depth (unknowable in advance, but inevitable in all the acts of being). In other words, there is attraction of being for being. Every creator desires the depth of depths and dives into it. This is the creator's first moment. And even an inert gas would be forced into creation as soon as it left the imaginary to go into the real or enter concrete thought. There is, then, a movement of masses curling up around self. There is sinking into self. A dive into the darkness of the depth (which is not chaos and incoherence at all, but a set of constraints that are as inevitable as they are impossible to define in advance). This dive leads to a second level of constraint: we cannot dive into the depth and into the center without at the same time exploding, heading toward the outside, pouring ourselves out of ourselves and "enjoying" ourselves. The more we enter, the more we go out.

The movements of impression and expression are created by tending toward otherness and the heterogeneous. It is no doubt a movement of diving inward to the search for oneself and a movement of expansion to what is other than oneself. The two are necessary for all dynamics just as it is necessary to get the air out of a

container in order for water to enter (the two movements are necessarily synchronous). But identity is nowhere to be found. The more it goes inside, the more it goes outside. The closer it gets to itself, to its primordial simplicity, the more complexity it creates in its work. It is like the mathematician. It is like all creators.

The great traditions called this movement of creative flames broadening being as it contracts it, "anger", "turbulence", "whirlwind", "spiration", "spirit". Expansion and gravity (attraction) are inevitable in all dynamics.

CHAPTER 4 : Primordial suffering and joy

The creator desires itself, but cannot reach itself. It wants to touch itself, but escapes itself. It would like to take itself, surround itself, in short, know itself, but it enters the dark depth and a complex, tormented, bubbling creation comes out of it... So different from its expectation! The end is never the origin, and this for the same reasons that absolute homogeneity is impossible in space. Otherness is a necessity for the living being, a necessity for breaking out of nothingness.

The creator doesn't get angry. For it didn't have a wish as stupid as "wanting an image of self", "seeking the absence of opposites", "not tolerating any attack on its freedom" and I don't know what other prejudices of the same kind (which would make the primordial "anger" veer off into hate). No, it doesn't get angry. But fury does go out of it; this comes from the clash of contradictions. From its dive into the dark depth, turbulence arises. It is in the image of no matter what sun.

Starting from there, everything gets under way apparently mechanically, but not entirely mechanically (repetition of the same is impossible for a being that is not nothingness). The concentration explodes. Inflation amazingly crosses the wall of the speed of self-information (speed of light). Gravity attracts the granules of quantic waves. Thermonuclear explosions irrigate space-time with light. As the atoms increase in complexity and in mass, they pile up, forming stars and planets. The work becomes more complicated, but carries a fundamental simplicity that forces complication to form complexities. We might rewrite the whole story of the Big Bang here, the story of a moment-in-space in an infinite-finite story of temporal eternity.

Let's place ourselves on another level, the only one in fact that is appropriate here, the one where the psychological and the physical, that is to say the inner and the outer, are no longer any more separable than information and energy. As we have already said, every creator, whoever he/she/it may be, is itself a dive into the depth of depths. It is always about a similar experience, whether it is for the

cosmos, for the mathematician, for the musician, for the philosopher... So let's follow this dive into the depth of depths.

The more we desire to know ourselves, the more we dive into ourselves and the more works emerge from us in which we recognize ourselves without ever knowing ourselves completely. There is attraction, piling up, crushing on the self; there is bubbling, explosion, inflation; there is astonishment, reconciliation and "anger" in the face of the impossible identification (self-knowledge) of our creative identity. Turbulence is inevitable between the contradictory movements engendered by the plunge into creativity's inner parts. To desire oneself without ever being able to attain oneself and to always create another we cannot attain, isn't this a kind of torture whose characteristic is being able to be prolonged indefinitely? This turbulence of the living being is the very definition of suffering.

Energy won't be able to vanish without being recovered by information (to always be forced to create), information won't be able to reign alone without being subjected to the degradation of energy (fatigue, entropy). Nothing can be quieted, nothing can be satisfied, except for a moment. Light radiates, light is absorbed, it can never rest eternally, it can never radiate eternally. Everything sinks back into the darkness of unconsciousness to reemerge more conscious, but consciousness will return into the depth of depths for a slow dissolution-reconstruction. Every system can't escape the effort of construction, and can't escape destruction either, except for a moment. Health can't be able to live without sickness, sickness can't ever be definitively extinguished. No work will be left in the shadows, all glory will collapse into oblivion. No action will remain unknown, all knowledge will be lost...

Forced by the depth of depths into cycles where the earth never touches the sky, where the sky never falls on the earth, without one or the other ever being able to escape itself entirely or be radically absorbed, this terrible and constitutive absence of all absolutes in the absolute dynamics of eternity doesn't even succeed in forming eternally homogeneous curls, equivalent lives, a way of offering to the conscious gaze a closed mandala, an eternal Sisyphus. Temporality is engaged in the formation of temporal cells, open curls like curls of hair, with rising hours, descending hours, hours of creation, hours of destruction, but none of these stories either will escape their duty of evolution, of migration into the broader, the more open, the more complex, the more responsible, the more deeply sunk into unconsciousness, the more elevated in consciousness, the more independent and dependent...

The life of each atom, molecule, cell, person must at the same time be opened to all possible futures and all past and present realities. Each life must exhaust all possibilities in bringing new routes into the world. No life can avoid climbing into its works and evolving from relative death to relative death; no life can escape other lives. Everything is forced into the creative mutuality of the universal community.

Impossible either to escape the self or attain it completely, impossible to escape others or join them entirely. In the inner as in the outer, in movement and in broadening, in the ascent and in the descent, in hope and in disappointment, contradictions and constraints, torments and breakthroughs eternally cross paths. Can we define suffering otherwise?

Could we, however, define joy otherwise? There is a mad exuberance there, a bubbling of life, but above all a multiplying of windows. There, as a whole, there is, taken in its full width, a universe being widened and widening all the dimensions of the possible. It is not, to be sure, an immutable joy, but isn't an immutable joy a dead end? In reality, there is one condition for all this constructive bubbling of the "tree of life" -- I am thinking of Terrence Malik's film *The Tree of Life* -- to enter into joy even while keeping its roots sunk in the primordial darkness. In order for all this suffering coming out of the deepest depths of being itself, from its prohibition of nothingness, to be just the shady side of a devouring fire of joy, there is a condition. Let's go in this direction.

The fact that the end can't fall back into its beginning, this fact that is felt as dissatisfaction is also called desire. The beginning stretches toward an end that becomes other as life advances. Desire can never hold its object, but it is eternally extended from the subject toward another subject, from one radiating center toward another radiating center. To say that all is suffering is also to say that all is desire. Desire, from the Latin *desiderare*, means to regret an absence. Absence is very different from nothingness. An absent person, for example, is that same person even when she is elsewhere and we would like her to be closer. It is presence. Desire is an attraction between two distant realities, an attraction as essential to physics and to life as the attraction that defines masses (gravity). To desire air indicates a relation of dependence in regard to a reality (air) that is partly lacking (if it were so absolutely, there wouldn't be any desire, we would be dead). To desire justice is of the same order, for justice is as essential as air to the life of collaborating animals. But air itself, when we breathe it, widens our desires, just as a drop of justice widens our need for justice in adding to it the desire for generosity and for forgiveness.

To say that all is desire is also to say that nothing falls back and that all grows wider. And then, who can, in the desiring being, distinguish bland suffering from suffering's spice? In the shadowy depth of depths, what is the root of desire? To fulfill oneself as an other (the same but also other), to go beyond one's content, what is contained in the actual and even in the potential... Now precisely, the structure of shadows, the structure of the depth of depths, makes it so that this can't not be realized. Everything is forced to go forward, but everything lives in the conviction and the assurance that being will never be annihilated (the only recognizable law in the depth of depths). Desire and time is also that. Certainly nothing can escape death, but this is possible only because nothing can escape life. Death is possible and necessary, but it is because life is stronger. Death is one of life's excesses.

CHAPTER 5 : The transphenomenal point

We take root in something fundamental. If all contradictions are required to act together toward their impossible resolution, it is because they are linked by a primordial unity. The thumb and index finger work together because the hand is a whole. There is an ineffable unity in the depth of depths which makes the opposites and their dynamics act.

It is also the basis of desire. This is why desire never has an object, but travels within its obsession of unifying beginning and end, not only in its body, as a state of body that is simultaneously energy and the solution of opposites (information), but also a state of time which, from dissatisfaction to dissatisfaction, each time finds something greater and more fascinating than the idea it started with: an otherness and an alteration of self which in the end always create a little more happiness than frustration, a little more love of life than desire to die, a little more hope than despair. Thus everything serves to maximize what can be drawn from being without ever perfectly achieving this (except for a moment).

If there is a fundamental unity that forces the primordial opposites to work (and this unity can be called desire for self in becoming other), it is because there is one desire that connects all of us, one transphenomenal and motivating point. In the tree and in the grass, in the Sun and in its planets, in the salt of the sea and the fishes of the deep, in the madness of the world and in the work of wisdom, there is the same desire.

Just yesterday, I took my one-year-old filly by the halter. Have you ever caught a young horse by the halter? You feel all the contradictions that leave the grass, transformed into electricity holding three hundred kilos of muscle. A tension of fear and curiosity, of confidence and distrust, of derision and respect that wants to explode and seduce, approach and flee. And then you release the animal. All this is transformed into a race and cavorting, into a tango that is exactly the state of the deepest depth of the soul of all of us, into a field that is suddenly our stomach, into a light that is our common brain. And you are so happy to be the grass as much as the sky, united in the horse.

As long as desire yields itself to the flames of life, "suffering" dances, it widens the heart, it makes the heart able to envelop more emotions, more feelings. Then the music enters unknown variations. All is played and all plays at fleeing in face of the self, note after note, a bit predictable and at the same time unpredictable. And the heart ends up knowing that it will be neither absolutely denied nor simply satisfied. Like a goose, it will always be stuffed with a surplus. For its stomach is called to swallow the growing universe. And this excess will never be exactly what it expected, but more, so much more.

Desire can give itself fully to love. Why? It knows at the bottom of itself that it will find something greater than what it is looking for, always greater. The creator

is condemned to make something greater than itself, it is its suffering and it is its joy. Before it, the sea.

CHAPTER 6 : The unhappiness of evil

But -- and this "but" is enormous -- the fundamental condition for all the suffering of the fire to also be all the joy of the flames is that desire never clash with will. The destiny of will is to follow desire, not to substitute itself for it. When will replaces desire, the entire earth is in danger⁵⁴. This is the essence of the evil due to fault, which is certainly not the primordial "anger" of the creator. The essence of the great traditions consists of trying to differentiate creative anger from the sufferings due to original sin (meaning the sin that leads to all the sins).

Let's talk about the "fault that is the origin of faults". Economic totalitarianism (the idea that the profits of some necessarily compensate for the losses of others), fanaticism (the fatal attachment to a representation of divinity or of fate), extreme conservatism (the belief in the survival of the fittest), technological scientism (the belief that technology by itself can save us), all these deviations are driving us to disaster. And it is one single deviation: will against desire. Will is a goal fixed in spite of all reality, it is a stop-order on the future. Desire is the mobile connection of consciousness with reality. Economic totalitarianism, for instance, looks like an obstinate denial of the reality of natural ecology and human ecology. In this form of economy, consumption aims at destroying desire, as the standardization of work aims at destroying creativity.

Desire is nothing other than the pursuit of forms being transformed, the gap between the beginning and the end, the eternal opening of the end created by the fundamental contradictions coming from the prohibition of nothingness. Desire is the primordial contradiction that, in advancing through life, continually plunges back into reality. The web of desires is the web of ecology itself, the sum of attractions that keep life alive. Desire stretches itself toward the other as toward a being on whom it depends. In desire, the other is recognized as a self that calls me, as a deep depth seeking to do its work, a work that is "ours", which results from a relationship. The will we are speaking of here is just the opposite. It imagines the object, it prefabricates it. In will, the end is the projection of the beginning (my will). Will is an attempt to compel the end to embrace the beginning (my will). For example, desire has driven scientific thought to know the "how" of phenomena. The hypothesis is always and must always be the simplest explanation, the most immediately intuitive taking into account the knowledge already acquired. This hypothesis must pass the test of reality. But if scientific thought does not desire to advance toward this particular form of truth, if it

⁵⁴ This is the thesis I maintained in *Le pouvoir ou la vie* (Power or Life).

"forces" the hypothesis in the direction of the money that subsidized the research, it participates in economic totalitarianism. This stubbornness has nothing to do with creative anger.

In the primordial suffering of being, in the primordial desire which forms the cosmic temporality, the flames are renewed and form joy, I mean the capacity to go and do battle for life, with a heart full of renewed strengths. Why? Because I find, I taste, I am fed by what happens and not what I might want to happen. If I begin to will, that is to say try to seal time into closed curls where the result would have to be what is expected, then I place myself in an awkward position. The movement of widening will anger me. I want this world, but what happens to me is another world. I want this god, but another god happens to me. I want this life and another one happens to me. And during this time, my heart is dying from lack of connection with the forest, the lakes and the mountains that surround me.

CHAPTER 7 : Deliver us from evil

Deliver us from evil! The most dangerous prayer and the most decisive. If evil signifies the reality of life, if it is in the state of being in its depth of primordial contradictions, then to say "deliver us from evil", is to say "deliver us from life". It is a pure revolt against nature, against out nature, against being itself. Being can't escape primordial contradictions. These contradictions create suffering. But this suffering, even if it hurts, is not evil, it is life, it is even the turbulence of joy. If I radically reject this living suffering, I will add supplementary misfortunes to it. I must come to terms with it in order to make a better world, I must not struggle against it in order to affirm my will.

Life often hurts, but it is not an evil to be combatted. If I set myself up as a judge and vote against it, if I call primordial suffering "evil", if I want to deliver others as well as myself from this supposed "evil", then I will declare war against the "struggle for life" and this will be an increase in suffering. Wars for a fixed idea are wills renouncing the true struggle; all wars are counter-struggles, acts of cowardice before the fundamental desire of being. When, in the great traditions, people imagined the first Creator as submerged in the depth of depths, when they understood that it was not the Omnipotent, but the artist of being and its contradictions, the "victim" of the fundamental logic, the first mathematics, and of a creation that can only maximize this primordial reality, when they imagined the Creator face to face with being and not face to face with nothing, they believed that it was angry and that the sky and the earth were the fruit of this rage. From this the gods of hate and regret about life were born. From this was born the love of force against chaos. And all our societies are "force" against "chaos", so that in struggling against it (the supposed primordial disorder) we create horror.

Yet this result is not cosmic, it is secondary, it is the invention of human cultures that have taken up a great deal of space and threaten us. The bottom of the cosmos is not chaos, but the union of contradictions engaged in a struggle to open up futures. This appears like suffering and fiery fury, but exuberance also, and joy. The gods of love and life are born from this.

What is a destructive rage that is not exactly the primordial "anger" of being against nothingness, that is not this basic "violence" named life? What is the added measure of unhappiness that falls upon us when we start disliking life? This unhappiness is desire that has become the will to possess. Possession in the sense where the object possessed is supposedly subjected to a will that holds it fast. The will to possess has as its hallmark defining the future that it wants. It imagines the future as, "here is the goal I want to reach" and subsequently everything is aimed toward this image. In such a will, the goal is in the beginning. A will like this resembles a cemented cauldron that accumulates an explosive energy. Not following the nature of time, rejecting the opening suitable for time, rejecting the future as it presents itself, all the energy turns against the information working in it, and the temperature will climb to the exploding-point.

To be sure, once the explosion happens, life will resume its course and its opening. And all will be put back in its place in the great adventure. Who can derail life? We are worried about ecology, but the economy is such that all the wealth is found in the hands of a few billionaires. This will lead to revolts for survival and this in turn to the flight of capital. The situation can only get worse. Societies risk exploding one by one in the classic oscillation of revolt and repression.

Nevertheless, there was a surplus of suffering, an exaggeration of suffering, an accumulation of suffering with concentration camps, wars, genocides, reprisals, unemployment, extreme poverty, pollution, suffocation, a repeated engineering of death. This was capable of poisoning centuries, indeed millennia in a cauldron where the victims knew misery no longer in the order of desire, but in the order of will. These victims endured an incredibly destructive will to possess. All this will to deliver life from "evil" ends in more suffering. Deliver us from evil, the most tragic of prayers.

However, if "deliver us from evil" is addressed to this will against desire, if this prayer is addressed to our murderous will, to our supposedly omnipotent will, then it is a very beautiful prayer. We must constantly beseech our soul not to lose the sense of life. We must constantly beseech the world to let desire whistle in the openings of bodies. We must constantly invite the world to be reconciled with life. May the soul's depth hear this prayer. May all souls hear it. For it is hard to live in a world dead set against desire and captive of its will to power.

CHAPTER 8 : The mountain beneath

"First day" of creation: an explosion. The extraordinary fall in temperature toward lower and lower thresholds. Direction: - 273.15 degrees Celsius, the absolute of cold, threshold that must be approached, but never reached. Cooling of energies, condensation of energies into different masses, attraction of masses, star formation; candles are lit in the night at several billion degrees Celsius... Why descend to such cold to light such furious stars? Why sink into such a night, if it is to sparkle with such a light? Why make such a void, if it is to construct molecular buildings formed of a thousand billion cells?

"First day" of a human story: a sudden entrance. A preteen girl was crouched on the edge of a third-story window in a big city. She had been there since noon. The sun that had made her drowsy with its heat had set early. In the alley, a young teenage boy was smoking a thick "joint" in the cold. With blue lips and trembling hands, he slid the blade of his knife over his upper wrist. The girl's heart gave a start. She felt giddy. She descended the numerous steps that separated her from the ground below... Up there, warmth and comfort, word games and crossword puzzles, security and too much freedom; down below, the rocky cold of desperate poverty. With each step she descended, she had felt that she would never be able to go back up again. She went on in the night to save the boy.

The following year, in the debris of her lost innocence, she was already fuming from her first disillusion. Why go down in the night and the cold? Why go and wander in emptiness when she had everything at home?

High temperatures must go down and every heaven needs to exhaust the possibilities of suffering, even the artificial heavens of the urban bourgeoisie. Every mountain has been lifted up by lava under enormous pressure before becoming a happy hiker's downhill path. And we must admit that if the high-altitude landscape is breathtaking, the air is often unbreathable. Down below, rivers carry sediment from up above, grow fat, increase in fertility. We mustn't think that the good is somewhere high or low; perhaps it's in the moving! Perhaps the mountains themselves are balls of dough that must be raised and crushed for grass to sprout at last. For the potter: one hand hollows out the clay, the other makes it round.

To erect their materialistic heavens, some make deserts, others destroy whole societies to fabricate a socialist heaven, still others undermine the emerging human brother/sisterhood with the goal of imposing their Church... The heroin addict prefers to pierce her or his veins for a moment of euphoria, this is the usual act of every climber. We certainly have to descend the mountain if we want to have something to scale. Empty in order to fill, demolish in order to build, dream in order to live, leave in order to return, get stoned in order to awaken, lose yourself in order to save another... Implacable logic of being: the fall comes first. The runoff in every direction from the fall and the suffering. To go toward

unreachable nothing in order to touch the floor of the smallest state of being.
And then climb back up.

Kenosis in Greek, "void" in physics, "cold" in thermodynamics, "crucible" in alchemy, "night" in mysticism, "anxiety" in psychology, "evil" in ethics, "drug" in pharmacology, always the same word articulated differently... Whether it is the story of the cosmos, the story of a society, the story of Buddha or the life of Mary Magdalen, from the moment a mountain has to be climbed, one begins by digging a big hole. "The cry of the vulture will tear the night", the Egyptian genesis story relates. All these genesis accounts begin by emptying being of its fullness in order to force life back to the idea of nothingness so as to produce the primordial explosion.

Next, for the cosmos as for Mary Magdalen, from the first scream of anguish (anguish means being squeezed, being suffocated from lack of space) being is smashed against the impossibility of touching nothingness. From this experience, a logic of being is born: there is no place to dispose of debris and of consequences, everything returns to being's enclosure. There is no place outside of being to throw the consequences of the fall. Sooner or later, we find ourselves like any soldier: disemboweled, guts in our arms, forced to digest ourselves. Consciousness: the digestion of self, for no flight is possible.

I call ecology of consciousness the dynamic unity of being which drives it to a creative vitality where it is necessary to begin at the lowest possible level and integrate the consequences of all the energy expenditures, for nowhere is there any nothingness in which to discharge waste. All must be digested. All, even the coldest nights and the apparently most watertight impasses.

Everything is rolled from the same dough: the unwanted and the wanted, the unforeseen results of our best-planned behaviors, the disappearance of species caused by our compulsive acts, global warming due to the freezing of our consciences, the injustice of our ways of exercising justice, the genocides engendered by our most idealistic acts... Nothing is lost, everything is created by integrating our excrement into the making of our vegetables and our misery into the creation of our acts of love. However high our ideals may be, and our rebellion against our ideals, the soil receives tons of plastic materials that it will have to digest, and the air is saturated with gases that life will have to breathe.

We humans will not escape the human, we will have to come to terms with what we are. Take a single domain, that of ethics. It is well known that consciousness goes in the opposite direction from social morality. In social morality, it is sufficient to do what is reputed to be right for the question of justice to no longer arise. This leads inevitably to the following consequence: the more we conform to the justice of an empire, the less just the world is. This is inevitable, since the social morality of empires aims at drowning responsibility in guilt. Guilt is imagined good against imagined evil; responsibility is action confronted with its result. Guilt inhibits creativity and drives us toward compulsive actions in order to relieve an anxiety born of shame. Which, obviously, aggravates the problem.

A "guilty" society suppresses all the symbols of its failures: the very poor, petty criminals, drug addicts, children who persist in being happy, old men worried about their grandchildren, the insane reflecting the collective insanity, the dumps reflecting consumption... What follows from this is repression, throwing organic matter into waste-treatment basins, confining the supposedly guilty in prisons, driving addicts into the most sordid alleys... If a magic carpet existed, we would sweep everything under it. Except that there is no nothingness, there is no somewhere else, and all this repressed world is there with its unanimous and furious scream. Rejecting the heroin addict doesn't mean that the retiree's sleeping pills have no consequences! And all the consequences smash into our lives.

Cramming injustice into zones forbidden to the media does not create zones of justice. Locking up the insane doesn't make the others wise. Imprisoning criminals doesn't make the laws just. Prohibiting a drug doesn't make the other drugs harmless. Breaking all the mirrors in the house doesn't make us good-looking. Starving the poor, the sick, the traumatized doesn't make the others invulnerable. Relieving guilt doesn't ship the consequences outside of being!

Consciousness goes in the opposite direction. For it, the question of justice becomes increasingly acute as the person puts justice into practice. With each action she/he does for justice, she/he observes the consequences and embraces them. And there always are unjust consequences for no matter what just action, so that the questions grow with the actions. And as the consequences, when all is said and done, are persons who suffer, it is more imperative for consciousness to be connected to beings who suffer than to be delivered from guilt. The feeling of guilt concerns the evil caused by oneself (it is almost nothing), consciousness feels concerned with all the plants, all the animals, and all the persons (it is almost everything).

As opposed to morality, ethics is, then, an indicator of consciousness and it is measured by the degree of disobedience to the mores of unjust societies (for example, by the refusal to yield to the imperatives of consumption) and by the strange experience of lightening brought about by bearing the fate of all. The more you put your shoulder under the weight and are crushed by it, the lighter you become.

Why does the sun illuminate us so violently? It is because it supports the enormous mass of all the atoms that form it, without exception. There is a central point in every sun where gravity, pressure and oppression are maximal. It is from there that the photons and neutrinos radiate (the lightest particles in the cosmos). There is only one way of getting out of the extreme weight and gravity of the situation: to carry everything, to become responsible for everything. Under the weight of the total mass of the planet, you are propelled toward the exterior by an infinitely light radiation of radioactive elements (our earth radiates the radiation of heavy elements crushed in the center of the earth). In the meantime you will feel a rare oppression and moments of inexplicable joy.

Sensitivity to beauty is also a good indicator of consciousness. Vast broad mountains, seas that overflow in an estuary sixty kilometers wide, a sky that covers two thirds of the picture, and in the middle of a hedgerow, a garden, and in the garden some very little characters seated next to a donkey... Beauty consists of the work of proportions at the precise moment when the infinitely small of the self touches the infinitely great of the Self.

Science also (but not scientism) encourages the development of consciousness since it dismantles one by one the prejudices which cover our ignorance, it breaks our pride on questions as simple as those of the weight of things and the lightness of information. Can an animal species that doesn't even know the nature of its weight (and far from it) really make pronouncements on the existence of souls! Instead it should provide itself with the conditions for a complete experience of self.

We could discuss other indicators, but consciousness never finds a place to totally hide the smallest little piece of being. All its hiding places grow bigger and blow up in our faces. It is the inevitable education of being, incompatible with nothingness and thus with denial. Consciousness, like being, cannot be torn. What isn't recognized, what is repressed under the rug of "defense mechanisms", is never lost in an absolute oblivion, in any nothingness. All this is to be found "tragedified" in everyday life. Our lives are the expressions of our souls. The desires we haven't taken on, the desires crushed beneath the will to power (for example, love smothered by the acquisition of consumer goods), are found in the frantic activity of our daily lives. A city: the collectivization of individual tragedies.

It is not possible, then, for consciousness to stop itself from climbing up a mountain to see if all goes well. This is the "high" direction. Nor is it possible for it to keep itself from diving down into a human swarm to rescue a submerged being. This is the "low" direction. Consciousness climbs the mountain at the same time that it plunges into the valley. This is the vertical axis that descends in proportion to the ascent.

Consciousness wants to see how the world is going. It is the only way for it to find its happiness. But in order for it to see, the floor must descend (everything necessarily begins with being and not with nothingness, so everything must begin with a descent, an approach to nothingness). With stillness and clarity, consciousness sees. We could say that it exists and is forged in its own paradoxes: to see its blindness, to do everything in its powerlessness, to love what is rejected, to reflect in silence. Nose glued to the source, it perceives the enormity of the project: to digest oneself in order to grow in wisdom, in beauty and in creativity. To digest oneself is to assume the consequences.

On the axis of height, loss and salvation; on the axis of width, multiplicity and unity; on the axis of depth, anxiety and joy; on the axis of time, the impossibility of an end in the impossibility of a beginning (or, if you prefer, the infinite broadening of finalities as the beginning disappears behind the horizon of

memory). Consciousness is multidimensional in essence and all attempts to reduce it to a single dimension end up in disaster.

Once under way, consciousness no longer needs to prove itself: its eyes see and measure its blindness, so it has a light; its hands act with the delicacy of one who knows his own ignorance, so it has sensitivity; it hears the pain of the one it forgets, so it has good ears... As the hand brings food to the mouth, it is fed by all it gives, for nothing is a stranger to it. Each time it responds to what it sees as being the greatest act of love, it grows in discernment and discovers more humble ways of loving. There comes a time when it feels its own flesh in all the bodies shivering in the night. In the depths of itself, it feels the desire at the origin of the cosmos: to bring all things out of the shadows (and every form, even the most beautiful, produces a shadow)...

In short, consciousness is being itself in that it can't possess itself because its essence is creation. And what can being not possess? A fixed and unique form and a rug to hide its peelings under. To understand this first impossibility, let's imagine the greatest masterpiece of humanity. Keep it exactly the same forever. Force us to see, to hear, to taste and touch it... Everything that isn't this masterpiece will want to leave these spectator-creators who are being treated to it. Gradually, they will suffer from all that isn't the masterpiece, from all the paintings it isn't, from all the music it isn't... And if the emergence of these potential works is forbidden, the world will explode. One religion brings another religion, one political system leads to another political system, one state of happiness requires another state of happiness...

Because of this, in the vertical dimension what man treats as rubbish remains his only salvation; in the dimension of wideness, what he treats like a stranger is the part of himself he needs most: in depth, what he treats as anxiety and depression is nothing other than the origin of a new joy; in the axis of time, what he considers an impasse is a birth. His psyche can never go far from the practice of redemption; the necessity of Buddha is *samsâra*, the necessity of Jesus is Mary Magdalen, the necessity of Camus is the plague. Consciousness can only live through a reconciliation with what the shadow of forms attempts to create.

That evening, at the moment when she was on the balcony, under the evanescent light of the great desert of her solitude and her ignorance, consciousness tapped the shoulder of the dangerously beautiful, intelligent and naive preadolescent. Could the girl have done otherwise than descend toward the hell of drugs? What alternative was in front of her? Enter collective hypocrisy or stake her all?

One who has seen the world offered to the children of television and shopping malls, this gelatinous, flashy, fluorescent and adhesive thing that is injected into their heads to get them involved in the latest obsessions, one who has seen this and all that is snatched away from the child: animals, plants, the shiver of bare feet in the grass, the pleasure of participating in nature's effort to feed us, one who has seen that and who has at the same time looked at the girl suspended at the

window, dead of solitude in the apparent ease of her childhood, this one knows that she dived into hell to save her skin.

How could she have known that the trap was a double one? The stage of rebellion is only the second fishing net. It imprisons those who have passed through the mesh of submission, the first net. The child who escapes the pharmacist won't escape the corner drug dealer, the one who leaves television behind will find herself in the street; the one who laughs at "the Good Lord" is already indoctrinated at Walmart... So, the girl had barely finished grade school when she fell into the cold of the night, slipped into the sleeping bags of the unloved, wandered among the rags and the cardboard boxes, danced under the intermittent light of neon signs... New and eternal Mary Magdalen.

All was lost: love, children, the beauty of a carefree face, illusions, respect, the trust of those one loves... She learned that marginality has been regimented even more than all the other sectors of the economy into the great general finality of enriching those who are rolling in money. The poor child obeyed the "law of the double market": the honest people's market and the black market. She who wanted to make revolution struggles, wings caught in a strip of fly paper.

She blames herself for not exploding her bomb on the public square, for keeping it in her swollen throat. All the words she didn't write or shout hurt her. But there is no nothingness in which we can bow and leave the stage. Even the suicide is used statistically for the promotion of services he did not have. We have fun watching those who climb the mountain beneath. We smile. Let them climb back up from their fall, since they were the ones who fell! Let them assume the consequences of their choices! There is truth in this. But they are also assuming the consequences of our deep sleep, we who, while sleeping, tie knot by knot the net of the excluded.

I see her from time to time. She is now in her forties, credit card maxed out, five hundred dollars of "welfare" a month, a hundred hours of community service to perform, a bruised body and, at each job interview, a pat on the back: "Go on, you can do it." And then a great emptiness. Everest looks like a hill beside her mountain. And if, one day, she manages by some miracle to slip her scratched hand on the last rock of the crest, and she tears herself from social gravity to finally set foot in a factory, they will say: "Welcome, here you are at last at zero, on the assembly line..." She has married the cause of the cosmos, she has climbed the slope of exclusion for us, she has conquered us all. The Golgotha of Mary Magdalen was no less than that of the beloved. She summarizes human history like Gandhi summarized the history of India.

The forgotten ones are climbing from everywhere, the lame, the lost, all the unloved children of peoples who have mined their margins with chemical bombs and industrial drugs so as not to lose control of consciousnesses being born. They had to bury alive those thirsting for truth and justice, they had to thicken their mouths with massive doses of heroin, it was imperative that their cries or their writings not brush the eardrums of consciousness... Drugs: the modern

version of the sentence to be walled in, like Antigone, until death ensues, so that the cry for justice is no longer heard. And if someone escapes, he will be taken back into the first net's hell, the assembly line, the revolving door of shopping centers.

And here they are, they woke up this morning, they left their holes and alleys, they display their suffering and their victory on the noisy cathedral of the squares. And now, their joined arms, their hands braided at the lowest in our souls lift us like a fishing net. They lift us up. They work at a factory perhaps or at a bank, they look to be caught in the higher net, but they have, with success, endured the vaccine of freedom. And now they lift us up.

During all this time, they have been the bottom of our souls, they have been the silt and the root, they have been our shadow and our body, they lift us from below. They leave nothing of us in the secret depth. Through them, our most damnable abysses, our most trampled aspirations, our most denied anxieties come out of the swamp. They show us to the sun, they stretch us out on their drying-racks, flesh open, hearts finally unfolded, truth bare. Mirror. The mountain they climbed is the mountain of our soul.

While we busied ourselves with morality and justice, they scraped our good consciences by the root, making the mud rise, shaking our fears in the light. They left nothing in the dark. They reflected us. Through them, the sun penetrates us. The day of extraction has come. The honey is coming out of the hive.

A civilization can never rise again except through those who are the feet of the world. They have restored our feet, our ankles, our calves, and all of our bodies. And if we are treading on solid ground in the noonday sun, it is because they have toiled in the dark recesses of our souls. They have searched our night.

We must surely realize that everything that is on the outside and even on the extreme outside, in exclusion, on the impossible edge of nothingness, is the rejected part of our inner life.

When we see a being, a prodigal son, return from so far, climb back up the mountain beneath, it is not to enter our world, it is to make the gravity of our beings enter us. It is consciousness returning from its borders.

The ecology of consciousness embraces all our house. In fact, our cosmic house is as much an enveloping consciousness as we are that enveloping consciousness. But is there a bottom to that consciousness? Is there a being whose presence we can feel? And if there is, is it bringing us together in respect for our beings, or is it dissolving us in its impersonal totality?

CHAPTER 9 : The Little Prince

One could imagine that a vast and cumulative consciousness enriches itself with different planetary experiences, ours included. After life on earth, to inhabit at last a freer, broader, more inclusive consciousness. We would very much like to see or dream this experience. In the absence of proof, a vision. But to see or dream, we have to stick to the visible. Who has ever had a perfectly invisible dream?

This sentence of Saint-Exupéry is reproduced mechanically and out of context: "The essential is invisible". It might be better to say instead: the essential is the visible itself. For the important thing now is to see the Little Prince appear in the twinkling of a star. More precisely, *The Little Prince* has made us sensitive to the mystery of eyes that manufacture the visible in the mass of the invisible. After reading it, some of us will continue to look at the sky as if the Little Prince had not existed, they will see only a great void pierced by thermonuclear explosions. Others will drink in the starlight like an invigorating wine, and will detect in the hazy images of twilight a face inspiring confidence. Everything depends on eyes. One says: nothing is a miracle because everything is natural. The former doesn't celebrate the sunrise. The latter jumps for joy even before the day breaks!

What I want to say is that the question is not to know what is behind the visible. It's not about searching for worlds behind ours which may or may not exist. The question of the Little Prince is not about his existence, it is about the character, captivating or not, of beings. *The Little Prince* is heaven himself, inasmuch as he is a captivating face. The question is important. If being is captivating, in the sense that we long to be attached to it, then we will exist for quite some time, if being is not captivating, who would want to keep on living in full consciousness?

What is a captivating being? It's a being who is hard to swallow, a being who doesn't slip like water off a duck's back, a being who isn't obvious, a being whose presence or loss we can't digest, a being we gradually recognize as one who opens our creative freedom as we recognize our total dependence on her, him or it. If I look at it in the past, I say: it is coming, I have always expected it. If I look at it in the present moment, I say: it is there, it is my most precious possession. If I look at it in the future, I'll never grow tired of it. May no one ever take it away from me! The captivating being has created my desire for it. It has touched me, and now I see only it in all the sky's darkness. It is worth everything that it is.

If consciousness is anything, it is time attached to space, source attached to expression, identity attached to the other, the invisible attached to the visible. Yes, to become visible in order to become captivating is the whole work of the Little Prince. For this, two things are necessary: *resonance* and *simultaneity*.

The first mystery of being is not the invisible or the visible, but the visibility of the invisible, the fact that the invisible lets itself be seen. Logically, we ought to expect the cosmos to be invisible, since all is in flux, the loom of time (have you ever seen time?), including the operations of all brains known and unknown.

There is only flux and influx everywhere. How does it happen, then, that we see not just an image of the real, but an entire landscape with, in addition, the impression that we are living in it? How can the flight of time (the flux) become a landscape of stars over free seas and lands?

You will object: the blind live in the invisible. I'm afraid not! The blind know that they are visible and that all things are visible. They too live in a landscape! They are, however, perhaps more aware than others of the mysterious character of the acts of seeing and the acts of being made visible.

Before they saw with eyes, animals were blind. But they recognized that they were visible (for their predators and partners at least) and that things were visible. It was then that life invented different organs of perception, because if one doesn't succeed in coming to terms with the fact of being visible in a visible world, one cannot survive.

However, in principle nothing ought to be visible. Everything comes to us in the form of undulatory fluxes. Light, sounds, touch, and even the kinesthetic sensations of our own movements come to us in the form of waves, that is to say one bit of information at a time. One precise receptor receives one photon at a time, one ion knocks on the door and disappears... Everything comes to us in the form of nervous fluxes of successive bits of information, like a series of letters, an A, a Y, a D, a V, none of which really have the time to appear before they have already disappeared. The arrow of time carries everything away before anything truly has the time to appear. Physics, the science of fluids, is the discovery that everything is invisible because everything is temporal. We could believe it. But it doesn't happen that way.

If I turn a photographic lens toward the sky and click, if the click is very short, say a fraction of a nanosecond, the photo reflects only an opaque night, a black screen, no star, no Little Prince, nothing at all, one or two photons maybe. Since starlight is generally weak, we will have to expose the photosensitive cells to the light for a rather long period. And gradually the information will accumulate and we will see at first the most sparkling stars and then the less sparkling ones. This is one of the mysteries of visibility. Time is not a river that passes. If time passed, D would replace C, C would replace B, B would replace A... We would see only the last photon, no more energy than that produced by a single photon, no more information than that delivered by it. Nothing visible. But time does not pass. Time has as its principal property not passing, it "accumulates", it piles up in order to be seen.

It is not a simple addition. What appears at the last moment is not simple accumulation, the simple addition of all the preceding moments, it's really a synthesis like waves alone are able to make... The receptor is not simple either: what effects does the information produce on it? What does it retain? What does it forget? The process of synthesis is more or less complex depending on the carrier waves, the type of information and the receptor, but what we see is always the last synthesis. And this is true not just for our eyes, but for any information

receptor (and nearly all things are information receptors). Time never passes, it enters the synthesis, it becomes the synthesis (note however that everything doesn't enter the synthesis, there are losses).

Example: we observe by chance a hydrogen atom. This atom is the historical product of a synthesis of stages marked by the Big Bang, inflation, the separation of laws of interaction and many other events... We can retrace the broad outline of the history of the cosmos by studying, for example, the thermic vibration of hydrogen atoms. Another example: my car is made of metal. I detach an atom of iron, I observe it, it is the result of a long history lived in star X. I could discover the broad outline of this history, for a definite pressure was required, a precise temperature, a state of the environment, the presence of certain atoms, for this atom of iron to be created, find its way toward an exit, be sent far away, be attracted by a planet... An atom is a synthesis and if I study the synthesis, I don't have the whole history, but the broad outline (like all good syntheses, it's not about preserving everything, but only what's necessary for the identity in question to endure).

In the case of a tree, the synthesis is truly enormous. I could discover a large part of the history of the evolution of life, enumerate the problems solved and the problems unsolved, know the temperatures of the past, the history of diseases and many other events... The tree doesn't pass through time, it is made by time, so it is a synthesis of time.

We must not say: the past is no longer. We see only the past, nothing else. What is the past? It is the invisible flux of time become visible. We see it in the different syntheses that things are. What has no past is not visible, for without resonance and without thickness of time nothing is visible. What is saturated with time is what takes on the nature of the visible.

Reality is visible because time, rather than passing, constructs syntheses. We surf on waves of memories. Beneath our eyes: a landscape that is an enormous synthesis of syntheses. For example, at a depth of one meter the soil's biology alone assembles two or three billion years of history, a monster of complexity because it is a masterpiece of synthesis. This biology itself rests on a chemistry that reveals tens of billions of years of evolution. Obviously the evolution of molecules doesn't follow the same processes as biological evolution, but no matter, it is still a process where the present makes a synthesis of what precedes it. And beneath chemistry, there is atomic physics which summarizes an even more abyssal layer of time.

Receiving photons, receiving layers of information informs us about the thing itself, always delivers to us the latest available synthesis taking into consideration the means of transport (very often the speed of light). Complexification results from the fact that time doesn't pass but goes from one synthesis to another according to rather mysterious processes.

However, what physically comes to us psychological beings are waves of information which pour out their content bit by bit, influx by influx. Perception is also a process of synthesis which consists of reconstituting as well as possible the synthesis that is the thing itself. But this is not sufficient to make visible to us the Little Prince and the beauty of the world; in addition to this an image of reality must be organized, a face must be revealed.

The second mystery of visibility is that all the fluxes of information which arrive at an information receptor, our eye for example, form a simultaneous tissue. All the components of a landscape, and there are billions of them, arrive at our eye at the same time. Everything happens as if thousands of rays were converging toward a point (or several points). This point must fabricate a synthesis. It must filter and transform all this into a biochemical current, reconstruct the simultaneity of thousands of rays, make a three-dimensional image out of it... And all this must be done without there being a screen anywhere, a blackboard, a flat space (there is none of that in a brain or in any other natural receptor), but simply temporal processes whose characteristic is precisely not simultaneity, but on the contrary, succession. This is a miracle: to convert the successive into simultaneity, to transform time into space.

The magician is memory, which retains the information received long enough to produce an impression of simultaneity. There are thousands of forms of memory. The different electrochemical memories of our brain are only special memories arriving at the "summit" of thousands of memory processes (and nothing says that there are not memories higher than ours, much more inclusive than ours).

From the receptive point of view, an atom reacts to billions of informational waves (for example, gravitational waves), and adapts, vibrates, takes the proper place in the face of this mass of simultaneous information. In the numerous phenomena of self-organization, it is the molecules, the cells that react, dance and make choreographies in accord with an immense quantity of simultaneous information. Everything seems endowed with a memory for, without memory, time would be unable to bring about anything and the laws of physics, chemistry and biology wouldn't have the "time" to produce anything whatsoever.

Obviously, the simultaneities arriving do not represent simultaneous realities. What arrives from far away, for example, the reflections of the Moon, what arrives from very far away, for example the light of a star, and what arrives from very, very far, for example the light of a cluster of galaxies, arrive at the same time, but carry information on what has happened a somewhat or very long time ago. No matter! Every receptor (nearly all slightly complex reality is one, including the atoms), in its way seems endowed with a capacity to receive and adapt itself to an information field that arrives from everywhere simultaneously. A thing, it doesn't much matter which one, is a synthesis of the past, but it is also a synthesis of the immense radiation of information reaching it simultaneously at every moment. Everywhere and in every way, time is transformed into spatial synthesis. Time attaches the links of space. What we call real, the landscape there in front of us, is

the result of a strange resonance of the past and of a strange capture of "simultaneous" information resynthesized in space.

An information flux resembles a train heading toward us, but the engine at the head of it has on its front traces of the cars behind (this is the phenomenon of resonance) and of all the winds beside it. We never see the train from the side, there is no arrow of time, but the point coming toward us does in a way carry the past, like a face. In fact everything, shall we say, is found on the Little Prince's face, the whole of history from the beginning... And this synthesis reflects literally all the local and astronomical landscape surrounding us. And the miracle is that we are ahead of the train that we see arriving. In front of us is the tree that arrives with all the history of the cosmos.

By what miracle are we in front? Why is the very very actual, very very immediate present always here where I am and all the rest of the visible is declined in the past tense, even if it is only by a tiny fraction of a second... This miracle is the speed of light in the theory of relativity (a theory of visibility).

In total, the cosmos is a strange thing; one might say it is not a painting, but a painter who is his own canvas and who works by trial and error. We always see the final version, but an observer who took the time to enter the thickness of time would discover in the final version the creative process itself. However, this observer would never be able to separate the creative process from the reactive process. Time doesn't pass, but the synthesis can let rough drafts or even very beautiful forms disappear. In a synthesis, there is always some discarding. However, we can believe that the fruit is preserved.

One of the ways of synthesis is the transformation of history into knowledge. My legs know how to walk now, they don't have to repeat the historical process that led them to walking. A knowledge is a synthesis of memories. An atom knows how to behave, but this is also the result of a history. Because of this, a very detailed analysis of my legs might allow me to see again how I went about learning to walk. A very detailed analysis of the behavior of atoms in the right kind of accelerator instructs us about the history of the Big Bang.

So, what is space? There is here a tree that is like a strange train of history synthesized in the present moment. Beside it is grass, and each blade of grass is an individual history also. There are birds, each one is a synthesis... Each of these beings is a "summary report" of an impressive thickness of time. I am saturated with it. But during all the time that I am being saturated, there are lateral exchanges between these trains of history. Each thing is also the synthesis of a multitude of lateral interactions.

Physically, space is never an objective expanse between temporal trajectories that form real, actual things, but solely the totality of relations between these syntheses. In short, a strange "space" exists which is not expanse, but a relational construct which not only allows the cosmos to be perceptible even before it is perceived (to meet the conditions for perception) but more fundamentally, allows the cosmos to

exist (as relational space-time tissue). The word "exist" is taken in the stronger meaning of the term; if this tissue is not, nothing is. In short, physics really exists as a set of relations that "visibilize" reality through synthesis. Space is a synthesis of syntheses.

In this way (by individual and collective syntheses), the cosmos "sees" itself, reacts to itself, evolves in its own way, which we name "physics" when we are at certain scales of complexity, chemical at another scale of complexity, and biological at still another level. In its way, the cosmos is a physical organism in its most primitive syntheses, chemical in its later syntheses, biological in its latest syntheses, psychological in the syntheses it is achieving in some introspective animals.

CHAPTER 10 : The mystery of the future

But a synthesis is not just the "last" moment of a story (summarizing in itself the past that concerns it) and the last spatial synthesis of syntheses, it is also an attempt to fill the cracks in the future (the possibles as opposed to the impossibles). In fact, before the whole set of possible futures, the actual syntheses (the actual states of things) never leave any window empty, all the possibilities have to be tried. We have the impression that it has to do with exhausting the possibilities in such a way as to create new possibilities (as, for example, life was impossible on earth before a certain stage of planetary cooling). The organization of the virtual (the play of possibilities and impossibilities) structures the actual state of a thing. And so, at every moment of a thing, this thing is the synthesis of its past and also an "effect" of virtualities to come (not all the virtualities to come, but those that confront it immediately with, in addition, the strange instruction to never leave a window or a possible road totally unexplored.

It is an amazing mystery. If there are ten possible ways in front of a source of light, after a certain time it is impossible to find a way that hasn't been utilized. We must not say, then: it's obvious, for if a way had not been used, we would not have been able to know its existence. This interpretation has been shown to be false. We can detect a way before it is used (by probability waves). And it cannot happen that a way will not be used at all (in a sufficient time horizon).

The future comes to influence the present, structure it. But it is not a determination, it is a field of probabilities directed by a strange instruction: make use of all the future's ramifications, flow in all the river beds, leave no possibility unfulfilled, open the maximum number of possible futures in such a way as to end by coming out upon new possibilities that didn't exist before.

CHAPTER 11 : *The noosphere*

I can't imagine how it would be possible to define consciousness other than as the ability to see the past in a synthesis which takes futures into account in the hope of broadening the way of complexity (the multiplication of works) and of the possible. Those who say that consciousness presupposes an intention directed toward a goal, thus a violence capable of reducing the future to a will, have not encountered consciousness, but simply their will to control due to their fear of uncertainty. If the cosmos has a consciousness, it is more the consciousness of Mozart, of Victor Hugo, of Camus or Van Gogh than that of Caesar or Napoleon.

We can truly imagine that we are plunged into a gigantic brain, that we are a sort of neuron in this great brain, a neuron able to make its own syntheses. And this neuron asks itself: where are the total brain's syntheses? For we all long to see the Little Prince, or at least something as desirable and captivating. If not, why would visible things exist rather than nothing? What good would all this jumble of galaxies be if nothing rejoiced in its total beauty?

Consciousness emerges synthesis after synthesis from all the beings capable of reflection which inhabit it. Individual life has as its function seeing, forming a point of view, choosing, assigning value, selecting, measuring, making images, feelings, and experiences in regard to reality. The synthesis is reflected in all the aging face, in the wrinkles, the marks, the tightnesses, the scars. There are feelings, discoveries, personal gains such as courage, strength, wisdom; interindividual gains such as friendship, a happy marriage or partnership, collaboration, brother/sisterhood, responsibility... Above all there is the development of new creative powers through the assimilation of different languages, different mediums, different experiences... Next, the syntheses are unbottled, opened up, broadened, liberated, collected like seeds, like transportable, transplantable spores, redeployed for other experiences, other syntheses able to embrace much more widely. The syntheses are progressively united for a synthesis of syntheses.

I imagine, I dream: a great gathering, a grand totalling, a vast assembly. It is as if in the cosmic egg a fetus is gradually being formed... There has been endless talk about the type, the sex, and the character of the assembling being that is forming his/her/its identity straight from the cosmic psyche. To what species does this titan embryo belong? Does the soul of the cosmos resemble us or, on the contrary, is it we who are making it in our flesh and our bones?

For one who has accompanied, to its last feeble light, the consciousness of a little child, or of any other cherished person, and has felt the pulse of their vulnerability and dependence, the question is vital. For if the dying one is not taken in charge by a collector of breath, by a gatherer of life and of consciousness, this dying consciousness disappears. And if every consciousness disappears, this means that there is not for consciousness what there is for physics, for chemistry and for life: a totality that permits duration (life, like any sufficiently vast totality crosses time

while individual lives appear ephemeral). Consciousness would thus be the only reality in all the universe which could exist without being connected to a totality. It would not really be a reality at all. It would be as if atoms could live without the existence of physics, it would be as if a rabbit could run without the existence of life.

We can't imagine a physical phenomenon without a physical universe, we can't imagine a single blade of grass without life itself, nor can we imagine an individual consciousness without the substrate-consciousness (a society of consciousnesses in which the consciousnesses are connected in an adequate "relational space" able to protect the consciousness and broaden it). An atom without physics wouldn't last a second, for it is physics that causes it to be. A living being without life doesn't stand up either. Similarly a consciousness without the "substrate consciousness" doesn't hold up. An absolute solitude does not exist. Every level of reality necessarily disposes of its own sphere: physics, chemistry, biosphere, noosphere.

The noosphere is not just in the future. Like hope and brother/sisterhood, it is also the thing in which consciousness has always lived, as a physical phenomenon lives in physics, as a biological phenomenon lives in the biosphere. In the biosphere, the blade of grass is taken in charge of at its death not only by the other blades of grass, but by life itself in all its width and all its depth. Consciousness too cannot be taken in charge simply by individual consciousnesses; there is for it too an appropriate substrate with its mysterious laws. This reality is far from being an abstraction or a generalization; on the contrary, it is more concrete than the phenomena of consciousness. When science attempts to know physics, it does it through individual phenomena, but it is physics that is the reality, it is physics that interests it, it is physics that science speaks to us about. Thus the phenomena of consciousness we experience are the concern of the totalizing consciousness, the noosphere⁵⁵.

55 With the arrival of science, it is obviously not acceptable to bypass Ockham's razor (the first principle of scientific epistemology). Because of this, we have acquired the habit of thinking that the noosphere is nothing more than the biosphere, and that consciousness is nothing more than a biological effect. We suppose that biology alone will finally explain the phenomena of consciousness, just as we suppose that chemistry will end up explaining biology, as we suppose that physics will end up explaining chemistry. A result of method. And we must note that the method truly is excellent. It yields very good results. Outside of science, however, other routes of knowledge exist. The simple does not explain the complex that easily, especially when there are leaps like those that separate physics, chemistry, biology and consciousness. For each leap of complexity (physics, chemistry, biology, consciousness) there remain not only an immense number of unknowns, but a complete lack of theory. There isn't even a theory for understanding the passages across these gaps. However, in science we must always and despite everything support the minimal hypothesis. But what science discovers from the simplest to the most complex appears as a result of method. From the point of view of meaning, it is probably necessary to understand things in the opposite direction: from the most complex to the simplest.

We have too often tested it, and in every way; nothing can exist independently of the rest. Life depends on air, water, grass, light, but above all it depends on its own laws (the laws here are not abstractions, they are the living being itself in its biosphere). A consciousness lives to the degree that it is worth something in the eyes of other consciousnesses; it needs this value as much as life needs associations. Without bonds of attachment, the baby cannot live and the adult slowly dies. There, no doubt, is one of the noosphere's laws: I exist as long as the world is one I want to be attached to, and, since I exist, the world is one to which I want to be attached.

Here, attachment, as is the case in physics, in chemistry and in biology, is constituent of being, except that, in the case of consciousness the need for attachment is felt as a delay called "desire". We desire the Little Prince because he is there before he appears, at least enough for us to form in our brother/sisterhood his mobile image. And there are many other "laws" which connect individual consciousnesses and keep them in the substrate of the noosphere as living individuals remain in the substrate of the biosphere. Nothing in all the cosmos can live free of any connection. The noosphere is for consciousness what the biosphere is for life. The noosphere is at the same time egg and fetus.

When a being very dear to us dies, it is altogether normal to ask ourselves who the "loving" collector is, the gatherer, the totalizer of individual consciousnesses. We want to know in what noosphere those who leave the biosphere are gathered, in what encompassing egg they live, these introspective beings who decide to assume consciousness. This is a legitimate question.

CHAPTER 12 : The physics of being

At this stage of our thought, it seems important to us to summarize our thought (in fact, our synthesis of a multimillennial philosophical road) from other angles and in different words. For it will soon be necessary to arrive at action.

During the nineteenth and twentieth centuries, a number of intellectuals seemed to like the idea of man abandoned to an intolerable fate where every consciousness awakens only to confront its tragic end. They have been called "teachers of despair". This vision underlay the assertion of two principles: first, nothingness surrounds being: there is nothingness before and after being, and reality is a mixture of nothingness and being; secondly, consciousness is not being, but a distance with regard to being, not a distance in being, but a distance that isolates us (as subject) from the other side of reality (world of objects). Starting from these two assertions incompatible with the knowability of being and even with the existence of a coherent reality, these intellectuals decreed the end of all logic of being (which they will call being in itself), that is to say, the end of all

relation between logic and being, between thought and being. Which for them sounded the death knell for metaphysics, since metaphysics rests on the existence of a logic of being accessible to thought and on the first axiom of this logic: the non-existence of nothingness.

Why do they want to block the way to the road of thought, to its possibility of advancing toward a truth? In the name of what "truth" do they want to block the way to the search for truth? Perhaps despair is dear to the man who wants to test himself in the darkness of his cave. If I survive in despair, he says to himself, I demonstrate a poetic heroism that gives me back my lost dignity. The human being wanted no doubt to regain his dignity after centuries of submission to religions and more generally to the institutions of power. Which has not protected him against a new submission, universal this time, submission to the "forces of the market".

Sooner or later, however, we want to know, we want to reconquer our freedom on the road of a truth as unattainable as beauty, no doubt, but nonetheless as attractive. For the one who sits for a moment in front of a landscape, a starry sky, or the favorite grove of a couple of hummingbirds, only two things are obvious: what I see and what is there in front of me, I wouldn't have been able to invent, nor even to imagine; I participate in this since I can think and decide to move a finger and if I move a finger, the hummingbird reacts.

I am inside this, and this surpasses me considerably. I am part of this since I depend completely on what surrounds me even while I can change the destiny of the beings who surround me and vice-versa. A man is daydreaming as he crosses the street. I slam on the brakes. Too late, I was going too fast. He is now disabled for life, and I am gnawed by remorse. Between thought and reality, there is a relation that is supple and tight at the same time, partly voluntary, but to a great extent involuntary. By moving a finger on the steering wheel of my car, I can suddenly grasp this connection in all its gravity and its elasticity (the love of cars and other extensions of my bodily power comes from this). I feel then that I am in being and there is nothing outside it. It is no use to flee into my imagination, a simple mosquito brings me back to the facts of reality. I am immersed in the world, it can crush me or enchant me.

There is no way out, there is no flight possible, for all flight brings with it a very real series of consequences which affect the whole world and myself. The simple fact of going shopping to entertain myself can make the life of a child ten thousand kilometers away unbearable. Nothing is outside of being. I move and everything moves. I don't move and this makes a billionaire somewhere legitimate. Everything is in being, even the most abstract idea, for it has an impact on my behavior and on my suspension of behavior, and this acts on the environment and on me, for I am in the environment. And if I succeed in doing nothing, even to the point of dying from this, this too will change the world. I am installed in being as a cause and as an effect.

I am being in being and I participate in the life of being voluntarily and involuntarily, consciously and unconsciously. The distance I take in regard to being is not a distance in being, but simply the subject's cultural vision, and this vision acts on being. It is because he has not recognized this simple fact that modern man destroys his environment. All his actions and inactions have an effect, everything builds or destroys. There is no effect that stops where my good intention stops. The effect shakes the entire world, as proved by the greenhouse gases. The idea that our dials, our statistics and our instrument panels cover up our acts is a totally false idea.

In his very harsh film *Tout ce que tu possèdes* (All you possess), Bernard Émond puts into flesh and breath some of Stachura's especially sharp poems. The thesis is as ontological as it is moral and is summarized in three crucial propositions: you possess nothing, you are responsible for everything, unhappiness is a construction while happiness is the state of being itself. With his money the father has produced good and evil. The son rebels, refuses the monetary inheritance, but does he accept the inheritance of responsibility? Is he ready to assume responsibility for a single action which risks tarnishing a child, a woman, and a landscape? It won't be enough for him to take responsibility for the first act, the one which will create good and evil, he will have to take the whole thread, no, the whole chain and the linking of the chains, take and learn, step by step, to reduce the suffering created and increase the happiness that is never created, that is only exhumed by entering the world. The question then arises: how can a two-legged animal a bit detached from reality be toxic to being?

Everything in being modifies being, but the human being can modify it in a direction which seems to go against life, against its evolution, its diversification, its complexification. For example, everywhere in the world of living beings, the play of causes and effects stabilizes temperature, which permits life to take its full expansion. The human being destabilizes this equilibrium and puts in danger life's diversification, if not life itself. This might be no more than a fact, in the same way as, at times, a meteorite crashes into a planet. Except that we know that it is possible to do differently.

We, the conscious beings, feel and perceive the possibles. A formidable faculty. We suffer through the futures we make by acts of consciousness or acts of unconsciousness. But, we must recall, we do not choose the gaming table or the laws of the game. Even if we were to choose collective suicide to save the diversity of species, we know that sooner or later another primate will arrive at consciousness and will be facing the same challenge we are confronting in the name of nature.

Consciousness is in being. For us, it emerges after a long evolution. By this fact alone, it is part of the possibilities of being, more than that, it is part of the culmination of being. We can learn to come to terms with it, but we don't have the power to eliminate consciousness from life. We are not, we alone, the consciousness in being. If it doesn't reflect through us, it will do it through other beings.

CHAPTER 13 : *Participation*

Consciousness is being as intelligence is being. Being is not made up only of objects of consciousness nor of objects for intelligence. Being is at the same time subject and object. Being, real and concrete being, cannot exclude what acts on it. What acts on it cannot be outside it. Being has no outside. Put differently, there cannot be in it, on one side, absolutely passive materials and, on the other, absolutely active intelligible laws. By what miracle would absolutely passive materials obey laws!

Some have advanced the idea that there is something inherent in the very form of the materials (as, for example, a geometry) that would lead them to "react" according to laws we will discover. But then, we would have to imagine a colossal intelligence for this configuration to create beings as complex as a fly or a blade of grass. And then, how would this intelligence have been made in order to "act" on materials, sculpt them, give them a form? Quite simply, intelligence can't be on one side and materials on the other. This dualism of a pure mind and a pure matter has no logical future. We must admit that intelligence and materials are one and the same reality, at the same time always energy and information.

From a practical point of view, the jousting does not occur between the materials, static in principle, and laws of relation dynamic in principle; it takes place between energy-informations moving independently of us (the world), and energy-informations that respond at least partly to our will (the body). Obviously, it is a totally unequal contest, on one side the immensity of the universe, on the other, us, the "selves" scattered like shelled peas over a small blue planet. On one side, a universe that produces me, maintains me and on which I depend absolutely; on the other, the little territory which I can transform into a sterile desert or a glorious garden. Nevertheless, it clearly is about being that participates in being. One side as on the other, it is always being, something that includes energy and information.

The subject-object relation is not a relation between two substances, between two beings different in nature. This would constitute an unintelligible vision that would make experiencing knowledge impossible. Subject and object are simply the two views of consciousness. Moreover, we are accustomed to these two sides, for we know very well that we ourselves are at the same time an object of thought and of consciousness even while being subjects of thought and of consciousness. The active and the reactive, the transmitter and the receiver don't occupy two locations in reality, but are two ways of experiencing reality.

To be sure, what is in front of a subject appears to be an object for that subject. And the subject has no "proof" that the being in front of her or him is anything but a robot, a mechanism, simply a memory, a program or a routine. She, when

she sees herself as an object, cannot demonstrate that she is a subject. Between two subjects, there are only exchanges of information whose interiority is not accessible other than through the mystery of empathy. Nevertheless, the subject also knows that all who look at her or him from the outside see her or him as an object whose interiority remains inaccessible. This secret intimacy is the refuge she or he needs in order to become original as a participant. No one can enter my inner house by force, not even me. If I want to know myself, I will have to tame myself. This inviolable stronghold is a necessity. This is why every man and every woman must banish from themselves the idea of a god who sees inside them despite their wishes. Only after this can the subject agree to open certain corners of his or her inner abyss.

But this secret life concerns only the subject. As object, the human being is extremely vulnerable; her body can be raped, his bones can be crushed. He or she must come to terms with others in order to ensure his or her own survival. As soon as the subject acts, he or she experiences the fact that he or she depends as much on others as others depend on her or him. She or he realizes that, in the concreteness of her or his life, he or she is subject-object among subject-objects.

Empathy lightly touches the intimacy of the other. It alone can guide me toward the impenetrable subjects which surround me. Empathy with a mountain is more risky and mysterious than empathy with a paralyzed and aphasic grandmother, but it is not illegitimate, it is simply taboo in societies that call themselves modern. It is part of the daily experience of the civilizations of participation⁵⁶ (what used to be called "primitive" civilizations). Their logic is the following: We are of being in being, of water in water, of life in life, one gaze in a multitude of gazes, an intelligence in an intelligence, a subject-object in a multitude of subject-objects, a part in a whole which is of the same nature as the whole. This logic, still viewed by many as primitive, today appears more compatible with our science than the vision Descartes had of science.

If we agree to enter into this logic, we understand that total being has found the means to divide itself in such a way as to be able to act on itself starting from several "alter-egos", several "microcosms", several subjects. It has altered itself inside itself, it has produced otherness in itself, difference, not difference in nature (we all have the nature of being), but difference of points of view, points of action, points of transformation, It created participation. It didn't shut itself up in an omnipotence that leaves only powerlessness and submission to the parts. Between the whole and the parts, there isn't a relation where the whole defines the parts by itself, nor is there a relation where the parts alone form the whole; on the contrary, between the whole and the parts, there are creative, active and effective relations in both directions.

⁵⁶ It was Lévy-Bruhl who, I believe, was the first to name these peoples of participation because they see themselves as partaking of life as much as they participate in life. See Jean Przulski, *La participation* (Participation), Paris, PUF, 1940.

We could talk for a very long time about the wretchedness of totalitarianism where the whole alone defines the parts (an omnipotent god, a tyrannical State, a totalitarian law of the market...). We could also enumerate the evils and aberrations of a philosophy where individuals define the totality by themselves (conservative liberalism, a democracy that excludes nature...). Totalitarianism (the idea that individuals are the result of the whole) and its opposite (the idea that totalities are only the result of individuals) are two dead-ends as indefensible logically as politically and morally. The hypothesis of a relation of participation and reciprocity between the whole and the parts is far more mordant and exciting. If there is something that deserves the name of consciousness, it is the perception that being remains "one" in its relation of otherness with its components, that it is plunged into the risk of otherness, that it is participated in and that we live from this participation.

We wanted to show that the unique characteristic of consciousness is not to separate us from real and concrete being, but to establish us in it for better or for worse. Consciousness is not there to compress us upon ourselves, to separate us from the rest of the world, set us apart, make us strangers in an unconscious world. On the contrary, it reveals to us the immensity of the real of which we are only one particle, not a particle crushed by an omnipotent whole, but a particle sustained by the whole, called to live within it the incredible mystery of objects that always are subjects, that is to say, realities that must prove themselves creative, and this in their own eyes as in the eyes of others. We are, then, possible being, as all that surrounds us is possible being. Everything is called to participate in the development of all the possibilities of being and it is through and in this participation that we build ourselves as a being.

CHAPTER 14 : Dialectic of presence

We see trees and mountains, towns and fields, a palette of colors that surpass our eyes' capacity, an inventory of forms that go well beyond the visible, and each thing depends on all things in a fabric of physical and chemical relations where nothing can be isolated. This supposes a common foundation capable of taking all sorts of ways of being, from stone to tamarack. We find ourselves with something which cannot be just anything (all things must respect the laws of physics, of chemistry, of biology, of intelligence and of consciousness), but any possible being (a real possibility is necessary, however). For this reason, the foundation of being appears "undefined", "undetermined". It doesn't, to be sure, have the determination of granite or of jasmine, but it grapples with the mathematical necessities of interdependence...

There is a strange rationality there, a strange necessity, the one that allows being to exist. For in order to exist, being must accept conditions of coherence. This is the reason why the life of being is dialectical, a dynamic tension between poles

such as: infinite-finite, activity-receptivity, actuality-potentiality... Therefore, being is first of all "intelligent", in the sense that it is forced to respect a logic conducive to existence. Being cannot be simply a will that could be just anything, for there is in just anything forms of being incompatible with existence. For example, being could not be simply infinite. It could not be simply finite either. It could not be simply static. It could not be a movement of a movement of a movement... ad infinitum. It could not be divisible into two absolutely different natures. It is sentenced to, and in fact liberated by, an internal dialectic, a physics in its constitution that obliges it to keep apparently opposite poles together.

Logic takes root in necessities bound to existence. In all the pairs of real opposites (finite-infinite, actual-potential, active-receptive, light-darkness...) there is one that is the negation of the other (and not the reverse): for example, the finite is the limitation of the infinite, the potential supplies the actual, the receptive depends on the active, darkness is what permits light to travel at a constant speed... We can't reverse the poles, for they are not symmetrical. One of the terms is original in relation to the other. One is an affirmation, a constituent of being, while the other is a necessary condition for existence (for example, without finiteness, the infinite cannot concretely exist). To exist is to participate in one's own existence while coming to terms with the necessities of existence.

There is more: in a dialectical contradiction, the affirmation of the first pole (for example, the infinite) is understood in two different degrees: in its most fundamental form, it envelops both terms of the pair, it is inclusive of itself and of its opposite. For example, the Infinite (we should perhaps say the absolute here) encompasses the infinite (defined as absence of limitation) and the finite (defined as a determination permitting the infinite to take a precise form). In its second form, it is the infinite pole by opposition to the finite pole. As such, it is exclusive.

The same for the pair of activity and receptivity: receptivity is second, but it is only so through relation to activity, with which it forms a pair. Both of them, activity and receptivity, are subordinated to the pure and first act.

If we wanted to generalize, we could say that a Presence exists which is concretely present to the degree that it is also absent. For in the state of a presence to self that would be absolute alone (an absolute exclusive rather than inclusive), there would be no consciousness of the presence. The primordial Presence distinguishes itself within itself, shares itself, in the dialectic of presence and absence.

In short, being can exist only in a relation to self defined by logic. This logical relation to self subsequently defines physics. The word "logic" does not refer here to what we know about logic, but to all the known and unknown foundation that permits a reality to be thinkable and to exist. This is why we could say that physics is the logic of being such as it manifests itself to us. A thing must be "intelligible and thinkable" in order to exist.

The cosmos could doubtless take a different form, but it couldn't be just any difference; it couldn't be incoherent. When we look at a tree, a mountain, a hummingbird, we have before us the spectacle of a logic of being that cannot fail. Obviously, we are the ones who form the representation, we who see the hummingbird which is, for its part, an infinitely complex totality of relations between energy-informations. Nonetheless, we don't form our representation starting from nothing, there is shared being, being in relation with self which produces physics, chemistry, life, intelligence, consciousness.

If you have followed me this far, you have entered into what is considered to be the greatest heresy of modern times, so great that it has been radically banished from modernity; it barely scrapes by on the margins! Modernity, in its classical sense, is: "Me, I am, and all the things around me are only phenomena and objects with no interiority. The cosmos is only an object of my thought, an obviously exploitable object."

Now, I say this, and I do it in the name of the (presumably) defunct metaphysical tradition: the cosmos before us, which envelops us and gave us life, is not less logical, less intelligent and less conscious than we are, it is more so. We are intelligences which participate more or less intelligently and more or less consciously in a work which is extraordinarily alive, intelligent and conscious, not in our way, fortunately, but in a way that is beyond us. A philosophy of participation could be the foundation for ecology.

FIFTH PART : The practices of consciousness

Throughout this reading we have postponed a question increasingly difficult to silence: what do we do now? Action, our obsession, our ancient Roman myth. Perhaps this question hides another a little more dangerous: what has action done to us? That of our parents, of our schools, of our governments, of industry, of commerce... Urban and commercial feverishness. Blindly forging ahead.

When I observe my children, who are now almost forty, I realize that not much of my action has stayed with them. And this makes me happy: I haven't done too much damage. However, I am here today, totally committed to my farm, cultivating vegetables in a more or less chaotic community of young adults, at an age when I ought to be retired. And this produces an effect on my children that is no doubt greater than that of my educational impulses back then.

It seems that our attitude in life, inasmuch as it is coherent and committed, gets better results than our actions. That the latter produce more effects off the target than on it. We are obsessed by the trajectory of the arrow of our action. Yet while we are positioning ourselves to aim well, our feet are pressing into the ground an appleseed which, in a few years, will become the tree that will give its fruit to an entire village. I remember an afternoon when my old father had lain down on the couch. He was sleeping like a baby in its mother's arms. That day he gave me my greatest inheritance. This image acted on me more than any word. By our least intentional movements, we are doing more perhaps than by our hardest work!

Then what is an action? It is very rarely an act that produces a result. Rather, it has to do with a cluster of sequences that have been set into motion at a more or less identifiable moment between the dream and the hand, and which opens like the boughs of a tree. Rarely has the hand itself done the act, sometimes it has simply signed a contract, sometimes it has merely accompanied the lips that spoke, or held the mobile phone that transmitted a message... But no matter. Later, the cluster is reduced to a single branch, a smaller branch, a single leaf. There, more or less, is what remains of the hoped-for result. All the rest of it has moved the world without anyone being able to connect it to the original intention.

There are several classes of actions: 1) the chain of actions that follow the intention and produce a result that can be measured by the intention itself: I wanted to build a house, and there it is, it shelters me; 2) the chain of effects that result from the principal trajectory: the wastes, the gases, the improvement of my physical condition (I have worked at it), the trees cut down, a man injured at the

construction site... 3) the series of actions resulting from the thing itself: the psychological and social effect of the architecture of the house on those who see it, those who come to visit it, the effect of the color, the effect of the shadow, the effect on the landscape...; 4) the diffuse action on the birds, the winds, the rodents, the insects, the more distant futures, when the house will be a ruin and will have to be demolished... 5) the collateral effects, for example if, while moving the earth, we bring to light an archeological object that will change our vision of the past, if we free a rare seed that will shower its benefits over all the future ecosystem, if someone suffers a severe concussion from ice coming off the roof (the architect's negligence) and the future of his children is reoriented in a totally different direction...

With a little imagination, we could lengthen the list of classes of chains of actions. Intentional action now looks like a tiny thread in a catalogue of effects which outdo by far the result measured by intention. If action were compelled to be the object of a calculation, it would require all the computers in the world to measure the influence and the effect of the building of a small house isolated in the country. So how can we make sense of it? How can we dare? How can we appropriate one effect in the multitude of events? How can we distribute the responsibilities, if there happen to be any?

What do we do now?

A question able to freeze a conscious being in a monastery in the far reaches of the desert.

I believe that, in order to change the world for the better, that is, to render it more viable, more creative of life, of diversity, of complexity, *it is preferable to know how to be acted upon rather than to know how to act*. We are swimming in chains of actions, events, effects, just like fish, and we can direct ourselves by small movements of our fins... But in what direction?

Like all the beings of the earth, the human being lives in currents of fluids that carry her or him along (water, air, food, currents of thought, currents of emotion, currents of actions, social currents, biological currents, spiritual currents...). Outside of these fluids, there is nothing except for abstractions, no people, no animals, no plants, not even a single thing. By the force of these fluids, each individual carries upheavals along with her or himself, sometimes violent, sometimes promising, sometimes destructive. If we believe that we are alone, isolated or able to be isolated like a decision written on a calendar, it is because we are swept along by the individualism of the day and are going down - without knowing it - a river of fashion.

In the water of things, there are two great types of currents: life and death. On one side, all things flow towards drift and entropy, toward a lessening of complexity and of information. Whether we like it or not, we are part of this movement. As I write these words, I am wearing out the chair I am sitting on, I am exhaling gases that fortunately are recyclable by the plants in the house, I need

electric heat that comes from an artificial inundation, I am burning the calories from my breakfast, I am wearing out my body. I am dissipating energy, I am reducing the information in each cubic centimeter of my body and of my environment. I am participating in the entropic river that tends toward death. I am acted upon by a river headed toward the valley of tears. And the stream that carries me carries all away.

But there is also, on another side, a movement of creation, of adaptation, of recovery, of new beginnings and of sudden new developments. Here and there children are made, a painter throws colors on a canvas and the result is very moving, an old man whispers in a child's ear a secret that widens his view... On the negentropy side, the list is not so easy to draw up, however. For everything can be turned over into its opposite. Thus, to make a child is not that complicated, but if it is abandoned or sexually abused, we are cultivating potentially destructive impulses in that child. To make a work of art is not sufficient; some works have driven numerous persons to suicide. Creating isn't done that easily. To tumble down with death is easier.

We should take note of this: plowing downhill is much easier than plowing uphill. A million supposed creations profit from the fact that a single great work (which isn't always a work of art) has plowed toward the heights. One ascent for a million descents is probably the proportion! And we must take note of it: the prizes and the praises of the public almost always go to those who descend, while those who, with pain and difficulty, bring the sun back up on their shoulders remain, to their great good fortune, unknown. It may be said that my mathematics don't work. They are, on the contrary, life itself: a lot of entropy for a single viable and creative invention.

When we really think about it, it's not a question of effort, for the ascending currents are as powerful (and perhaps more so) than the descending currents, but we don't get hold of them in the same way. To descend, to veil the light is all that is needed, to let yourself slide without seeing anything. To climb back up with the sun, we must endure a cold look at ourselves and at the world. There, it is light advancing on all it shines on; what clashes with it, what produces a discordant effect, what is out of place is denounced, then loved, then restored... Three acts peculiar to consciousness, indispensable and inseparable.

We cannot participate in the ascent without cleaning our consciousness, removing its thickest fogs. Don't misunderstand me, I am not speaking here of intentional consciousness directed toward goals, the thin thread of intentional action, I am speaking of a state of clarity that reveals the value of things and of life, that is passionate about birth, the ascent of consciousness and the ascent of the arts, something that struggles against death. And if this ascent did not exist, death would have nothing to make die, and mockery would have nothing to belittle, and cynicism would bite into nothingness, and scepticism would chew its own teeth.

This is the way it is. Whatever participates in death has no need to participate in consciousness; the descent is made in abandoning everyday actions to the social

forces of ease, to the likes and dislikes of the day. But whatever participates in life participates in consciousness also and this supposes the birth of a self capable of grasping what life needs, the real needs of the world in which we all live. Knowing how to be acted upon by consciousness is thus much more important than knowing how to act in order to reach any goal, for who has taken the time to check whether his goal, apparently so circumscribed, isn't one of the acts of death precipitated by the erosion of cultures and the anomie of values? And who can know what her or his action will produce?

From the first line of this book, we were in action. Consciousness was working on us. We let ourselves be worked on by it. If we put a little of ourselves into it, it takes hold of us and pins us to the ground by the strength of its rays. Suddenly, misery appears. It is immense. Then, those who endure it are loved. Then roots grow, the arms of trees stretch out, water goes back toward the sky, and misery begins to be transformed... Alas, the current of death sweeps everything away in an avalanche of overexploitation with enormous financial, industrial and military instruments. The forces seem disproportionate. Life struggles against mountains of darkness.

There are other points of view, however. At the right altitude, the planet is still green and blue for the most part, and life has more than a billion years of experience with its offspring. It seems that it wants our conscious participation, at the risk of having to drown us in the consequences of our actions if necessary. The good thing is that the descent and ascent create in their friction a suffering that is not at all that easy to drug completely. At the slightest raising of an eyelid, we start to feel to what point we suffer from a chronic lack of light, of truth, of beauty, of justice. Then an inner compression takes place. And the seed of a book - a very old book, perhaps, for example a bit of the Gospel, a sentence of Buddha, an Amerindian story - begins to sprout. We'll see what comes of it, but let's bet that it will be alive.

The beginning is minuscule, and it is what has done everything. As for death, it sculpts the slopes of the ascension of this beginning to give it a wider and more encompassing form.

As for the minuscule intentional line that goes from the dream to its realization, from the blueprint toward the building, from the project toward the result, is having good intentions enough? Good intentions have probably killed more people, destroyed more species, shaved more mountains, than bad ones, for with a bad intention we hesitate as we advance, while with a good one, we rush on with a joyful heart, without the slightest doubt, making use of all our strengths and all our technologies.

There is no reason written in heaven prescribing what has to be done. The answer does not precede the question. Questions alone succeed in creating answers, and only good questions can devise good answers. And this takes time. In short, our thought is always slower than our action. We have always acted before thinking. Our thoughts are almost always reflections, and therefore reactions. In fact we

have been acted upon and this has not produced the happiness we wanted, so we reflect, sometimes at least, but with a serious delay. We try to readjust... Alas! Sending the smoke back into the chimney is no easy task.

Every day, from minute to minute, we follow a path, and on this path a fork sometimes appears. Now there is no ready-made key to open the "right" door. From then on it is attention that is of much more use to us than intention. It becomes like a magnetized needle on a pivot, it is sensitive to the magnetic fluid, it indicates the direction to take. A magnetic fluid precedes us. Birds arrive at the nesting place, why not us? Good attention is better than good intention.

But how do I know that religion or economics (or both) have not made me totally insane? Insanity is the disconnection of actions from their consequences. Attention does not consist of following a magnetic fluid, but of following the experience of our immersion in concrete life in the direction of the creative fluid. The migrating bird adapts itself to the winds, to the seas, to the obstacles, to itself, to its own social life, but in the direction of the place of its regeneration.

Just as there are two great movements, life and death, the ascent toward complex solidarities or the descent toward individualization and fragmentation, there are two dimensions of time: causality and hope. Causality departs from the complex, discharges information, and ends up in smoke when someone puts a log in a furnace or gas in an automobile. Hope glimpses a beauty that must be brought into the world, a vision of the future that flows toward the past like a dream toward its realization. The first sweeps us away, the second calls for our collaboration: we must arrange our body so that it follows the ascending current.

If I succeed in correctly reading the time of life going from the future toward the past, if I succeed in extricating what ascends from what descends, I can enter into a prophetic consciousness. I then participate in life in order to participate with it in its ascent. If not, even when I think I am advancing, I am causality's prisoner. I think I am dreaming, but I have only been carried off by an opinion. My goal and my good intentions were only the effect of advertising, of an ideological cause, an effect of fashion. Was I dreaming of a house? No, I was carried off in the dream of the banker who wanted to subjugate me through debt.

There is no prophetic consciousness without autonomy. And autonomy is the opposite of the illusion of an isolation and an individualism of will: I want, I do, what a mistake! "No one is an island." Autonomy is the return to dependence in regard to life rather than the illusion of a mean and conquering self. The road toward life is full of pitfalls. They were right to beware of all the prophets; they have nearly always led us to misfortune. The world is full of false prophets. It is while trembling that I advance, that I peel my soul peel after peel, and when I perceive that I have a rise of light like the rise of milk of a nursing mother, I look, and notice all the cleaning I still have to do in myself. Nevertheless, when my hand grabs hold of a shovel, it is with strength, and when it sharpens a pencil, the pencil is sharp.

In this part of our study we will try to understand action and orient ourselves in our decisions.

CHAPTER 1 : *Building*

The Hâtée River flows into the sea, making a meander which exposes a peninsula. The place is wonderful. My wife and I go there often. The idea took form in my mind of building a small red cottage there. In April I drew up the plan. In May all the parts were constructed. When the rain stops, the cottage will be raised. Then we will go, and after that we will have memories. The cottage will wear out, and we will die. Lovers will sit down on the ruins of our little refuge and discuss their plans...

So life goes, from the future toward the past. The future whispers before us what must become the past. More concretely: possibilities ignite desires and desires awaken possibilities. On the flood of time: a decision. In the relation of bodies and materials, a connection is established. A form and colors are given. The form is subject to entropy. Without renewed effort, the form wears out. The landscape reasserts itself. But the memories remain.

The future of the future is obviously the past. We fabricate the past, more precisely, memory. We are transformers of possibilities, we make memory with the possible. Glued to the present, we grasp some of its possibilities in order to realize them, to display them among things (physical memory) and to collect them along with our memories (psychological memory). Our realizations, small and great, shine forth in the landscape, collective properties, and in our mind, collective property also (the noosphere).

Time doesn't pass and we don't pass in time. We are installed in a creative source which neither passes nor perishes, which in itself is not subject to time, is not in time, but transforms certain potentials through its acts. The place of the sowing is an eternal here and now. Time is inherent in creative development, the act of a gushing forth, of a never symmetrical shower where the future is not an abstraction but a set of semi-defined potentialities and the past is not just in our mind, but continues to live in its manner in physical, chemical, biological and psychological memories (a tree, a mountain, a sun are memories). When we speak of potentialities, it is always about a relation between a desire and a reality: for example, the bird's desire for shelter and the reality of construction materials rolling in the wind.

Despite the radical non-symmetry between them, the future includes the past: the twigs that are the potential nest are also the wind's past. For example, a tree, which is a memory, is a wonderful recording of evolution (a synthesis) and at the same time it furnishes possible houses for the future of beavers. The potentiality

is not just a fact, however, like a twig or a tree, it is above all a relation, it requires a desire, an instinct, or at least a meeting of two energy sources, for example: the phenomenon "tree" and the will "house". The tree won't make the future by itself, it needs a bird, a beaver or a human being, it needs a meeting, a crossing. The future of the past is the future, but the future of the future is the past. The tree becomes house. The house is no longer anything but a memory. As in a fountain, the past falls back into the world of facts, the world of material memories from whence it will rise again in another form thanks to the crossings of creative energies.

What distinguishes future and past is not their nature -- both are concrete, at the same time physical and formal, at the same time relation and the set of facts. The difference is not in the phenomena, but in consciousness which breaks the symmetry, which regards the tree sometimes as a memory, sometimes as a set of possibilities. Without a creative act, there is no rupture of symmetry, the soup is only shaken up, it is not transformed. Everything returns to the same in the whirlwind of a moment which, seen from a good distance, is only movement. However, we mustn't believe that we are alone in the cosmos in being creative. Nature is creative before us and it "reenvelops" all our creations.

As the creation of time is done from the future toward the past and not the reverse, the subjective takes priority over the objective. In the world of action, it is the subject who makes the object and not the the reverse. If I rip freedom out of the world, all at once I see time go from the past toward the future as a chain of cause and determined effects. Yet freedom is there, in me and outside of me; everything is a creator and therefore time goes from the future to the past.

The cosmos itself goes from the future toward the past. But since I don't have access to its subjectivity (except through empathy), I am more or less condemned to perceive it as going from the past to the future. It is an effect of "objectivity", a "phenomenological" effect. We sometimes have this impression when we encounter an autistic child apparently completely deaf and mute, about whom we can't even know if he has intentions. We see him too going from the past to the future on a wave of causality that psychiatry tries to define. To us, nature appears autistic. But it is much more likely a creative act. This creative act, like all creative acts, spreads and is distributed everywhere, but in proportions completely outside our norms.

The being of nature is participative. Nature produced me (me among many others). I am a gaze that can see the tree sometimes as a fact, sometimes as a potentiality, but I can also see the tree as establishing a relation between light and the earth, I can see it as a creator who accomplishes a relation from which it engenders itself. Perhaps it is autistic, perhaps it possesses a language too direct for me, perhaps it is too finely connected to the totality of a planet too great for me; only with great difficulty do I grasp its interiority, or perhaps do not perceive it at all, but it's not fated that a poetic force can't unite us!

Yes! It is also possible that the tree is not by itself a conscious totality. Perhaps it is the first that is a totality, or even the biosphere. Bacteria, for example, present very mechanical individual behaviors but also very adaptive collective behaviors. A hive is perhaps more of a totality than a bee. But if there is a totality, there must be a participating subject-object or, if you like, an intelligence-consciousness. It is also possible to believe that a non-human consciousness is inaccessible to us. Perhaps, but absolutely inaccessible, this appears impossible, this would suppose an absolute tearing up of the fabric of being. However it may be regarding the tree, the forest or even the biosphere, it is certain that the first totality, the totality of totalities, can't be less alive, less intelligent and less conscious than the poor animals we are. The brain is more intelligent than the neuron, but the neuron has access to the brain. Consciousness has access to an overarching consciousness.

For time to exist, creation is necessary. And from the point of view of creation, time goes from the future to the past. I can say with certainty that my past has caused me, but all it has caused is a set of potentialities I can use to build myself or destroy myself. Yes, I came out of childhood with happy and unhappy memories that now are equal in the forest of my possibilities. And it is I, consciousness, who will a home or a cemetery out of this forest. Because I have experienced a certain trauma, I can accomplish a certain act of love or a certain act of despair. Good and evil are not part of the past, which is memory, a set of equal facts. Good and evil are part of the present, of what I will make out of the physical and cultural memories of my environment, of my body, of my mind. The past gives stones to the mason. And for the mason who knows how to combine them harmoniously, all the stones are beautiful.

If consciousness and freedom don't break the symmetry between the past and the future, there is nothing more than movement, displacement, linear causality. But nothing returns to the same, this is what time is. The second vintage is always more permeated with creative force than the first. A tree is more complex than an amoeba, and a horse more complex than a plant, and an act of love torn out of a memory of hate is much more rich than an act of vengeance (because more creative).

CHAPTER 2 : The workshop of creation

We are plunged into a workshop of creation. Before us are trees, fields, colors... All that is needed to make something. In us, desire, hope, intelligence, all that is needed to will something.

If there is creation, there really is an adding of information. This means that the trees I will transform into lumber and the lumber I will transform into a house are connected to the entire canvas of the landscape and the biosphere. I make a house, I transform the whole landscape. Everything is connected before, during, and after. If it really is a creation, the landscape will be more complex, more alive, more desirable, more stimulating, more inspiring after than before and will be able

to engender more creation by more creators. If it is an act of destruction, everything is worse after than before, everything is closer to smoke and metal than to garden and school.

In the cosmos and over billions of years, there is a passage from unity to multiplicity, from the undefined to the better defined, from indifference to desirability. Time is a fabric knitted with needles opposite each other but working together: the infinite, the definite; the one, the multiple; the active, the receptive... To create is to connect opposites.

The universe is a workshop of creation for other reasons too: if I lost track of all my creations, I couldn't learn, do better, add desirability. If, on the contrary, I was too closely joined to my first creations, I could after that only be subject to them, I couldn't learn. No, I can't completely escape my creations but I'm not absolutely their prisoner. The past remains only in memory, it can't impose itself, it only requires us to come to terms with it. All memory is subject to entropic wearing out. The creative source does not wear out.

In the cosmos, only syntheses of memory survive (things, plants, animals, all the visible...). But there is an elasticity between what has been done and what is to be done, an elasticity such that, on the one hand, I would do well to pay attention to what I do, I will suffer the consequences; but on the other hand, I can free myself from my past by using its stones to make the highways of my future. This is obviously not a rupture, but a utilization of the past by my creative abilities.

The cosmos is a creator who works with basic materials: energy-information in conformity with intelligible and mathematical laws. The secondary consciousnesses make use of already informed, already complex materials: stone, wood, pigments... But we are all going from the future toward the past. We are manufacturers of the past as if our goal consisted of broadening, complexifying, adding, deepening, shading a fabric of ever more visible souvenirs in the memories of light, of sediments and of neurons. We manufacture memory on the scale of the planets, we are living materially in the works of another time. A city is a magma of vestiges running toward ruin, but dreams emerge unceasingly from the holes left by the demolition crew.

In making the cosmic fabric, the first creator creates itself, gradually discovers its identity. Participants emerge from this first creation and become involved in the transformation. They make themselves by participating in collective history which is never only that of human beings, but of all of nature passing through this history and sharing its successes and hard knocks. They discover themselves as persons in their personal creation, they discover themselves as society in their common creation, they discover themselves as elements of nature in the ecological history of the earth.

We are plunged into a workshop of collective creation with several stories. Physics takes care of the first levels of complexity. Chemistry, the second. Biology, the third. Psychology and sociology, the fourth. Spirituality and consciousness, the

fifth. Levels that obviously fit inside each other. A hazardous workshop, yet not all that hazardous, for the past is firmly installed in its light, in its elements, in its evolution, in its syntheses. We learn or suffer, for we never get out of our memories, we inhabit them, we settle in them, and we must come to terms with the consequences of our individual and collective acts. It is not an imprisonment, for memories are also the materials for our future works.

To let the past make the future is an act, to be sure, but it is an act of fatigue and even sometimes of cowardice. We are always responsible, therefore we never have the right to let guilt create the action. Guilt consists precisely of abandoning our responsibilities and letting the past guide the future (as in the case of vengeance against oneself projected on others: war).

The battle for life is not primarily a matter of competition, it is principally a struggle against and with memories. There is a big entropic eraser in every memory (except that of pure light). Memories always have some hardness: a mountain range, a bridge, a city, highways, habits, laws, scars. Landscape is memory. We are in a fabric of spatialized memories, that is to say, the most immediate is close to us and the most distant in time is also the most distant in space.

In transforming future into past, the possible into memory, we manufacture space: the more distant the memories, the older they are, memories close to the birth of our cosmos... But space has obviously made us first, and for it, we are the memory.

Our bodies are strange composites. Beings of physics, of chemistry, of biology, they are remarkable syntheses. The entire cosmos is brought together in a human body. We contain all materials in realized form and in possible form. And we have participated in the work of the body. Through his work and time's work, the peasant has made a peasant's hand. The baker made his arms, baker's arms. The dancer has made of his body an image of his soul. And then, all this wears out, cracks, fractures, comes undone as if to free us. For an artist confined in the same studio with the same tools would end up losing her or his creative forces. It is preferable to travel, to take up other tools, to live other experiences, to begin oneself starting from other points of departure. This is perhaps what death is.

If I had wanted to think up the largest, the most powerful, the most incredible of workshops of creation, would I have done any better than the universe that is here, illuminated by stars and houses as diverse as the colors of deep sea fishes? The most fascinating thing is that I recognize this. As if I were in it? As if I had created time myself? How might I have allowed the infinite creativity to be fully manifested without first creating a workshop of creation that is also a creative soul? So I have participated in the making of the cosmos as the baby participates in the creation of its mother (in fact, of the maternity of its mother). The infant looks at its mother's loving face and says: "I want myself." I look at the sparkling firmament and say: "I want myself."

How to pass from infinite creativity to a multitude of definite creations without losing my inspiration, without exhausting myself as an artist? How to pass from unity to multiplicity without losing my unity? How to learn from self while freeing oneself from self? How to transform oneself into potentiality without losing one's actuality and fertility? Answer: time. Through time, I keep my unity in the present and I multiply myself in memories. I carry along with myself the beginning that I am, but I free myself from my past without losing responsibility for it thanks to the entropic memories of the cosmos. Before me, possibilities arise out of pure logic and pure mathematics. They combine with the possibilities created by the memories themselves to form hybrid works (blending the potential future and the actual past as is the case in chemistry and in biology).

What is consciousness? It is what makes time. The tension between, on the one hand, the strange logic of the constituents of being and, on the other hand, the act of creating oneself while sharing in the creation. Consciousness creates memory in all its fabrics, that is to say it forms its relation to memory as a relation that is serious and responsible, but never fatal and insurmountable. It engages in a battle in order to be able to extricate itself from the indefinite.

Seen from the front, consciousness is being itself as it perceives the logical and mathematical conditions of its existence, folds these conditions back into structures, weaves possibles that are always composites of logic (first possibilities) and of facts (memory). It is, for example, the birth of protons. Consciousness thus remains eternally contemporaneous with being, always in its origin, in its pure and first act, and yet, without ever leaving its place as primary creator, it enters the cinema of time, runs through all possibilities, transforms them, makes them and assumes them. Seen from the front, consciousness is the act of the creation of time, but seen from behind, it is the act of the "consumption" of time. For what does it pursue in all its creations and its participations? Nothing, if not the knowledge of self as it recovers itself in a great feeling of self, a great perception of self, a great conception of self. It creates itself in its creations, it grasps itself in its creations, but also, and above all, it broadens and deepens itself as creative identity.

In order to never fall back on itself, it developed "participative being". Thus it surprises itself. And it is at this level that it has succeeded in resolving the greatest of paradoxes: to manage to be, every day, greater than self, and this even in starting from the absolute. It has succeeded in transforming the prohibition of nothingness that gave it the absolute of being into something that is infinitely more, more than the given absolute, more than an adventure that can be finished. It has succeeded in transforming the prohibition of nothingness into an adventure of unfinishable creation: an eternal surpassing of self (this is not a challenge, it is simply the essence of being and of joy).

CHAPTER 3 : The wisdom of happiness

We must now transform our vision of the world into ecological actions. And the first act of the ecology of consciousness is to gradually and not without effort establish ourselves in happiness.

There is a young birch in front of my window. Fantastic! There's the proof I'm looking for. I wanted, I wanted... But what did I want? Ah! yes, I wanted a world without violence, a quiet house, a loving wife, cheerful children, a party for my fortieth birthday and lots of people to weep at my burial... But I wanted this because the world had been given to me. I wanted it because air filled my lungs, because water was right at hand, because breakfast was there and only had to be cooked. If I hadn't had that, I wouldn't have wanted something else. And because I wanted something else, I didn't see the birch budding in front of my window. Now, I want what is, myself included.

This birch is, with the sun that is the extension of its momentum, with the earth that is the continuation of its roots, with the wind whose movement it reflects, with all that is connected to it and extends as far as the eye can see, it is all that makes me will and desire. I had forgotten that I was the prolongation of its vegetable nature, that I am at the end of one of its branches... And this morning, it waves in the breeze. It shines. Physically, everything converges toward it. Everything gives it life, and it and everything connected to it gives me life, forms my will, my senses, my perception. I am what it possesses, what it wants. I am its mirror. My eyes, my feelings, my heart, all that I am is what it wanted. "Look at me," it protested, "I am all you need since you are all I need."

In fact, I had sometimes tried to imagine coherent universes, but a universe that is not reflected in all its parts, that does not correspond to its potentiality, that does not reflect its own intelligence, and whose intelligence is not the maximum of intelligence, such a universe does not only not exist, but cannot exist either in reality or in an imagination which thinks about its own coherence for a sufficiently long time. So I realized that all that exists is necessarily all that can be, and all that can be is truly all that is possible, and all that is possible is possible for an intelligence (can one be possible in relation to anything other than an intelligence?), and if this intelligence covers all the possible, it is because it is the maximum. It follows that if this possible is being, then it must sometime or other be all its being. But if it is not at sometime or other all its being, it is so one day after the other. Such is the essence of time. And the more the moments unfold, the more complex its creation becomes.

The universe continually corrects itself, plunges back into itself, evolves, so that at a precise moment of its growth, after, say, 13.7 billion years, through one birch tree in particular, it sees a man in a window. It says to itself: "There's the proof, there's what proves that I am an intelligent subject, I exist because that man exists and he too is all that can be. With all that is connected to him, he is all that

corresponds to my most intimate and original desire, he is the subject of my search, for I am his creator subject."

The man and the tree have found each other. Their satisfaction is complete, for they are everything for each other, and nothing, absolutely nothing escapes the skirt of their consciousness. This inundates suffering, drowns desire, illuminates things, it is happiness⁵⁷...

It was at the moment I looked at the birch that I recognized my source. I looked to the side of the one whose extension I am, and I saw the one who wanted to be seen by me, the one who had made two eyes for me so that I could see him. I saw of what tree I was the leaf, of what vegetable I was the mind, of what body I was the consciousness, of what flesh I was the suffering and the pleasure, and who was conscious from my consciousness. I am a radiating mirror in a convergent mirror. Consequently this birch is not the symbol of creation, it is creation in action, for all of being is connected to it. If I had looked at a blade of grass I would have arrived at the same conclusion.

No matter what the form, the whole of being is in it. It cannot be symbolized by a form, for it realizes all forms. We can begin, then, with no matter what and the whole universe is connected to it. However, in reality as in the thinkable, there is not no matter what, but simply the possible and therefore the intelligible. Intelligence is reflected in being and being in intelligence; this is the very essence of existence. But the ground of intelligence obviously remains unintelligible. Intelligence: the folds of the necessity of contradictions in a free creative source. I am the one who finds the being who is there beautiful, for I am there in it, with it, through it, and I create myself by my acts of participation in its pure act.

It is said that this began with the inflationary departure of a minuscule point which started to pump the possible future in order to make it living past. And this has worked, and this has functioned, light has been condensed, the galactic tops are dancing, electrochemistry ascends, by the strange roads of evolution, to the edge of my warm, living tears.

This morning there is an immense cosmos concentrated in a single birch: a physics, a chemistry, a biology around which birds dance. If you look at the tree's base, there is a green skirt that makes a whole continent, a blue sea that prolongs the continent, a center of gravity that modestly closes the skirt in the shape of a planetary ball, and this turns around a thermonuclear sun that bombards us with photons at billions of degrees Celsius. And I assure you that there is not one photon too many for this young birch that gracefully rises, a cup of light in its hand, already giddy in the wind. We certainly have to realize that, for this birch tree's existence, it is absolutely necessary that the whole of infinity become incarnate. This proves that it could assume nearly all possible forms, all thinkable

57 I let myself be inspired here by Buddha at the foot of the pagoda fig tree.

sizes, and this wouldn't change the basis of its being: it would always be the quiet and restful island of an organized light.

What is inside reveals itself and we are surprised. Why is it so surprising? Why is the visible amazed at the invisible and vice-versa? For example, I have a heart. I feel it beat, but I have never seen it, and it has not yet seen the light of day. It is too intimately mine. It beats, it is me, it makes me. I do not see my flowing spring, because it coincides with me. It is the same for my innermost thoughts, those that make my blood circulate, that drive me toward fire, ice, shipwreck or the search for a friendly heart.

And then from time to time a thought makes its way, finds a way out in words or in actions, and it reaches the place of light. The light sketches its form... There's my idea, I see it at last, it was a little red house! It had kept me from sleeping for some time and now it goes on its way, provides shelter, sweeps dreams away, circumscribes acts of love... In my short life, some of my ideas came to light, but most of them are still at work inside me like hidden and private hearts renewing their blood.

In order for anything to be seen, distance is needed, and when we are seen, it is because we have freed ourselves from the center. The distancing is done within time. We enter others' pasts. We enter their memories. Distance also resembles space. We are distant, we are alone. But we breathe our own existence since a part of what we are is found some distance away from us, deep in total being. Thus we are born by leaving the center. In this way, give birth to us by ejecting being out of the center. Yet we always know, in our deep and private selves, that every being who moves around us is still swimming in our heart's blood, and that we ourselves are in the blood of others and that, all together, we are pulling being into the light.

The cosmos stretches like the mainsail of a frigate whose mainmast is the tree closest to my window. In the beginning, we look at the flapping of the canvas. Then we pay attention to the night opening up before its movement. We have no idea how much love there is in being's letting-be! We have no idea how much receptive love it takes to envelop the creator love! Yet our eyes are suddenly fascinated by all that lets being be, by the uterus giving way before the baby. And it is at this moment that we perceive, feel and grasp that the center where we are going in the night is the center we come from. The pure act and the desire that fertilizes it and lets it open are a single infinitely carnal and cosmic love when I see it outside of me, mystical when I feel it in me.

By time, I am freed; by space, I am covered. By time, I am analyzed; by space, I am synthesized. In time, I am particularized; in space, I connect my particles.

I didn't see the slightest sign of fatigue in my birch. The particular non-action Lao-Tse speaks of in the *Tao Te King* simply means that it is not in a hurry to be something else, to be another tree, to be another continent, another planet. It already is everything in this infinite body that prolongs it: colors, beauty, and grace. It takes pleasure in all it has succeeded in being, and is open to all it still can

be. It is surely consciousness of self, it is surely me. This non-action is the first action, for if not, we would not do any good thing, we would tumble down like bowling pins in the game of reactions to others' reactions.

In fact, says the philosopher, two attitudes are possible: either I identify with a particular form, for example this male body wrapped in a somewhat hairy skin, limited by what immediately affects it, set aside for the part of intelligence he thinks he controls by a will that says: "I want this." In the case of this particular identification, it is certain that it won't survive for very long, because forms constantly change, to the great good fortune of all creators. It is also certain that it will be frustrated in all that it thinks are its needs, since the planet isn't organized to respond to what each one thinks are his or her needs. It is also obvious that life will have no meaning, since the meaning of reality is not oriented around an arbitrary construction of needs. It is as if when we try to complete a jigsaw puzzle starting from a wrong lead, a wrong image: nothing works, there are always too many pieces and missing pieces. Then, at the moment when we abandon the image we want in order to discover the real image drawn on the scattered pieces spread out on the table, we progress much more easily. Except that, in the case of the birch and the cosmos, it is not an image that can guide us since the birch of today will be a forest after awhile and so many other things in a million years. What can guide us is not an image, but an intelligence. This is why we go forward through science, through art and through commitment.

Or else I identify with a source of creation that learns as it takes on forms, yet always escapes toward an originality that reveals it. Here, I am not subjected to time as an object; I create time to realize myself without being swallowed up in the forms I produce. I become differentiated through my particular participation, but I don't lose sight of the fact that I am participating in something infinite which surpasses me and which, however, is my being. I am as immortal as all the sources of creation since all forms die and are reborn in the one goal of liberating me. I don't just live in a meaningful world, I live in meaning itself, in significance itself, the one in which I participate. And it is because the meaning of the world is not totally locked or even able to be locked, it is because it is not data and never will be, that I have meaning in a creation that surpasses itself every day.

For one anchored in the creator act, happiness is a sign of truth. In brief, mechanical thought leads to the invention of death; organic thought participates in the cycles of life.

Wisdom is no more, perhaps, than the following discovery: the goods offered to us without our having wanted them are always better than the ones we wanted. The reason for this fact is simple: desire must precede will and not the reverse since time produces space and not the reverse (desire is to time what will is to space). We have to understand it before we suffer from it: everything, absolutely everything can only be conquered by desire and the enlightened consent of consciousness. Nothing can be possessed, but everything can be liberated. A day will come when we will discover that we desire what already overjoys us. This is

our day of happiness. "You will now the soundness of your road by its having made you happy" (Aristotle).

CHAPTER 4 : The ecology of action

True action has no object. Nowhere is there an object to which such an action can be applied. For example, pruning a tree is not an ecological action if the tree is in no way a party to the action, nor its environment, nor the birds, nor the insects, nor all the rest. It's an old habit that has reached its limit and it is certainly necessary to change it. Action demands an enormous amount of knowledge, for we ourselves are deep in an organic whole and our acts will transform an organic whole. How? Impossible to say. The ecology of action is very old. We find traces of it in all the traditions that know how to live in nature, in the tissue of links of interdependence that make it up. The most evident trace of this art of living *in* life rather than on an illusory overhang is doubtless the *Tao Te King*.

The action of one of the body's cells comes from the body and acts in the body. Only rarely is it an action; usually it is the transmission of a movement. But sometimes initiatives do occur, some of them harmful, others beneficial. Human beings are always somewhere, and they always, in spite of themselves, have their feet on this world, their legs and all the rest. For this reason, they participate in something, in a movement for justice, for instance. They don't yet know it, but they are lifted up by a social force. Here they are, waving their protest signs in a crowd. They are participating in something, but alas, they still don't know anything about it. Is it a sickness, or is it a healthy act? They don't know. For this reason, they won't produce any true action today as well. They will at the very most be pushed into a cascade of reactions, one more agitation on the screens of the world, a movement in the social currents for who knows what transformation.

The first step of action: participate *in* something not to be subject to it, but to add to it one's impetus (energy) and one's discernment (information). And the way to this passes through a taking-root, through an infiltration of consciousness into what every day takes us off somewhere. Knowing who we are in the tree of life allows us to avoid simply turning in the wheels of the world and act consciously on it from time to time.

Some think that free action doesn't exist. Others think that all actions are justifiable. But what difference does it make? The characteristic trait of free action is to move in set currents while giving them a highly improbable reorientation... For the better or for the worse.

Imagine a wanderer. He is old. For years he has counseled ministers, the prime minister, the king, the emperor. But he would have preferred to whisper in the crevices of a rock, for he has never been able to avoid a war or a single harmful plan. This is what he said to the people as he left the court: "The king and his ministers form a single block of stone. They crush all the people and don't hear

any cries." That man was named Lao Tse. After speaking for the last time, he left. They pursued him. On arriving at the border, he had to buy his freedom by composing a series of pieces of advice addressed this time to the people: the *Tao Te King*. Here is what I get out of it from the perspective of an ecology of action⁵⁸.

Rootedness in the presence. Walking in the solitude of a great landscape we can feel a presence. When the presence envelops us, we say it is Heaven. When it supports us, we say it is Earth. No matter! It has no name. [1]

I can trust the presence, though its form constantly changes. I take root in movement. A tornado does not last long, a beautiful day does not last long, but the river always runs. Standing on tiptoe, we lose our balance. With a foot on each shore, we cannot walk. Showing one thing, we hide the rest. Yet I can feel my presence slip into a still greater presence. [21 to 25]

The Presence has no meaning, but all things find their meaning as soon as we feel It. Through long studies and great experiences, we know. But we understand in a flash. [32 to 35]

The encompassing of contradictions through detachment. Everyone thinks he or she knows the difference between the beautiful and the ugly, the good and the evil. But the beautiful and the ugly, the good and the evil, clarify each other. This is why the sage encompasses all equally. [2]

The dome that encompasses us appears empty and deep, yet it is fertile. Like the belly of a woman: it gives birth. Because it encompasses death as well as birth, it doesn't die. [4 to 7]

Good luck and bad³, honor and humiliation freely fashion our lives, on condition that we don't cling to any of them. Thus we must not entrust power to the one who prefers power nor to the one who prefers humiliation. [13 and 14]

Equality. Let us imagine that no one elevates anyone over the others and no one lowers anyone beneath the others, then there would be no more war. Let us imagine that the air, the water, the cultivable land held in common were as well maintained as a palace belonging to someone, then the air, the water and the cultivable land would remain clean and fertile. This is why the sage possesses nothing, but considers himself responsible for everything. [3]

Water. Living persons are like rivers, they water all who come to take their water and continue on their way. They can do it because the spring flows toward the sea. What they don't possess makes them fluid and free. [8 to 12]

When we pick up a shiny little stone, we no longer see the grass of the fields.

⁵⁸ In the commentaries that follow, the numbers in brackets refer to the paragraphs of the *Tao Te King*.

Be careful. With a hesitant foot like that of one crossing a lake in winter on thin ice, simple as a piece of wood, open as the entrance to a valley, he is undiscernable, yet wool is untangled in his fingers without his even knowing the secret. [15 and 16]

Sincere and faithful. The one who lacks sincerity lacks faithfulness. Who can know if he lacks faithfulness? As soon as we leave the rivers and streams that connect the spring to the sea, we become just and unjust, beautiful and ugly, true and false. We know that we have left river and stream when we think we are just, beautiful and good. The one who does good doubts the good he does. The one who does evil is convinced he is doing good. [17 to 20]

3. Taoists often tell this kind of story: a man had a son. The son falls and breaks his arm. What bad luck! The next day, there's a conscription and all the able-bodied men have to leave for the war that very day. What good luck for the son! However that night the house catches fire and the son is seriously burned! What bad luck! If only he had left with the others! But, because of his burns, he is sent to a hospital where the most beautiful of girls comes to heal him and, smitten with love, lays claim to him. What good luck! And the story goes on indefinitely. In short, in order to know how to distinguish good luck from bad luck, you would have to know the end of the story, which would render the story uninteresting and meaningless. That would be a great misfortune!

Stay at home, live without weapons and attract. Nothing exerts as much influence as to stay at home and attract everything. The action begins when we have given up hope of reaching the goal we have set for ourselves. [26 to 29]

Very beautiful weapons cause horrible slaughter. As long as we honor those who kill and humiliate those who give birth, we are crushed beneath the weight of all we possess. [31]

Even though he is unarmed, tigers can't devour him, for there is nothing in him to eat. He wins because he doesn't yield to the temptation of conflict. He respects his adversary, he doesn't grant him a penny's worth of his peace of mind. In the end, he exposes himself to the volley of his enemy's arrows. Who else could receive them without collapsing? [68 and 69]

Contravene yourself. Taking the movement in its entirety, the Source already is the sea since it flows toward it, and the sea already is the source since the water evaporates and it rains on the mountains. The sea surges into the eye of the rocks. It contravenes its own movement in order to multiply its forms. There is no worse misfortune than to live in a comfortable house. For the thief: always a little more. For the one who is careful: always a little less. [45 to 50]

Jostle. If you want someone to be attached to you, untie him. If you want to make someone rich, deprive him. The river is free. A sighted person wonders about what he sees; a blind person senses what he does not see. The first never collides

with anyone, the second jostles everyone. The water is stronger than the rocks. Crying is more powerful than clenching the fist. [36 to 44]

Cure. The floors of palaces are gleaming marble. The grass around the palace is perfectly mowed. Everything is impeccable. Conclusion: people are starving to death. In the opposite direction, the river's water causes growth because it nourishes; it shelters because it looks after; it supports because it envelops. The mother of an infant shows her face, but keeps her secret; she gives her milk, but hides her embraces. If the roots of the sage cannot be pulled up, it is because he cultivates in his country the love of all the peoples. [51 to 54]

Govern. In empires, the carefree are governed and the worried executed. So nothing works any longer. In my country, we welcome the worried and let the carefree go. The one who knows that his life and his death depend on nature doesn't let himself be governed. A good government cooks its little fish with much attention: it doesn't turn them before the time is right, it doesn't forget them in the frying pan. It waters them with beautiful words. In its kingdom, one works hard to fail every time when the goal might come on its own. In my kingdom, the one who doesn't wear himself out failing easily arrives at his ends. In my country, one doesn't seek to enlighten the people. But one avoids blinding them. [57 to 62]

The one who wants to lift an elephant should place himself under it. The one who wants to stir up a crowd should use the language that it understands. The one who wants to feed people should cultivate a garden.

A great wave began by being a little wave. A great difficulty began by being a little difficulty. In my country, we never completely leave the beginning. [63 to 67]

Some people no longer fear the leaders, to the point where the leaders no longer have any hold over them. Why? Because they cultivate the land and eat well. However, few people see those who make life, so the majority obey those who make death.

Love the mud you think you are squelching through, it will become a garden. Build the paradise you want and the earth under your feet will grow sterile. [72 to 81]

CHAPTER 5 : Ecological action

In the great cathedral, the choir and the orchestra had been playing for some time. The nave, the transept and the transept crossings were packed. The stone vibrated. The slanting light colored the dust. Outside, the dome, the steeples, and the spires transmitted the oratorio to the reddened evening clouds. Flocks of birds were going in every direction, others came to perch on the gargoyles and the

gutters. Inside, in addition to the music, the silence was phenomenal; one might have said that everyone was holding their breath. There surely was something to be moved by! Whoever listened saw dead leaves lifted by the wind, trees dancing, deer leaping, stars exploding... Beauty.

A strident scraping! One of the cathedral's great doors opens. A musician carefully inserts himself. What an hour to arrive! A considerable lateness. He manages to slip through to his place, a very long road, for the crowd is dense... With infinite caution, he takes out his violin and bow. So imagine his moral state when he finds himself with his arm in the air, bow suspended over his instrument!

Every one of us is at this critical moment.

Above all, ecological action is feeling the presence of the music, of this harmony which precedes us and envelops us... Now, some will say: "But what are you doing about the chimneys belching, the workers seeking the meaning of their poverty and suffering, the dolls transporting the blood of the children who make them to the children who will throw them out? The cathedral has been wrecked. All we hear is the noise of automobiles, horns and delivery trucks..." And others: "No, the cathedral is the wretchedness of the hunter-gatherers who die barely two years after the birth of their first child. And the noise of machines is a small price to pay for a comfort torn at great cost from mean Mother Nature..."

This rhetoric for or against a vision of the past does not allow us to place a single carefree foot on the planet where we are stuck in spite of everything. After all and in spite of ourselves we are immersed, breath, stomach, throat, in the air and on a thin layer of arable ground. It follows that if what facilitates our lives destroys what sustains them, our lovely decoration of asphalt, concrete, chrome and cathodic light will not prevent the smoke from suffocating us. And if all this artificial happiness depends on the wretched poverty of others, which of us would want to exist? It is for this reason that, when we examine the ecology of an action, we see immediately the enormous weight of a tragic negativity: how not to harm?

We understand then the neo-primitivism of a youth that wants to return to the gathering of mushrooms and edible flowers. Certainly an honest and sincere attempt to escape the anomie and nausea our shopping centers give us, but doesn't intend to go backwards. It is moving the heavy weight of "modern" habits toward a new destiny.

But let's return to our old guide, the *Tao Te King*.

Rootedness in the presence. The time before the action makes right action possible. And right action penetrates time like a blade in a clear morning. Agitation blurs.

In a large German convent there was an elderly nun worn out by silence and work in the fields. A delegation had come, because nothing was working any more in the country. They had just entrusted her with responsibility for education, health

and agriculture. The list was oppressive. The old nun's shoulders were barely taller than the table she was sitting behind. At one point, they felt her head was giving way. In the end, they asked her where she was going to begin. She answered: "I think I'm going to go lie down."

Work with contradictions. In itself, a hand has almost no strength. If we take only one side, justice, for instance, we don't get anywhere. For justice is only a dream. If we take injustice alone, we don't get anywhere either, for it is only a fact. It is only by making them meet that we can arrive at something.

To produce a spark seems a tiny action, lost in the cold and the snow. But if you have collected enough dry twigs, it can make the difference between life and death.

Attract everything to self. Moralists have done their utmost to define the virtues. There is, however, an obvious sign. The conscious draw the virtues to them like butterflies attracted by a light and the unconscious grow increasingly aggressive or go away guffawing. Nothing will take place if there aren't poles of attraction concentrating the consciousnesses. It is from these alone that a creative and transformative action can come.

Be careful. If the attraction is strong, the action will be just as intense. And as soon as the action comes to life, it shows a terrible tendency to follow the same paths as a reaction. Now the characteristic of an action is to remain intelligent not just at its start but all during its effects. It is adaptive. It tears itself away at every moment from the reflexes of reaction and adjusts to the situation. If not, it is certain to do no more than supply one more energy to its contradictors. Faithfulness in listening, attention to self and to what is really happening can't be allowed to weaken.

Contravene yourself. Attention is not enough. If I happen to find myself at the heart of a pole of attraction in which an action is emerging, I should surround myself with those who don't think like me. I say "those who don't think like me". This supposes that they think. We recognize that a person is thinking when she or he has no opinion and doesn't react to any opinions. The world of opinions resembles balls thrown on a pool table. A game of knocking where no one takes the trouble to reflect. The one who thinks goes over everything from the beginning. Checks all the perceptions, all the information. Weighs the facts. Secures his values to his daily life and pays the price for his advances.

Care for. Action is a little plant. The first move is minuscule, almost imperceptible. It emanates from a ripe and long-prepared soil. A group of consciousnesses come and graft themselves to it. Light feeds it. Leaves open. Attention is necessary every moment. Everyone retires into her or himself for long periods. Fortunately, enemies have been hoeing the ground for a long time. Who knows what a clod of earth contains: footsteps, voices, silences, cries, sighs, sweat, blood... And then the plant comes up. A huge amount of care is necessary before maturity. The radiance arrives. Next, someone comes to cut the plant, lets it dry, gives it a name, and then sets it out in her living room where everyone adores it. And everything

has to be started over again. The characteristic quality of action is movement. This is why the completed action is inevitably transformed into an obstacle. The gardener doesn't adore his vegetables. He eats them and always begins the same miracle over again.

Govern. Necessarily a double question: how to not let yourself be governed and how to govern yourself while participating in the rising of an action⁵⁹.

If I wish to describe an action, this is what is glaringly obvious: I have taken an original path, I have communed with myself in order to find my way, I have looked around in order to do differently... And now at forty or fifty I see that my most original action was just a part of a general outcry, a global movement. I begin to find in a number of books what I had trouble thinking up. As a product of society, I am an ecologist because that's what is driving us these days. But am I part of an ascent or a descent? The day I ask that question I can know my allegiance, take stock and find my way.

CHAPTER 6 : Active resistance

Before our eyes, the ecology of action uncovers a mountain we had very poorly evaluated: the enormous task of doing no harm. How can we breathe, drink, eat, clothe ourselves, find shelter without harming anyone directly or indirectly? And to make matters worse, is this enough? I ask myself: can a human being live without a positive ideal? The perfect negative ideal is death. Directly to the compost. What a seductive temptation for a depressed ecologist! A positive ideal is no doubt necessary for human motivation. But is it clearly possible? This is the very question of consciousness. The itinerary we have been following gives us to understand that the answer is yes. However, this positive ideal appears more inaccessible than the only negative ideal: how, in fact, to live and live one's life fully while adding to the impulse of creation without increasing the gases that threaten life? And this, with the persistence, the tenacity and the stubbornness of those who know in advance that they will form no more than a barely noticeable fringe?

We can draw up a balance sheet: in the active, what contributes to life, in the passive, what should be charged to the stressing of the environment. But alas, reality is not an account book. It isn't certain that planting a forest somewhere compensates for the exploitation of the tar sands. We can imagine a different mathematics. Every morning about seven o'clock a man on a bicycle passes in front of our window on rural route number one. He is going to work in the village, a dozen kilometers further away, dependable as a clock, assiduous even on the morning when there is a blizzard at 20 below zero. He has been doing that for

⁵⁹ Since I have already written abundantly on this subject, I will merely refer the reader to *Le pouvoir ou la vie* (Power or Life), Montreal, Fides, 2008.

over two years. Now we wave to him, we and many others. Has he sowed a full row of hope in the field of hydrocarbons? Has he demoralized the aficionados of big engines? The trail resembles a furrow somewhat: on the right, to take their vengeance on him, they make cars bigger, on the left, a few now imitate him.

At the point where we are now, consciousness appears deprived of all effective instruments. The reason: it works in individuals (they still must want it) rather than in groups. How to confront the wall of powerlessness, especially when you are just one individual? The experience of the military and of industry gives us a lead perhaps: the smaller the point is the less energy is required for penetration. A nanometric jet of water is stronger than a burst of automatic weapons fire. Metal is cut by water under pressure (waterjet). The man on the bicycle is cutting the world in two... a jet of water.

I do not know the power of the smallest hope and even less the power of the greatest despair, I do not know what produces a jet of hope under the pressure of despair. I do not know. What do I know about the powers involved? Yet I tell myself that life has passed through several billion years making beauty for itself in a bitter struggle against rocks, volcanoes and meteorites. It has always prevailed through the tactic of small fertile plants and small combative animals. However, the question is perhaps not: what can I do? but: how does consciousness proceed? For then, like curlers, we would only have to sweep a little in front of our path in order to improve the sliding on our trajectory.

The means change with the times and the circumstances, but the resisters have nearly always chosen to draw the basic essentials of their subsistence directly from the earth so as not to be swept away by social currents. They flee crowds and cities in order not to find themselves in a gregarious pseudo-militant reaction. This is the essence of resistance. To resist what doesn't touch the earth, what has escaped the struggle for life and is no more than a struggle between men, a competition.

Economic autonomy, however, is not the most difficult thing, even though, in a society like our own, the pitfalls to reaching it are multiplied. "Economic" industrial organization is founded on dependence, all this to ensure that there is a motivation to earn a salary. Despite this, the struggle against inner monsters and the enormous challenges of intellectual demands are a thousand times more difficult than the necessity of getting rid of all one's debts. Nearly everyone renounces his or her ability to doubt or on the contrary allows her or himself to be crushed by it. Very few dare take on the adventure of responding to the needs of thought without giving up, not only rationally, but emotionally and in concrete experience.

The worst struggle begins when we become aware of the why of all this fleeing forward based on petroleum and steel, entertainment and opinion, war and conquest. This compulsion directed against nature and against the inner abyss resembles a panic. And we are right to flee. We have no idea how much love of self, of others and of trees is required to withstand the confrontation, to arrive at

the point where our own contradictions act like the wrist and the hand, the arm and the shoulder, the knee and the ankle, all the length of the spinal column, in order to swim in hope at last.

Master-swimmer. Then to go upstream. To sow. And to feel the peace of the rocks under the pools' agitation. As Jean Giono says in *The Man Who Planted Trees*: "When I count up all the constancy in greatness of soul and unfailing effort in generosity that has been necessary to obtain this result, I am overcome by an immense respect for this old uncultured peasant who knew how to successfully bring to completion this work worthy of God." This is how consciousness has finally made a resister.

Yet by what miracle, and for what motivation would we now throw ourselves into the crazy business of trying to tear the world away from its madness? How is a resister led to become active even though she or he holds in their hands the measure of their own weakness and the measure of the stupidity of a collectivity collapsing? I repeat it: they are borne away by the impossibility they are in of abjuring the light of their own consciousness. And, more imperatively: nothing resists if it clings to its place, especially not the resister. No tree remains standing in a lava flow running down a mountain. The roots may be deep, the drive toward the light, vertiginous, but the tree will not stand. The individual will save his soul perhaps. But who would want to save his soul while abandoning the world to its collapse? A way out must be found.

It is time to deal with the lava itself. We will have to withstand a long siege, however. Yes! The wind ends up by wearing down a mountain, the sea gets the better of the rocks, yes, life comes back stronger on the ashes of a volcano than anywhere else, but it takes time, for it is the role of consciousness to first exhaust the unhappy possibilities. Each bitter possibility must be exhumed, exhibited, tasted and digested. This is the only means of putting something solid under our feet.

One day consciousness will have beneath it the pile of all human and inhuman stupidity. A step will have been gotten over. The earth's crust will be formed then, consciousness will no longer walk on the mud and lava of its own fears (which are due to possibilities it knows really are horrible, but which will have been surpassed). We will see the sprouting of the first civilization of happiness. Like a mammal profiting from the dinosaurs' experience, humanity will be born from inhumanity, we will see it galloping on the sediments of its ancient sorrows. Many disasters are needed in order for us to finally be able to have our fill of happiness.

If we try to imagine another solution theoretically we inevitably fall into either the perfect ready-made world of an earthly paradise that would render us useless and subjugated (Plato's idealism), or into the hopeless world of matter crushed by entropy (nineteenth-century materialism). Viewed at a very great distance from our planetary history, the best is that the work of time and consciousness conclude by putting the heavy materials of primitive wars into the past in such a way as to

gradually free up the future for the challenge of happiness. One day consciousness will see its work: a tree coming out of the earth in the rising sun.

But let's return to where we are, return to this "world in ruins" so well described by Hermann Broch. The sleepwalkers and the irresponsible knead steel in urban ovens, the smoke is thick and the children's eyes are blinded by the discharges of cathodic screens... Nonetheless, consciousness drives its levers into the entrails of the one abandoned, and out of the thick smog, gazes free themselves. Some have learned to walk on their own and their serenity clashes with the glazed decor of the stores. They are like islands there. They can act, for they cling already to the child who will be born, they are attached already to the chain of stopping-places leading up to the great morning when the world will leave its fear behind. Like a nanometric water-jet, they draw their strength from their tiny daily actions. Consciousness continues its work.

They attract to themselves the shreds, the fragments. Autonomous and prepared for a very long siege, they have settled down. And since the machine creates a lot of unhappiness, and since a drop of hope finds all its power when it joins this unhappiness, the plow spreads out on the left what the right on its side strives to harden. A youthful generation is driven back to them. A microsolidarity is being formed. Consciousness has found not just the individual path, it has succeeded not only in piercing holes one by one in the night. Its loom is extraordinary. And if you observe the fiber formed from the beginning between the often distant little stars, you see that light really exists. All stars are connected, even to the smallest sparks. We must sit ourselves down on one of these still-young islands, a few months is sufficient, and we would immediately see the relays arrive and depart, exchange information, build solidarities, weave connections. If salvation, like the life of trees, is in the very small, in the seed, then we can...

That's enough! they will say. Nowhere do we see emerging a force able to make even a tiny counterweight to the civilization of iron and fire. Jesus didn't prevent Rome's repression. Gandhi didn't hold back religious wars. Beneath the steamroller of China's commerce, Lao Tse is like a little pea... David defeated Goliath, but we don't stop "progress"...

Yes, certainly our nerves are stretched to the breaking point. Our grandchildren are sinking into a world where we have deregulated almost all the regulators. And consciousness is advancing at a turtle's pace. Nevertheless, we are condemned to hope. What else is there?

It's easy to say: nothing will work. In addition, the disillusioned are almost certain to be right, for in fact nothing will work if we believe that nothing will work. This belief has the quality of surely creating its result. A perfect tautology. Whereas to struggle with consciousness on one's side is to bet on the greatest improbability there is, in exactly the same way that life has always bet on improbability.

Here again, we could not imagine an immaculate world with little spots of misery here and there. Who would have survived such a world? But a total darkness, and

then suddenly a spark, and the whole soul vibrates. I want to be in this lost world. I will rise up against it. And if I am conquered by it, this won't take away a single drop of my dignity. From one end of the cosmos to the other, it is the minuscule and the improbable that have prevailed. Resistance is inevitably transformed into active microsolidarities. The human being cares more her or his dignity than her or his life. She or he is a combatant a hundred times vanquished, a thousand times risen again. We begin to ask ourselves if she doesn't devastate herself so as to pull herself out of the worst in order to be the best.

Every woman, every man who has attained a minimum of concrete autonomy and freedom of thought inevitably becomes a pole of attraction like a mass in a nebula. Forces are assembled, dust is concentrated, and stars are lit. This has nothing to do with the cult of personality. On the contrary: the attraction lasts because the intention to attract is no longer present. The self full of itself has stopped chasing consciousness out of itself, and the nucleus of the self becomes attractive because in it everyone can find their own place, their power of participation, and their originality.

The fact that the undertaking is desperate adds to its power. Microsolidarities are without (or almost without) the strengths connected with dissuasion, rewards or manipulation, for the selves are no longer fleeing. Microsolidarities are based on collaboration. Together they form a group that knows what it is participating in and in which the participation of each person is maximal in regard to consciousness, thought, creativity and action. And only a small open group⁶⁰ (above all, it has nothing to do with a closed group) can maintain this form of attractive collaboration. It is because consciousness connects these groups that, in an unexpected manner, all of civilization will turn upside down one day. However, it won't turn upside down just for the better, it will also turn upside down for the worse, for consciousness, mind and soul seek not only height, but also width, and above all depth perhaps, an adventure with every door open...

But let's retrace our steps. Autonomy requires a minimum of money, and perhaps more than one would like, for if not, it's a job we are forced into by debt, the search for a high salary in order to get out of it, subordination... Who has the means for an economic autonomy? To be able to feed ourselves and find somewhere to live without working for a polluting industry or one that practices some form of gross exploitation of the workforce is something not given to everyone. Can money seriously participate in active resistance?

⁶⁰ Recall that an open group practices open values, pursues open finalities, is organized in such a way that the environment participates in it. It seeks out even what contradicts it, it opens its doors to heterogeneity, its inner integrity does not depend on its means of defense but on its internal coherence and on its harmony with nature as a whole

CHAPTER 7 : The sinews of war

Is there an ecology of money as there is an ecology of action? Does money have a memory? Does it link the past to the future and the future to the past? Does it maintain a connection with social reality and with nature? Is it the connection with finiteness, as people have believed?

The surprising thing when we take out a bill of money is that it is nearly impossible to know its history, to know its roots. It can come from the sale of an illicit drug, from a scam, from an abuse of power, from an illegal transaction, from a charitable donation... It has slipped between hands that were dirty or clean, with bad or good intentions, greedy or generous. It doesn't retain a trace of this. And it isn't because it's a fresh new bill that isn't dirty, it's just that no one can reconstitute its history. Money has a remarkable ability to be laundered. It is amnesic.

Its future is ill-defined. Money can do many things, good and less good. But the one who is in action quickly discerns the limits. Money can impel us to do the least work possible, and its power to motivate creativity and initiative are very limited. The human being is an affective abyss, and money meets almost none of her or his real psychological needs, and it often even sabotages the affective responses it arouses. It sows doubt: and what if I'm loved only for my money? Intellectual needs require a minimum of money, very little - a book doesn't cost much, and I can easily borrow it. In the face of spiritual needs, it is nothing. The more gilded the temple, the more powerful the religious institution, the less spiritual life finds its freedom and motivation there. Physical needs like air and water are still cheap (this is beginning to change). We can prove by experience that food is expensive for the one subjected to food fads and the semi-monopolies of the distribution system, but we can manage to eat for very little by reclaiming produce that is no longer fresh or is outside the norms (over a billion⁶¹ tons of food is wasted per year).

Perhaps it is correct to say that money is the "sinew of war" and never the "sinew of peace". Above all, in the game of competition and power⁶² it allows us to place persons in a hierarchy. Now a game like this is based on war, that is to say a form of competition where what is mine is necessarily not yours. In spite of everything, money remains useful and even necessary, for housing among other things. This is where the economic machine catches up with the social dropouts. In cold countries, this is not insignificant.

⁶¹ 1.3 billion tons according to U.N. experts on food and agriculture.

⁶² A game I have described at length in my book, *Le pouvoir ou la vie* (Power or Life).

In reality, money is purchasing potential. It gives access to no matter what merchandise, services included. It is useless for anything else. Currency (dollar, euro, etc.) is itself a merchandise, but above all money is a link between market values. In this respect, the most worrisome thing about money is that we never know its value. Twenty dollars only defines a relationship to a market value, but it has value only as a measurement. I am forgetting the money market here, for the dollar can be victim to a devaluation on the money market. But let's try to understand money as a gross measure of market values independently of the money's market value. Let's imagine that the money I have in the bank is transformed automatically into the currency that supports its constant value. Let's imagine that I have one hundred thousand units of this nature. This is my purchasing power, that is to say of transformation into merchandise (a service is also a merchandise as soon as it can be bought).

This purchasing power only has value the day when I can transform it into a market value, consumer goods, for instance, or a building, a piece of land, stock, bonds, saving certificates... What does it matter! A consumer good can soar in price and your money shrink like a wool sock in the wash. A house can abruptly lose its value. We see this when a real estate bubble bursts: a hundred thousand can fall to fifty thousand. If you buy stock, the yo-yo is no less risky. If you save, your savings melt like snow in the sun when inflation rises radically, as it sometimes can.

In brief, money is a power necessarily tied to a merchandise (an investment can be viewed as a merchandise, for its value depends on a market). Its potential is volatile. A terrible and agonizing link is established between money and market value. It is as if I put all the food I need into an elevator. If the elevator goes down, the quantity of food is less. At the last floor of the basement, nothing is left and I starve. If the elevator goes up, I can find myself with such a warehouse-full of food that I am forced to sell some of it. Every year some of the rich fall down from their thrones and some of the poor climb to the summit (this is much more rare).

If money is a measure of value, this value rises and falls according to the collective game called the "market". Like all games, it holds up as long as it is played, and it is played as long as there is confidence in the rules. The game can be ruined by the return to weapons (dissuasion always wins out over rewards). If there are too many cheaters who use violence in order to win, the game can crash. More generally, if the game creates too many losers, they are out of the game, they no longer have access to the market, and the market works only if people buy merchandise. For example, if there is too much money in the circulation of investments to the detriment of the circulation of consumption (the rich too rich and the poor too poor), the economy literally suffocates because too few are able to buy.

This is the economy's great paradox. Its driving force is profit, but if profit captures too large a part, consumption stagnates and investors move to ever more lucrative securities. At a certain point, there is a crisis: too much money in the

hands of too few people; the others are too poor to be consumers. We are in the position of a water wheel filled to the brim in some compartments, empty in all the others; it stops turning. Credit tries to give some money back to the poor, but it is only a temporary elastic -- it can break. The State will generally act in hope of a larger distribution of purchasing power (for a small investment, this is the greatest creator of jobs). But the reckless search for profit leaves the investors to siphon the state through subsidies and drain it by lowering taxes.

Since it is a game founded on the unconsciousness of the actors, that is to say, their self-centeredness, their shrewdness at getting ahead of others, consciousness can create only attempts at autonomy. In the history of humanity, microsolidarities of active resistance (which, alas, have not often been open groups), think, for example, of the monasteries, the ashrams, the beguignages (before 1310), the sufi communities, the anarchist communities, the villages of peasant resistance, etc., have staked as much as possible on the autonomy of food and of the habitat (by being satisfied with little and by working together), and the maximum response to non-market needs like intellectual and spiritual needs (alas, quite often to the detriment of emotional needs). It was an economic resistance. Force of arms alone could overcome it.

Money measures market value. From the individual or microsocial point of view, we can try to shelter ourselves from the fragility of market value by the autonomy of responses to needs, but there is no safe shelter. For example, if the market value of land soars, this is all that is required to economically expropriate all those who can't pay their taxes. In short, what maintains market value when all is said and done is still the force of arms. As long as confidence in the "economic" system reigns, arms play a relatively unobtrusive role, but if the number of dropouts increases dangerously, all sorts of speculative strategies will be employed to prevent the autonomy of persons or groups. And if that doesn't suffice, they will dislodge the peasants and resisters with machine guns. And if the State doesn't do it, they will destroy the State, and rival lords will do the job directly.

What controls the elevator of market values, what makes it so that the yo-yo doesn't walk too quickly between 0% and 1000% is the interest of all the players in keeping the game above a greater danger: the war of the clans... This is the great value of today's "economic" system: it holds us a little above anarchic crime by sometimes instituting a legal crime. Alas! The price to pay is enormous. First of all, the extraordinary concentration of wealth that removes from democratic States their temporizing role constantly brings us closer to an unprecedented worldwide crime. Secondly, it is a schizophrenic system whose feet aren't on the ground, a kind of social tautology where nature doesn't have the slightest word to say.

There are, to be sure, initiatives to "commoditize" the value of beautiful landscapes, ecosystems, communities with green roofs, countrysides that are still alive. However, this reinforces the divide between rich and poor. Little ecological heavens for the rich... This won't lead far. Market values are tied to the market and this represents the values practiced by a society (and not the values preached by this society). When the market value of air exceeds that of a barrel of oil,

something will happen. However, if we remain in the same "economic" system, only the rich will be able to buy air and water. In short, not only must market values be connected at the same time to the real needs of human beings and those of nature, they must also be connected to the value of solidarity, for every socioeconomic cleavage leads to violence.

Can we hope that consciousness will arrive in time to undertake these two changes? In the present situation, each microsolidarity is attempting the adventure of autonomy, but nothing is more fragile. Those who profit from a system will never hesitate to crush those who resist. As for active resistance, money is useful only to the degree that it serves autonomy. Even there it is rather illusory. As for the rest, it is rather harmful since its value for attracting consciousness is almost nothing and its power of creative motivation, scarcely perceptible.

CHAPTER 8 : Militantism and continuity

It is sometimes thought that all that has been acquired of justice, democracy and equality has been won by crowds who had nothing to lose. The trigger is known: oppression makes it so that there is nothing more to lose and hope makes it so that there is everything to gain. Both are necessary. However, oppression and hope are not enough. They must be felt to the point where they reach a few consciousnesses. This is why bread and games are generally enough to give gatherings arthritis and paralyze mass movements.

Yet it sometimes happens that a beautiful spring day brings everyone out into the street to demonstrate against an oppression and for a hope. And why not? In the street one can see, protesting against an oil or gas project, some grumblers accustomed to think that the struggle for privileges is inevitable and forms the only social motivator. They don't know very much about what they are doing there. They were exhilarated by the young people, bewitched by the slogans, wrapped up in a vague feeling that something besides themselves needed saving.

For the first time, they were participating in a cause that wasn't the increase of their wages, the improvement of their working conditions, the defense of their rights, but saving something that still appeared abstract to them: the physical conditions essential for life.

Consciousness acts well before action becomes conscious. We have seen that it is the substratum rising up against the sinking surface (always entropic) in order to render the world more complex, explore improbabilities, diversify them, expand the field of finalities. In the person, it is the integration of memories with a view to producing a creative participation. It acts collectively *and* individually. However, the collective consciousness that rises up again in the veins and arteries of individuals acts in them well before it reaches the individual intentional consciousness, and as a result the intentional consciousness believes it is independent and works on its own projects in the illusion of this independence.

And then one day it realizes that it was participating in a social movement, and that this was what gave it a feeling of independence.

But before the collective consciousness meets the individual intentional consciousness in the same light, the two ways seem to be parallel. The one who has ended up in a demonstration simply through the attraction of the moment feels split in two. He remains sullenly in the field of his habitual values, for example, the struggle for positions so as to balance privileges, the struggle of egos on the market. And while he is totally occupied by this field of values inscribed in custom, he is carried away by something he doesn't yet understand, which is beyond him, but which in spite of everything attracts him, because the weather is beautiful and people are out in the street. Everything takes place as if the nucleus of the self were rising to the surface and secretly preparing to betray "average values", as if the personal consciousness wanted to go bathing in the collective consciousness.

We find ourselves in the street, astounded, surprised at ourselves, torn out of ourselves and sucked in by a movement that seems enigmatic. This is the carnival part of the crowd. This part is not alone. We find in this crowd a small group of people, prepared, convinced and convincing, aware that the struggle no longer has anything to do with the usual tension between the interests of individuals and even of classes. These women and these men are consciously seeking the improvement of the basic conditions for life, and if this suffices to save the animals, but not human beings, even this would be fine for them. The most important thing for them is: life. Their cause is higher than their person. Around this group is at times enormous flood of beings who don't know what they are doing, but that consciousness has led through a process of training, of solidarity, of emotional rapprochement...

Most will not be aware of this movement of consciousness. Some simply react to a vague emotion of revolt against authority, others are attracted by the new creation of a complete field of values. Most revolutions have been the fruit of a collective consciousness that did not reach the individual consciousness (except in a few). Oppression and hope supplied the fuel. Enthusiasm for an ideal surpassing the individual played an attractive role. But almost no one truly understood what was happening and where they were going. The repression will probably be more violent than the revolutionary movement. The rise of consciousness always polarizes social contradictions. On the surface, it is no more than the struggle between two forces, almost a civil war, but at a deeper level it is consciousness trying to leap forward. The counterrevolution will take on bloody proportions. And when all is said and done, we will end up in a situation sometimes a little better, sometimes worse.

Consciousness in action will never abandon this way of acting. Yet this is not enough. The steps it takes from revolution to revolution are always timid, for the undertow that follows wipes out a good part of the gains. We have the impression that these revolutions will never be able to catch up with the cadence of the evolution of technology, and as a result the gap between the advance of

consciousness and the advance of the means doesn't stop widening. The more effectively a society is equipped, the more the negative and positive consequences of its decisions are amplified, with the result that skill in action must prevail over the struggle of special interest groups. At a certain level of military and industrial technology, a comprehensive vision higher than special interests becomes absolutely necessary. Today it is a question of life and death.

The crossroads we are at is simple: the rise of consciousness must meet the height of our technological means. To see that this route alone will not be enough, all we have to do is observe how militantism and repression, revolution and counterrevolution function. Fortunately there is another driving force, probably more effective, but terribly slow; nonetheless, it perhaps is the best conveyor of hope, for it carries the seeds of incomprehensible leaps. It is a turtle that jumps over walls insurmountable for one level of thought. But that's precisely it, thought can jump levels. When, in the history of thought, science arrived, there was a leap in the level of thought. There must be one, just ahead of us. And the turtle alone can jump it. This turtle is life itself.

Some sixty million years ago, a meteorite produced one of the great periods of species extinctions. At the same time as the dinosaurs, flowering plants disappeared almost completely. However, a seed can resist an enormous impact. If we replace the shot in a shotgun shell with seeds, they resist the impact and can gradually sprout when the conditions are right, sometimes hundreds of years later. Flowering plants did in fact reconquer the planet as soon as conditions permitted it.

All this supposes the presence of an amazing faculty: life creates the conditions for its own existence, not completely, for a minimum is needed for it, but the least complex life appears to be programmed to prepare the arrival of a more complex life (recall that diversity is part of complexity). In reality, it is much more than a programming, it is a capacity for invention and problem-solving. The turtle swims slowly in the problem, it is completely saturated with it, and then it lifts its head over the walls, and it jumps.

By analogy, we can keep in mind two points in regard to life's leaps. First, an extreme and tenacious resistance as long as the environment is hostile, then a tenderizing and a fertility as soon as the conditions for germination permit. Like a seed, a layer of resistance and a layer of fertility. Secondly, the result is never a simplified world, a one-chord harmony, but an even more complex world grappling with more diversified forces and problems more difficult to solve. It is just the stagnant level that is a simplification, a lessening of diversity, an obsession with competitive strategies that are totally out of date... The future level will be a greater diversity of ways of thinking, a greater originality, tougher dialogues, subtler levels of collaboration...

It is not enough, then, to resist; it is sometimes necessary to resist across generations with the help of a seed that is at the same time solid and full of adaptive flexibility. Since the advent of writing, certain books have played this

role. More generally, it is no doubt the vocation of the great works to travel across time on stable supports in order to bring about a leap into the future.

The seeds of change necessary for our present survival have probably been buried in consciousness for centuries. The seed preserves its life because it contains a food that remains alive. It will sometimes be surrounded by followers who will feed from it and transmit it. But it can also survive drily in the most total oblivion before coming out centuries later⁶³. This can be a verbal tradition. The people repeat it, transport it without much understanding it and one day the conditions are favorable for the renewal of the spiritual life of a people or a whole civilization.

A favorable condition is not necessarily a pleasant condition. Sometimes a seed is there to respond to a primary need that is disconcertingly evident, but the solution seems of no value because the problem is not sufficiently grave and desperate. For example, the very adaptive ecological traditions of a number of people appeared until now naïve and irrelevant. Today, now that the ecological problem has become glaringly obvious, we will discover their extraordinary richness. A little like certain cures for new diseases discovered in primitive plants in the Amazonian jungle, our social cures can come to us from cultures we have trampled. It is through our present consciousnesses that they will come to life and adapt.

However, never must we in any way await the arrival of a tranquil world, a harmony between three or four values, a single religion, a definitive ideology, the end of something, not even the end of injustice or stupidity, or the end of hope and metaphysics. On the contrary, this uniqueness and this totalitarianism of the mind are the problem, for example, the present totalitarianism of a certain way of conceiving of the economy. And therefore the solution cannot be another totalitarianism.

The process of consciousness has opening, never closing, as its characteristic. What takes place in intentional and voluntary action is always a simplification, a reduction, a goal. What takes place in the movement of consciousness always leads to more complexity, to a new collision of contradictions, to a diversification of philosophies and styles of life. Intentional and voluntary action aims at an end it would like to seize and possess. But the movement of consciousness cannot be anything but a creativity that uses its own contradictions to surpass itself.

This goes to show that every person oriented toward a goal would not survive in a world where this goal was finally attained; no one could live for long if her or his dream became reality. Something in the self comes and thwarts this peace. This something is consciousness, the invention of new finalities under the effect of contractions coming from the very foundation of life. True for a believer, an atheist, a Marxist, an anarchist, a neoprimitivist or a billionaire.

⁶³ For example, Marguerite Porète's book, *L'âme simple et anéantie* (The Simple and Annihilated Soul).

The sage manifests a resistance that he signs with his life. He has left an inheritance that no one really wants. Nevertheless, the inheritance stands firm because it has a smiling and happy face in a shell that inspires the most complete indifference. The inheritance passes through the generations. During this time, the sage smiles even though he is dead, for he knows that the world that will finally take his inheritance into account will be an absolutely astonishing, disconcerting world which will have nothing to do with the idea he has of the future. The plant will have taken a form so bizarre that the sage himself would not recognize it if he saw it. No matter, the seed is stronger than he is, his work will prevail, it can adapt, push, realize the unexpected.

Despite all that has just been said, militantism and the great traditions, one in the short term, the other for the long haul, do not suffice. Whoever wants to participate in the rise of consciousness with an eye to arriving at a more clear-sighted society must find the means to unite these two forces in a third. Penetration into the spirit of the great traditions (and not into their forms) provides an indispensable perspective. An historical perspective, for it is about long journeys in the history of thought, but also a metaphysical perspective, for it is about thought's diving into its own deepest depths. We then grasp, wholeheartedly and with both hands, the vital cable of consciousness in motion.

Militantism jumps into the political arena, attempts to act on immediate consciousness, the one that reacts to an oppression. It uses the energies of reaction, but also the timing of a broader movement, a collective rising in which it participates. If it wants to be enlightened, militantism cannot allow itself to play with violence, corruption or manipulation, for if not, it immediately falls back into what it is combatting. It must, therefore, constantly counterbalance its ideological tendencies with a concern for the facts, with the scientific verification of its pretensions even while being nourished by the great traditions (which are not necessarily taught in school). The one who wants to induce real changes keeps one foot in the millennial advance of thought and one foot in the militant life. Next, he (or she) keeps his head above two temptations: a spiritual life that isolates, a militant life that absorbs. She must make make with one what the other lacks and vice-versa. "I" and "we" are not resorbed in her, but work in concert by their very contradiction.

The name "workers of the light" might be given, perhaps, to these beings who believe in change, who feel their responsibility, who hope to play a positive role in the evolution of a greater capacity in human beings to adapt to themselves and to their environment. They are journalists, artists, scientists, social workers (in the broader sense and not strictly corporate), intellectuals or farmers, they are visible in the media landscape or totally invisible. Their characteristic: they work directly with consciousness. They participate out of consciousness and they participate in consciousness.

CHAPTER 9 : Journalism, being and becoming

The cosmological history of the universe seems to boil down to one thing: shedding light. All the rest follows from that. Perhaps it is the same for our history on earth.

By what mystery was journalism born? A singular profession if there ever was one. An amazing act of faith. Take one example: forty years after the Vietnam War, we can read in the November 23-29 issue of *L'Humanité du Dimanche* the reprint of the newspaper that may have changed something about horror⁶⁴. *Le monde fait face à l'insoutenable* (The world confronts the unbearable), this title stands out on the photo of a naked little girl whose clothes had been burned off by napalm. We turn a page, and we read under a photo of a theater: "Jean Genet's play, *Les paravents* causes a scandal. Members of the military and militants of the extreme right are trying every night to stop the play denouncing colonialism..." On the other page, under the photo of two stylish young women, we can read: "Daily life is dramatically changed by the appearance of supermarkets heralding the death of small businesses. Young women are adopting the miniskirt, tights, and color." Below, the article begins: "The memory of men who burn. In the lotus position. It is atrocious. The first one immolated himself this way on June 11, 1963. As Buddhist monks, it is their way of protesting against the South Vietnamese regime, supported and kept in power by the American imperialists." A word is added on the Havana conference where a number of countries denounce American policy. And the article continues: "The monks had, in a manner of speaking, chosen their death. But who has forgotten this other image of this naked little girl overcome with horror and pain, running on a country road, under a sky black with fire after a napalm bombing? She hadn't chosen."

Journalism's bet: when we bring to light a fact that we ourselves wouldn't like to suffer, the empathy of the majority will lead public opinion to declare its opposition to it. A gospel. Obviously, there is more: a rhetoric of the image, the juxtaposition of elements which, though apparently disparate, are triggers, and above all, the whole cup of blood and horror that preceded it, and that, when one more drop is added, finally overflows. The timing is decisive.

But if we return to the image alone, the famous image of the panic-stricken little girl running who knows where, followed by impassive soldiers... There is not just one possible reaction to this image, but at least four. 1) Imitation: the photo's horror might encourage more bombing because of the deterrent effect. The Romans didn't hide when they tortured. Stonings are public rituals. The idea is the following: if you don't want to suffer the same fate, submit. The photo could have served as deterrence vis-à-vis the enemy, whether internal or external. 2) Vengeance: the photo might have led to a reaction of hate. Those who viewed it might not have been able to hold to the idea of simply pursuing the ones who did

64 <www.jacquemagnin.fr/1966_monde_face_insoutenable>.

that, in order to make them suffer the same fate. Find the guilty and punish them. No! It's too complicated. All that needs to be done is to take overwhelming revenge on the Americans: "Eye for eye, tooth for tooth." The photo might then have made the war worse, supplied it with even more of the energy of hate. 3) Perversion: the little girl represents perfect innocence; we can't imagine that she would have done something like burn an American soldier alive. In the face of innocence, a behavior like dropping a napalm bomb seems extremely barbaric. But this is just it, massive bombing has been a commonplace procedure since the invention of the airplane. It is innocence that is rare and abnormal. Therefore it is what must be attacked. It must be proven that this little girl wasn't innocent. It is necessary that she not exist. In short, the photo might have aroused and brought about an epidemic of rapes so as to soil innocence and prove that it doesn't exist, with the result that massive bombings once more become commonplace. 4) Empathetic condemnation: the photo could also have aroused empathy: this must not happen again, either for this child, or for anyone. Dropping napalm bombs is untenable.

Without a doubt all these reactions have taken place, and others also. But the journalist bets on the last: empathy. He or she believes that if the facts are shown, consciousness will react in the direction of reducing cruelty and murderous madness. Certainly there is an art of showing things that encourages this orientation, but overall the journalist's act of faith rests on the idea that consciousness will choose behavior that encourages awakenings and that these awakenings arouse opinion to stand up against war and its abuses. Something in the human being doesn't succeed in being happy when it realizes that its happiness depends on the unhappiness of others.

There are, however, a million facts that plead against this act of faith. We could bring up several examples where people literally took pleasure in torturing someone. Others will be completely indifferent. A great number are so occupied with their goal that if the suffering of some appears necessary for this goal, they will minimize it (that's the price to pay). Scientists and journalists are dismayed because there is no longer any ice in the northern seas because of global warming. "Bravo!" the oil companies say, "now we can exploit northern oil and transport it by shorter sea routes."

It is not certain, then, that the majority will react in the direction of a universal ethic of the kind: don't do to others what you don't want others to do to you. So, why bet on this hope? Is it pure naïveté? In itself, there is no link between the facts and ethics. We are indebted however to thousands of journalists who have risked their lives or lost them to wrest the facts from darkness and return them to the light. With the help of the media, we have seen that public opinion can sometimes curb movements of gratuitous violence, or of shameless injustice, or of massive environmental destruction.

But the attempts to suppress information, twist it, or even reverse it are enormous. The rhetoric used to hijack the facts and reverse them amazes us with its contortions. Reactions of imitation, violence, vengeance and perversion are very

widespread. When demonstrations reach a critical proportion, the repression becomes bloody. If the movement wins, the counterrevolution can take insane proportions; in history, steps backward are not rare. In the long term, we have the disastrous feeling that we have never gotten out of barbarism. Has torture, the savagery of wars, rapes, the gross exploitation of man (and woman) by man, ecological disasters diminished or increased? No one can respond objectively to this question. Perhaps there is evolution in the very long term. Perhaps not. In a more nuanced way, it is possible that humanity is getting better, but its means of destruction are getting worse so that the situation is worsening overall.

Nevertheless, everyone can sense that disillusionment can only be a contribution to human unhappiness, a complicity against the emerging sensitivity of collective consciousness. If the world is shot to hell, we will surely know it one day. To assert this is useless. And it is apparent that if consciousness doesn't exist, the world is totally shot to hell because every act of denunciation will lead to reactions of imitation, vengeance or perversion, and it's the fall into Hell. From a practical point of view, in case of catastrophe, the best thing is to do everything to save the situation, for in this case there is a small chance of getting out, while if we give up, that small chance no longer exists. Journalism bets on this small chance, this last ditch of consciousness: to stake one's all.

Perhaps it is here that literature takes over, for, and this is just it, what justifies opting for the most improbable here (that humanity can become good for itself) is catastrophe. Without the supreme danger of a total loss, this desperate logic doesn't work, consciousness will return toward the cold truth of probabilities, for it loves truth above all things. Now, the cold truth of probabilities leaves us hardly any choice: the more the human being has great technical power at his disposal, the graver are the consequences of his acts against the environment and his fellow human beings. However, what is theoretically true (pessimism) is practically false in case of a final danger, in case of a danger such that we no longer have anything to lose.

The paradox is the following; if there is no final danger, let us analyze and arrive at the following conclusion: human beings don't change, they are merrily and eternally bad. But, and the point is this, if they don't change, but their means are more effective, a time will come when they put themselves in grave danger. At that moment, perhaps they are ready to stake their all. It even becomes logical to do it. The anxiety of catastrophe knocks the fatalistic truth down. Even if there is only one chance in a hundred or even in a thousand to succeed at something, it is this chance that must be attempted and never mind the most probable reality. Consciousness needs a sea of despair for its drop of hope to germinate. At the stage where we are, we don't manage to see other paths: our optimism rests on our radical pessimism.

Make unhappiness a fate, and die. This leitmotiv appears as one of the driving forces of literature. Total pessimism. No exit. We can think of Sillanpää's *Holy*

Poverty, or Lagerkvist's *Barabbas*⁶⁵. But in reality, at this extreme of the human tragedy, it is light that wins. Sillanpää's old, so wretchedly poor peasant appears more noble than all the known or unknown gods. Climbing down into the trench where he will be shot, he pulls up his torn underpants to save a remnant of dignity. And Barabbas, who remains apparently insensitive to any empathy, ends up abandoning his soul to holy Night. We are deeply moved by this fatalism, because, shaving off all hope in a transcendent salvation, he leaves the human being alone with himself, condemned to the ultimate reflex of saving his dignity. The turtle's leap becomes possible.

In reality, the aesthetic force of despair is a thousand times greater than that of happiness. A work of art cannot be made out of happiness, unless it is concentrated in an instant, a climax emerging from the darkness. Why? If there is something peculiar to consciousness, it is that it reverses being in order to create becoming. The Polish poet Edward Stachura leads us into this meditation⁶⁶: All you possess

All you will possess

You will lose one day

You will notice this sooner or later

Quickly or slowly

And not necessarily in suffering!

Because you can lose everything without pain

But with an extraordinary joy instead!

And then you will be illuminated by the Evidence

That you have never been forced to possess anything at all

Since all has been given us:

The body, the whole earth, and all that lives on the earth...

The sky and all that lives in the sky...

⁶⁵ Frans Emil Sillanpää, *Sainte misère* (Holy Poverty), Paris, Rombaldi, 1963; Pär Lagerkvist, *Barabbas*, Paris, Rombaldi, 1964.

⁶⁶ *Missa pagana*, trans. Barbara Seguin, for Bernard Émond's film, *Tout ce que tu possèdes* (All You Possess)

All we can possess is unhappiness

Even if it isn't real.

Know that true unhappiness doesn't exist!

Only happiness is real

And we don't have to possess it...

Since we are happiness!

This poem has no meaning in becoming because it manifests being. In passing from being to becoming, everything must necessarily be reversed. Let's imagine that all possible trees are there in being, totally realized, completely present. In such an infinitely saturated being, no tree could grow. Nothing. Becoming is totally annihilated by being. We have to make everything disappear if we want a tree to one day have a chance to come out of its own non-existence alive and thus gain its dignity. Being had to be encapsulated in a minuscule potentiality, an infinitely small point, this seed in the most total night, in its complete absence. And then, bang! Fifteen billion years later, a tree comes out of rock. And then, to ensure its becoming, it continually brings itself back to a minuscule seed from which it can spurt back up. The turtle's leap.

The happiness that is in being, that is being, once it is lost in becoming, ends up minuscule, microscopic, and in the atomic state it becomes the creative essence of the world. Like the first tree in the world, it can only be born from its absence. It is thus that it conquers its dignity.

Tragedy, whether cosmic or literary, consists of bringing becoming to life and therefore it requires despair. In this atmosphere of catastrophe prepared by literature, the ethic of empathy on which journalism makes its bet ends up becoming imperative. There is nothing to lose. We must try and try again as long as there is a glimmer of hope.

However, in the order of being, this ability to try relentlessly, to leap from self into the most radical night, cannot be called anything other than joy, and even the overflowing of joy. I don't even think that any other joys are possible. But this joy is just consciousness that suddenly unites being and becoming, in fact the same pure act. Hope lives in becoming as in a dim light, but faith comes from consciousness keeping one foot in being. And then, how could we arrive at the slightest dignity if we had remained in being? We would have been infinitely reassured by what is. Nothing would come out of nothing. Now, all must come out of nothing, for if not, there is ennui and nausea.

Finally, at over sixty, Barabbas ends up on a cross. If God were good and powerful, he would save him. He doesn't save him. Therefore, either he is good, but powerless - and we want none of him - or he is powerful, but cruel - we want none of him either. But if he has totally withdrawn from being to become

himself in consciousness, he could come out of the darkness even in the heart of Barabbas. And this is exactly what we discover: Barabbas manifests an absolute dignity because he is plunged in an absolute night.

How could consciousness be anything other than an exit from being in order to be an entrance into becoming? This is why, when they are in literature, the workers of light lay bare an almost absolute despair so as to be able to create an active hope as they practice journalism. Being assures us only that becoming will never stop, that creation will always come out of the night. This night need not, however, be blood-red or coal-black. Many other challenges await the human being.

CHAPTER 10 : The poet, child care, and the peasantry

The fact remains that writing enlightens only when it encounters a reality. Light travels in the night without illuminating the night itself. It only illuminates at the moment when it is diffracted on molecules. It is there that light gives life to plants and through them, to the rest of the world. Its maternal self which gave birth to us and which we mistreat.

My wife had a dream. We were in the Gaspé. On the road between the house and the sea, I was walking in the bushes when suddenly I heard a barely audible wail. There was a bag in the bushes. I took the bag. I brought it back to the house. My wife was reading in the kitchen. She opened the bag. A baby's cry burst out. It was the cry never heard.

Women have borne the burden of the people. They are big, they have heavy breasts. They are tired. The weight of their bodies glues their feet to the earth. They warm the cord of time so that it doesn't die. It is cold. It is blue with cold and they are alone in warming it. Now that we are all turning like squirrels in the wheel, who will listen to the baby's wail and the cry of the child?

I believe that the rupture is very old. The poet abandoned woman for the epic life a very long time ago. He abandoned the bag in the bushes. When woman and poet were separated, no one could escape wandering. What words could retain her carnal character! But the poet returns on the road of his own birth. He picks up the forgotten bag, once again takes the path toward the house of women. How could we get out of ourselves without children and without caring for children? What good is it to walk in the street if the children are left in front of the television!

"All is illusion. Poets have never borne the people's burdens", says the Nobel prize-winning Icelandic writer Halldor Laxness. In our civilizations, we have taken

care to dissociate those who speak from those who feed. This rift has made our intellectuals wanderers, and their words, a wandering of words.

If we must return to the creative feminine and the thirsty child, we must also return to the peasant. I have said that sixty-five million years ago, after the great extinction, flowering plants have bet on mammals, among other things, to disperse their seed. To make them efficient servants, they opted for reward: fruit, their taste at maturity, and color. The primates adapted their eyes to see the state of maturity of the fruits. This is why we, primates driven from the trees, see in colors, to be precise: in blue, in green and in red. But we forget that the true worker of light is the plant. Its ability to transform luminous energy into food constitutes a breathtaking feat.

The peasant bent over the plant, he observed it, he loved it and he respected it. He even became its servant. He serves the plant, he takes care of it, he gives it something to drink, he brings it its food, he relieves it of its parasites, he enlarges its place in the sun. Out of gratitude, it gives itself to him. The peasant stays connected, he is part of the struggle for life.

Imagine for a moment that a group of human beings had control of all the fresh water on earth and that it had at its disposal weapons to defend its possession. This group alone would possess all the power. The decisive power is never anything but the connection between an absolutely indispensable resource and the weapons that permit this resource to be controlled. If Neolithic societies had not separated weapons and peasants, if the plunderer had not been born from this separation, if, thanks to weapons, the food producer had had possession of his means of production, absolute power would have been his. The peasant was dispossessed very early, and he was treated as less than nothing, so that the social contradiction could raise up a political power, a manager of the latent civil war between the producer of food and the possessor of weapons. Such civilizations rest on one foundation: "You possess nothing", says the poet. "No! I possess a body that can be perforated", the peasant replies. "Nothing else." "And I have the means of perforating your body," says the plunderer. Thus the plunderer becomes master, the peasant, slave, and the poet wanders between the grass and despair.

The fact remains that the peasant is always bent over this link between light and life that is called "plant". He works in this link. If we observe him as one component of this link, he is an authentic worker of light. The plant seduced the primate with the reward of the ripe fruit's sugar, signified by color; it made it its servant. Then it captured the peasant in order to make of him an even more skillful servant, because of the flexibility of his intelligence and his submission. "Go get me water." And he goes. "Come scratch me a little." And he scratches. "Take care of my seed, put it in good ground." And he does it. Without the separation of weapons and peasants, the peasant would be cock of the walk. And this is doubtless why it was necessary to expropriate the peasants to the last man, and at any price. But this was not enough, it was also necessary to expropriate the plants, the seeds, the fertile land, everything that could bring a tiny bit of autonomy to a family.

The one who serves life in the garden, or in giving a baby her breast, the one who stays active in the struggle for life in order to tear out a green place on the rocks of the earth or on the surface of the seas while feeding his little ones, while teaching them that the service of life is the best means of freedom -- that one is without any doubt a worker of light. The poet will give up his wandering the day when he goes to the peasant to exchange his skill with words for bags of vegetables.

I am not saying: "You will adore the grass of the field." But I am saying that it is time to abandon the enormous machine of iron and fire that has been formed between the only two possessions of the human being: a body that can be perforated and the weapons to perforate it. It is time to leave the house of fear and the plunderer. I know that quite a while ago the bankers and the industrialists took control of the embryos of our democracy and that more and more they understand that the earth, the water and the air are as necessary as the possession of bombs and all the instruments of fear. So they buy the earth, the water and the air. They take possession of seeds and stem cells, genes and life's inventions, for they have the weapons.

Never has man confronted such a challenge. We have been totally dispossessed. We have become squirrels in a cage. We turn the wheel. It has been so long since we returned to the mountain, to the free air, to the net of the light and the grass, between animal and beauty, it was so long ago that we are afraid, even of death. But is there another path to our emancipation?

We must take the road of the earth again, a rifle aimed at our temples. Poets, women and peasants, together, with our children in our arms. A rifle aimed at our temples.

The break between the actors of life (women and peasants) and the actors of death (weapons and the possession they make possible) has condemned the poets to dance and wander. And besides, the weapons now are enormous and we have been enlisted in the plundering. The proportions are beyond all measure. And as always, the one without weapons has no other power than to walk without fear to meet the sick earth which can feed again and the abandoned child who once again can change the world.

They will kill him. Without a doubt. But we will all die in any case. The question, then, is not to survive as pitifully as possible between two rows of rifles along a predetermined superhighway, it is to succeed in putting our knees to the ground in dignity to drink and eat this light which forms us and can re-form us differently.

And death. What good could weapons be, even against a perforatable body, if death did not exist? Along with weapons, death had to be invented, but not for everybody. The pharaohs, the kings, the masters of arms, they did not die, only the slaves, the dispossessed died. Some prophets of the East and of the West came to remind us that before the reign of iron and plunderers, no one died, the ancestors hunted, cried and laughed hand in hand with the children and the parents.

These prophets had to be discredited, for if not, even napalm bombs would have had no effect. They managed to do this by inventing something worse than death, hell. To die forever. To die again. And then they went back to simple death. It was more believable. Fortunately consciousness is the faculty of not dying and of recognizing that "we are happiness".

We are born. A moment later, we disappear in the ashes of the earth. Then we spread this moment out over a number of years according to the length of our arms. Fifty, sixty, ninety years. But this rosary of life, strung pearl by pearl on the delicate tension of time, our fraternity, is still us and it can be as long as our love. This is why the one who leaves his plunderer self to embrace his vulnerable, vital, transformable and luminous self extends his life all the length of what he doesn't possess, but that he loves.

We are all immortal, some of us for a few years, others forever. All depends on the way of going to bed in consciousness each beautiful night in our lives. To see, to love, to restore, the three acts of consciousness.

CHAPTER 11 : The worker of light

On the lands of the Old One, there was a very aged peasant who had neither sold his land nor transformed it into a factory. He had observed that the light worked hard to feed him and make him, he and all the others. He was not going to abandon his ancestors, who had done so much to pick the rocks and break up the soil. It wasn't that he was rejecting the duty of increasing the yield, on the contrary, he wanted to improve it and it was just this that made him perplexed. Leaning on his shovel, he looked at the horizon...

At the University of Paris, a professor with graying hair had stood motionless for two long hours, his hand on a doorknob. He couldn't see things clearly any more. For quite a while, everything had been out of focus. Yes, he had shed a little light on a certain number of facts. He understood more about some complicated processes that explained some results, but this didn't add much. Thousands of questions were forming around some recent discoveries. The basis was challenged. A new avenue had to be opened...

In Jerusalem, a young journalist was investigating a double suicide. Holding hands, a Jew and a Palestinian had both smashed their heads against the Wailing Wall. Everyone could understand the symbolism of the gesture. They wanted to close the case as soon as possible. The next day, the Israeli newspapers and the Palestinian newspapers came to an agreement: they asserted that the two men were homosexuals. This seemed to reassure everyone. They had to get to the bottom of this event...

The peasant works with the light of the sun, the scientist with intellectual light, the journalist with the light of social consciousness. Three lights. Those days, they were united in the same old peasant leaning on his shovel. He was looking at his life as a journalist, then as a professor, and finally his retirement into the peasantry. Lives so different. He had been worked by events, by ideas, by landscapes. The result was surprising. It wouldn't have been possible to produce this man without the synchronized action of these three lights. To learn to work with the light to make consciousness advance, can one imagine a more direct and effective action to improve the world?

In the middle of his garden, bent over his shovel, everything seemed equal to the old man: good luck and bad luck, happiness and unhappiness, honors and humiliations, successes and defeats, the smallest vegetables in his garden and the highest mountains of Switzerland. He wouldn't have been able to say what had most contributed to what he was. In the light of today, everything converged toward this thing so strange, so difficult to touch or even to discern, this hollow and this thirst, this peace and this music that the ancients called "soul" (the Latin *anima*, "breath", that which has its vital principle in itself). The soul, the inheritance was leave behind, and yet the only thing we carry away. It seemed to condense before his dreamy eyes. The result of the three lights in his life appeared, a few centimeters above the plot of beets he was coming to pick. This resembled a little cloud that the smallest breeze could disperse. The presence of his soul was there before him.

The man wiped his face in the silence. The moments of his life wandered around him like a cloud. For what concerns memory, the soul is at bottom only a diversity of fleeing images. The man no longer felt the desire to catch one at random. He was simply fascinated by the whole story that shone like a cloud of multicolored fireflies before his perplexed face.

To form the little cloud of colors that sparkled and assembled in front of him, a chain of more than ninety years of relations had been necessary, rather compact relations with beings and things, animals, plants and humans, blows and hopes, shocks and pleasures, deep dives and difficult ascents. A production complicated to say the least, beneath the monster lighting of a sun of several billion tons, on an earth of rocks whose final centimeters struggle to remain fertile; a masterpiece had been necessary whose physical laws are still unknown, an excess of cosmic energy, mountains of chemical processes conditional on each other, an arsenal of gigantic means the inventory of which no one could ever take... Means totally beyond the imagination. What a factory for manufacturing souls!

The economy of means being one of the principles of the cosmos, we must believe, then, that a soul requires all this equipment. A squirrel contains almost nothing in excess, so why would there be an excess of energy in this cosmic cauldron that dozes off as it reveals its stellar diamonds! When all is said and done, something collects the little cloud of colors slowly detaching from the arborescent form of a pensive old man. A fragile harvest, to say the least.

Who will take charge of this dust of life that trembles in the moisture rising from the earth?

But, let's observe some more, and above all, listen. What is this fragile cloud saying today?

-- Everything is dear to me.

-- Everything, really everything?

-- Yes, everything is dear to me, even the smallest beet I picked this morning.

-- You mean to say that nothing, absolutely nothing, puts you off.

-- No, I am not telling you that nothing puts me off, I am telling you that everything is dear to me. Even you who interrogate and importune me at the moment when I'm preparing myself to cross the threshold.

-- So then, the disappearance of toads makes you cry.

-- I didn't tell you: nothing can sadden me. I told you that everything is dear to me.

It is true then that what it is all about here is connecting every being to every being by sacred bonds of attachment over an expanse of billions of light-years. A being is being woven here that will be connected in a single fabric of physical, intellectual and spiritual light, vibrating like the bronze sounding-board of a giant piano! It is certain that had the world been smaller and the heart not as deep, there would not be today this little cloud of colors held by the only reality that matters: all is dear to the gaze of one who has known the awakening of consciousness on a stony ground.

All that passes before his eyes possesses an inestimable value. Everything is worth everything. The pebble rolled by the tide (the peasant's garden borders the river's estuary), the sea that rises by the moon's influence, the moon that turns because of gravity, gravity that connects the atoms because of who knows what, the "who knows what" itself, everything is equally lovable, and this touches and unites the whole cloud of colors and music that will surely have to be called soul, since this is moved as much by itself as by everything.

Now, it's done, there is a cloud that rolls, turns and wanders, buried in the depths of the Milky Way, seeking to free itself from the terrestrial atmosphere. Perhaps somewhere there are eyes that see only these clouds of colors, nothing else. In the bottom of certain caves in Mexico, there are blind fish that react to light, thanks to their pineal glands. The fish trembles in the light like the belly's skin vibrates at a loved being's caress. Perhaps somewhere there is a kind of vibrating string that trembles at the light! Perhaps the old peasant, the former professor, the former journalist, has become a vibrating string! Perhaps when one is a vibrating string

truly attached to all of the rest of the piano, perhaps one becomes then the whole piano without ever leaving one's own distinctiveness behind.

Seen from below, the man has failed at everything. The two homosexuals committed suicide for nothing. No scientific problem was solved by the scientist's research team. The price of vegetables doesn't even provide subsistence to peasants here and elsewhere. No significant result came out of that life. No one cares about the old man with his naïve ideals and powerless action.

Yet he is concerned about everything. At the end of his life, no one holds him dear, but he is moved by watching the pebbles turn over in the sea's waves. So he says to himself: "I confess that it's a miracle. I can't imagine worlds, universes, human or inhuman histories that could have concluded with a result so magnificent. All this machination was necessary in order for me to finally be attached to things. God, how I love life, now that it's escaping from me!"

Born into the necessity of trust, he has arrived at an attitude that surpasses trust. Everything, without the slightest exception, is now his world, his family, his flesh, his blood, his skin, his bones. Light's work is like this: it surrenders itself to the one who takes it. Before, he saw only what pleased him or displeased him. Now, he sees only what pleases him. And since everything pleases him, he sees everything. He is no longer, then, one of those who looks in order to judge, he is one of those who looks in order to heal.

He meditates. "Since the beginning, I have wandered in the arms of the wind. Not one of my molecules was ever freed from the physical laws that are carrying me off, and yet: everything is supernatural. Had I been an individual, I would certainly have died centuries ago. The bird in a great migrating flock in autumn, the quark in its atomic cloud, the chemical molecule in the city of a mitochondrion, the bee in its swarm, the individual in the group he belongs to dies sooner rather than later. As for the group, it is saved by numbers. The group crosses time, supports transitions, keeps its strange identity across deaths, births and metamorphoses. I am an enormous totality: billions of cells, billions of relations, a numberless flock of birds. Fortunately I belong to an immense group: the primates, the mammals, the omnivores, and above all, the impulses of consciousness that animate what lives. Blessed are those who are all, for they will see the glory of the smallest things.

"Imagine for a moment that each one of these innumerable cells demands a little more flying space around it, let's say a few millimeters, and now I cover the whole earth. My heart swells like the geese jumping in a salt marsh, and I embrace the oceans. And what to say about the moments of my life, the contracted seconds, the buried memories! If I ever decided to visit them, to give them just the slowness necessary for consciousness, I would cover millennia. One day, I am going to decontract... I will cover the Milky Way. Don't you see that I am a people, as immortal as the people of the stars! What the sun waters with its light, I flood with my gaze.

"When I was young, I thought I was born in 1949. Then, I read, I traveled. I embraced the past all the way to Antiquity. Not completely, but as well as my own childhood. I set my birthdate back at least two thousand years. As I aged, I saw the future better, not its form, but its content of potential misfortunes and of good times pulled out of it. I cover perhaps a century in front of me. If I continued, I could envelop ten thousand years, and then ten thousand centuries."

There must, the old man thinks, certainly be a people of sparrows like that of men, that strange unifying bond that makes of it a whole. If there is something infinitely constitutive, it surely is the cement of all the totalities of which the world is formed. Each totality is a mystery and everything, even the smallest hydrogen atom is a totality already too complex for the calculation of its parts. Nothing in all the universe resembles anything like an individual consisting of itself, its existence depending on the fact that it is. Everything is a totality belonging to a greater totality, and the totality of totalities slowly crosses its eternity in the temporal roads of its mutating relations.

At the end of his life, the old man observes: "At last, the history of peoples is my business."

What is this old man a part of? Of what people of giants is he a cell, he who already is a people of molecules and cells? Of what migrating flock is he the bird? With what flight of Canada geese will he depart in the fall? The people who are calling him, the people who must carry him away, of what is it formed and what giant does it form?

The day completes its stride. The old man remains frozen, leaning on his shovel. The sun sinks into the ever darker colors of the sea. The North Shore darkens its knots on the horizon. And now the evening flight rises from the earth. Thousand of migrators assemble around the dying colors. One might have said that it was a wine stripping itself, the lees dozing at the foot of heaven to set a new wine free. And if we do not turn our eyes from the darkening of the sunset, we can see spots organizing themselves in the lee of the absent sun. The day's cohort prepares its departure. What can they resemble, these unknowns, these strangers? How is it formed every evening, this collective being torn from gravity by the last rebounds of the final rays?

Strangers! "Everything is dear to me," the old peasant answers back. Now do you see the importance of this completely inclusive feeling, this feeling that explodes the notion of strangers? They are mine. Beside me, a child torn to pieces by an antipersonnel mine, a woman stoned for adultery, a man freed from cancer... We look at each other as in a reunion. I am intensely concerned for them, and they look at me as a friend. Them, strangers! I have claimed to be their own for years, crying out for them, writing for them... I have been concerned for them from the beginning. And you think that this gathering is the fruit of chance, that there is no totality, that there is not a rejuvenated people here, taking off in order to see the world from a little higher. The kind of public transportation where there are only

strangers who scrutinize each other with distrust, this doesn't exist, for everything is dear to the one who has left the judgements."

To what work crew do we belong? When will we be hired? When will the wandering and solitude of this first stage of life come to an end? At what hour, at what day, of what year will they come to an end, these isolated, distraught, ineffective acts that have formed our preparatory solitude? Today, as we approach the threshold, we want to be part of a team of builders. We are tired of the teams of destruction, of power plays, of voting booths. We are tired of living to the detriment of an excluded majority and of a planet treated like an old coal stove. We desire to pass from the bureaucracy of death to the team of life...

"There, they have gone. At the moment when I was speechifying, they sprang out of the horizon. The flock has left the atmosphere in the last reddening of the ashes of the day. The dark spots have gathered, have risen. A fallout of dross and deposits was seen, and the jet rose in solidarity in a single blaze of sparks. They have gone to sleep. The vibration, no doubt, the fatigue produced by so great an acceleration, and above all this new feeling of confidence that precedes all types of births... There are so many houses, plans, challenges... In the nest of a nebula, they awaken one by one, numb, astonished, eyes still blurred. They are a little closer, a little more sedimented, a little more permeated with their unity; they are a little more singular, original, creative; one might say they are brothers, sisters, lovers... I am with them, and yet I remained here, I, the enveloper, the happy consciousness."

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