

THE LOVE
OF
UNIVERSAL REASON

Willeime

Presentation

From Plato and Aristotle, with their uncaused cause, to Immanuel Kant and his so-called contradictions of pure Reason, mainstream thinking has held that the principle of Reason is limited. Following in the footsteps of Democritus, Epicurus, Spinoza, Einstein... this essay, on the contrary, elevates Reason or universal Causality to the rank of absolute foundation of reality and extends it, without limits, to the entire cosmos. Based on the most recent scientific advances, I reformulate the complete explanation for the existence of reality: from the origin of the worlds to the most subtle faculties of the human mind. Breaking through the metaphysical paradoxes deemed insoluble, my thoughts then penetrate the secret cause of all things and revive a thousand-year-old philosophical current.

Integral rationalism has almost always frightened human beings. At first glance, the material world described by science condemns us to perish, makes freedom impossible, and ignores the meaning of all value. Unable to meet the challenge of our condition, Plato rejected the philosophers of nature, and since then, the majority of so-called “philosophers” have followed him, taking refuge in various intellectualized forms of spiritualism. On the other side, others are content with the appearance of things and oscillate between skepticism, relativism, and fatalism. Against these two impasses, I set out in search of true wisdom, the one that refuses both to flee from reality and to renounce the most precious impulses of my heart. Obviously, the origin of reality, the meaning of life, and the torment of death have still not found clear and coherent answers that would completely reconcile us with reality and, at the same time, convince us of their veracity, to the point that they are embraced by all friends of truth. Despite a few rare geniuses who once touched upon this ultimate philosophy, sublime answers to the great problems of existence have still not been clearly announced. Observing this void, I set out to find them for myself. After long efforts, I have now reached a level of coherence that exceeds all my initial hopes. I offer you here the chance to discover unsuspected heights.

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The Love of Universal Reason

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I - Introduction

Foreword

Every human being needs to know why he exists. Unfortunately, we are born alone and ignorant. Our existences are incomprehensible to us. They are brief irruptions into a world we do not know. To survive, we allow ourselves to be guided by imposed conventions. We cling to the beliefs invented by our ancestors. These fables put an end to unanswered questions. They tell us what to think and how to behave. They comfort us with the unknown. In return, we become their prisoner. Many of us believe ourselves capable of recognizing the truth. Yet, although it is so often striking, few know how to embrace it. Each of us carries within us his own image of the world. It is far too ingrained to be changed by reading, a conversation, or an experience. It is deeply inscribed within ourselves. It is attached to our sense of identity, which too often prevents us from correcting ourselves. Human beings cannot get too close to the black hole around which the false certainties of their time gravitate, and which will one day end up being swallowed up and disappear. Tomorrow, as yesterday, a new awareness will generate by reaction, a generation of men freed from current beliefs, values and hopes, but who will in turn be enclosed in a new circle of prejudices just as historical and circumstantial. Ordinary human consciousness is so strongly imprisoned by the empirical categories of social life, that it cannot extract itself from the dogmas of its environment, otherwise it would destroy itself completely, and there would not even be an “I” to observe the new order of things.

Appalled by the lies men told themselves, I was able to resist their hold. Nevertheless, without a basis for understanding reality, I completely collapsed. Lost in myself, devoid of any reference points, nothing made sense anymore. I detached myself from my own emotions, which I no longer trusted anyway. I slowly sank into a total disorientation where I ended up doubting the reality of my own existence. No longer afraid of what I might encounter, I began to accept everything that came my way. The last senses that still held me back gave way. No longer seeking to escape reality, I recognized my sad condition all the more easily. I saw the meaninglessness of my existence, and understood why so many men close their eyes to survive. Totally immersed in this

despair, I gradually felt my desire to live in this world fade away. No fable had charmed me. Nothing seemed able to reconcile me. I decided to stay here for a while longer to deepen my understanding of things, and I saw these feelings strengthen until this moment of clairvoyance when I felt the contradiction I had just raised! If I am only an insignificant speck, whose existence is absurd, there is nevertheless something in me that deplores this fate. Indeed, if I had not seen this world, I would have dreamed of it differently. Could my disappointment be a sign that my condition is not my finality? For a long time, I could not put into words what I felt. Strongly doubting my own feelings, I wanted first to understand these forces that guide me. I needed to know if I could trust them. However, as I had nothing left to lose, I decided to brave all these doubts, and so I chose to give these mysterious impressions every chance... There, I ended up deducing that everything around me seemed to oppose a lost, inaccessible, unrealizable ideal, but which nevertheless existed deep in my heart.

I examined what was overwhelming me, with no real hope of escape. Nearby, I saw most of the other men trying to flee from the truths that had also condemned them. I watched them fidget in all directions, under the influence of a susceptibility that revealed their hidden fears and repressed desires. I had not fled. I had, not without sadness, but calmly and honestly recognized that reality was destroying almost all my dreams.

There, from the depths of desolation, I discovered a strange feeling. A feeling elusive at first, so unexpected is it in this place. It took me time to realize. In this moment that everyone dreads and flees at all costs, I felt filled with an immense joy. Against the destructive breath that should have annihilated me, a power emanated from my soul. Something in me had not been vanquished. Something within me was invincible. The love of wisdom had just blossomed in my heart, and it was stronger than any disappointment that reality could inflict on me. In my conscious bubble, I contemplated my being and felt more pleasure in feeling myself than any failure imposed by the outside world. Unlike defeated souls who come to terms with things, I felt more sadness at the idea of renouncing myself than at the disappointments I had to face. I could not deny myself. I could not trade my complete intellectual and sentimental sincerity for fatalistic renunciation or the comfort of lies.

This world could crush me, but my inner Reason remained in my heart. Fate could crush my dreams, but my desires internally resisted the shock that should have annihilated them.

My fully reaffirmed awareness of myself had truly blossomed. My reborn sense of identity was no longer strongly tied to any emotion, memory, love, idea... but to the complete sincerity of my soul. If cataclysms were to occur again in my existence, I might see the contingent part of my identity die once again during this same biological life. I now knew that from the depths of my heart, an inexorable power would cause me to be reborn under new omens.

Thus, where ordinary men close their eyes to their fate and give up before they have truly understood what reality is, I now lived with the conviction of possessing something very precious, buried deep within, which could perhaps change everything. Contrary to the existential impotence which leads to fatalistic powerlessness over things, my human heart, freed from the weight of its condition, saw its hopes pushed beyond conventional limits. My fate having not succeeded in making me renounce my most intimate desires, from then on, I sensed that my superhuman will would give me the power to discover there, very deeply hidden in the secrets of truth, the means to be reborn and to realize myself even greater than anything I could imagine.

The limited understanding I was achieving of the true nature of things indicated to me that the discord between my aspirations as a liberated spirit and the condition offered by this material universe did not necessarily stem from a definitive incompatibility between these two entities, but could result from a simple incompleteness. Nature is not against human beings. She ignores it. The universe was not built to displease us. It was simply not designed for us. This nuance has a fundamental consequence: among the innumerable realizable possibilities, there could exist one or more that completely satisfy my aspirations. I was not born into it, because no natural force seeks to lead me there, and until I know better the real nature of things, nothing tells me that reality has not always contained hidden treasures of which I am simply unaware. Given the indifference of natural laws to me, the existence of a realizable, or even already realized, "paradise" is in no way guaranteed to me, but conversely, I cannot exclude it either. Only an advanced understanding of the secrets of the universe could allow me

to approach the answers to these crucial questions. Before attempting to solve these problems, I must first try to learn more about the essence of reality. I must understand the true nature of things, in forging the best possible explanation for the whole of reality.

Preliminary definitions

The word “reason,” with a lowercase “r,” will be used as a synonym for the word cause. A reason can be a logical cause, a physical cause, a psychological cause, or even an existential cause. Indeed, a cause for which an individual wants to live is a reason for being, that is, a goal for which he or she wishes to be one of the causes or reasons that will contribute to its achievement.

By “Reason,” with a capital “R,” I mean logical Causality. By “Human Reason,” I mean our mind’s ability to use Causality—that is, our power to establish causal relationships to think, judge, desire, and act rationally. Human Reason, therefore, refers to the intellectual faculties of human beings.

By “principle of Reason” I mean the principle of logical Causality, in other words the principle of calculation and reasoning . For example, the principle of Reason is why $1+1$ is equal to 2 and not to 3 (the word “reason” comes from the Latin “ratio” which means calculation).

By “Universal Reason,” I mean the situation where the principle of Reason applies to absolutely everything: to consciousness, to the universe, to metaphysics, and even beyond, if necessary. This position makes the principle of Reason the most fundamental law that nothing can ever shake. Universal Reason implies the integral rationality of reality, that is, the existence of links between all existing things, such that nothing is ever without reason, but that everything always has a cause, at least a logical one, which explains the fact that it is thus and not otherwise. The concept of “Universal Reason” is opposed to that of “Limited Reason” conveyed by skeptics and theologians who reduce Reason to a simple human faculty allowing us to order phenomena, but who assume that the foundations of reality are not totally subject to the principle of Reason.

The Bottom of the Secret

Paradox of Opening. The principle of Reason proclaims that all things have a cause. By virtue of this law, nothing can exist alone, solely because it is. Everything arises from something else external to it.

This statement unfortunately faces a serious problem. By definition, the universe contains everything. If nothing can exist outside it, nothing can sustain it. If the universe has no independent reason to exist, absolute nothingness should have filled eternity. Yet, a reality has emerged. Everyone can see this. Reality may be very different from the image we have of it, but our existences bear witness to a certain form of presence, definitively incompatible with total non-existence.

Thus, since a world exists, some have concluded that the principle of Reason is not universal. Where it would have died out, our universe would have emerged. According to them, everything has since become relative. The very meaning of things is circumstantial. What is for some, is not for others. What happens to you does not necessarily happen to me. Everything and its opposite would have already happened. Everything and its opposite would be equally valid. Without an absolute frame of reference, integral relativism decomposes reality, which self-destructs. Without a universal support, the very meaning of words disappears. No absolute truth can exist. Truth is not even earthly, and all the questions we ask ourselves will remain forever unanswered.

The hunter becomes the hunter! The argument you have just read applies equally to itself. It claims to show that no absolute truth can exist, even though it advances the following assertion: “no absolute truth can exist.” Although the path that has led us to this conclusion may seem valid to you, if Reason is dead, all causal deduction is a pure chimera and consequently even this simple conclusion cannot be universally stated.

He who thought he was catching is caught again! The absence of truth prevents any form of conclusion. All the sentences you have just read are beyond their rights, as are those you are reading now! I can no longer tell you anything and I have no right to say that I am not saying anything. Where am I? Everything is completely blocked.

Anyone who wishes to escape this spiral of infernal self-destruction must recognize the absolute universality of the principle of Reason. Being unable to refute or formally demonstrate the omnipresence of this principle, I observe that only the prior recognition of its universality guarantees a minimal meaning to reality. At the gates of rational logic, all forms of reality are extinguished, even the most extreme. In the name of the existence of at least some form of reality, I have no other choice but to admit the universality of the principle of Reason. If the human mind wants to be able to think about reality, it must first hold the principle of Reason to be an absolute.

A Mysterious Support. Because of the principle of Reason, the universe cannot exist alone, without reason. Therefore, I must assume the existence of what I would call, for the moment, a “support” for the reasons of this world. Indeed, if everything depended on the universe and if there were no absolute “external” to it to found and guarantee Causality, then the meaning of things would disappear, and everything would sink into the spiral of self-destruction that we have encountered. If in the past, this support had ceased to exist even for a brief moment, reality would have disappeared forever. Everything cannot be questioned. Whatever the true face of the universe, however twisted you can imagine it and much more, this universe will be supported by an independent base if only because it exists; and even if this did not exist, an immutable thing would define the stable state “not existing.” Despite everything, a guarantee of the universality of the principle of Reason necessarily resides in the foundations of all reality. With this mysterious support, the universe is no longer alone. An external and independent base now supports reality. Somewhere there is an eternal and irreducible entity that gives course to things. Whatever you are, even if this world is not what we believe, even if I am not here, I did not really write this sentence and you are not quite reading it right now, an absolute entity remains despite everything. Without it, nothing can be and nothing can not be. Without it, words lose all meaning, things become more blurred than mirages, reality sinks lower than nothingness. Thanks to this support, absolute truth exists, which authorizes me to seek the nature and meaning of my existence.

Since the dawn of time, men have admitted that there is

something that supports their world. This support that keeps everything in place, they have called God. Much of the confusion surrounding people's usual idea of God stems from the fact that for many, arbitrariness is not irrational, and that an arbitrary support is conceivable, even necessary. Monumental error! An arbitrary thing has no cause. It is therefore contrary to the universality of the principle of Reason... a universality that is necessary to save reality. Indeed, if the support of our universe were something arbitrary, this would imply that there exists a "place" where Causality is no longer respected. In order for the arbitrary support to remain in place and for everything not to end in infinite and indescribable chaos, there must be "a force," which is in fact akin to a reason, to maintain the first support. We can continue like this for a long time to push back the problem by creating gods within gods, but we will not form an absolute support. If we want to escape the abyss, we are forced to admit that, curiously, the reason for the existence of the base of reality is the base itself.

I have just rejected the thesis of arbitrary support in favor of that of totally rational support. I admit to having traded an inconsistency for a hazy mystery. Indeed, how does this mysterious base manage to contain and support itself, without violating the principle of Reason? Barely dissipated, the paradoxes resurface with a vengeance. However, if you agree to walk a little further with me, I will show you that they are not invincible. To do this, we will have to penetrate the depths of the secret, and then you will see, all the paradoxes will dissipate.

With the universality of the principle of Reason engraved in the foundation of reality, the irrational sinks into the impossibility of existing. Everything must have a cause. Nothing can exist arbitrarily. Therefore, the original state of the universe could only be the most absolute nothingness. Close your eyes and try to imagine what there was before the birth of everything. You see black, infinite spaces, entirely empty. You can reach an even more remote state. Eliminate space and time. Imagine an absolute void, where all volume is confined to less than one point and where time does not flow. You begin to perceive what there was before the birth of everything. There was only a strange void that I will call non-nothingness. Non-nothingness is the only possible starting point for the universe. Any arbitrary element defies the principle

of Reason, and this principle cannot be transgressed without destroying the essence of reality.

This reasoning brings us back to our age-old paradox. On the one hand, the origin of everything could only be an absolute nothingness that contains no arbitrary elements; on the other hand, a support must be immutable and eternal in order to found and guarantee Causality. Thus, believers proclaim that an external, transcendent God is necessary, without which the universe can neither exist nor endure, and atheists retort that this type of God is an arbitrary and irrational notion, which violates the principle of Reason, and in fact destroys any attempt to explain or even represent reality by human thought.

This paradox has endured for centuries. Yet it admits of a solution. Since God cannot have been generated, nor can he exist arbitrarily, without a cause, the “support” of the universe can only be spontaneous, necessary, and immanent to reality. If non-nothingness is the starting point for all forms of reality, it must already contain irreducible and perfectly necessary laws, which do not need a creator to exist and which are capable of giving birth to our world.

Logic and Necessity. We sometimes feel as if nature has decided that $1 + 1 = 2$, not 3 or 4. This result seems predetermined, as if a higher authority had dictated the principle of addition among the laws of nature. Let's place two marbles in a bag. To count the number of marbles, we perform $1 + 1$ and get 2. In fact, if you think about it, you'll realize that this result cannot be different. Addition is not a process. “ $1 + 1$ ” and “2” both refer to the same thing: the number of marbles in the bag. There is no need for a higher authority. Therefore, even in the most chaotic universe imaginable, $1 + 1$ will equal 2. Addition is not really a law, since it cannot be different. Addition appears to us as a law, but in reality it is so obvious and simple that it needs nothing to be applied.

Similarly, the Pythagorean theorem is a universal logical principle. Unlike addition, which is easily understood, this law is much less familiar to us. We need to express it in a sentence and learn it by heart. However, just as $1+1$ and 2 are two names for the same reality, in a flat space, “the square of the hypotenuse is equal to the sum of the squares of the sides of the right angle” is synonymous with a right triangle.

At first glance, we find certain laws arbitrary because they are not natural to us, but in fact, they are only points of reference discovered by our ancestors to contain the contradictions of human thought. These laws only appear to man when he is confronted with the impossibility of the absurdities he is capable of imagining. These universal logical principles do not need a creator to exist. Their obviousness solves the mystery of their origin. Their spontaneity allows them to be exercised everywhere since eternity. The logical simplicity of certain mathematical axioms is so profound that it makes them indemonstrable. Yet, their power of truth knows no equal in and beyond the universe. Here we are facing the depths of the secret. These universal logical principles are one with the mysterious support that holds reality in place. Since rational logic is the natural expression of the principle of Reason, it needs no foundation to establish itself and impose itself universally. It is self-sufficient. This is the face of the enigmatic support, independent of everything, which alone orchestrates reality. God is the principle of mathematical logic. God is the principle of Reason.

The entity that sustains the universe, being simply the principle of Reason, an irrational thing cannot exist in reality, but only in the confusion of human thought. When we look at our world so perfectly constructed, so marvelously organized, some feel the presence of something incomprehensible and unimaginable that surpasses human understanding. In the same way that the logical equality between the concept of a right triangle and the Pythagorean theorem is not innate to us, we do not see the connection between the original nothingness and the world in which we live. When we observe the blue sky, the stars, the ocean... we remain amazed and amazed. We wonder why the sky is blue and not green? Why is the Earth round and not flat? We wonder why things are the way they are, because we are able to imagine them differently. We wonder why $1+1 = 2$, because we are able to imagine $1+1 = 3$.

The universality of the principle of Reason implies the existence everywhere of logical connections that make it impossible for things to be different from what they are. The quest of science is to show that apparently incomprehensible phenomena are in fact more or less evolved consequences of universal logical principles. Since these principles operate everywhere and for eternity, the demonstrations we establish

thanks to them are not descriptions relative to the human mind, but the underlying ways by which something once appeared from non-nothingness. Thus, however complex the things that nature has generated, they all possess a rational explanation.

Originally, non-nothingness was therefore much more complex than we initially perceived. It contains an infinity of eternal mathematical logical principles. These laws are not imposed principles, but only a simple description of inescapable logic. Therefore, the arbitrariness surrounding the laws of nature is a human illusion. The only rule governing reality is to be what is logically possible. Armed with this understanding, we can solve the mystery of the origin of everything: the universe is the natural expression of universal logic that contains the infinite ocean of possibilities... and we are one of these possibilities.

Carried away by his overflowing imagination, man dreams of arbitrary or contradictory things and does not understand why these things do not exist. Ignoring the logical connections that would reveal to him that things cannot be different from what they are, and forgetting too quickly that he perceives only a tiny part of the cosmos, man fails to experience reality as necessary. Lost, he desperately seeks an impossible creator. Understanding the origin of reality is ultimately a difficulty more psychological than scientific.

Materialist Paradigm. This vision outlines a rational path to our origins. However, it is not yet entirely satisfactory. If it is now clear that certain evidences are not innate to us and make us see incomprehensible magical phenomena where there are only inescapable logical consequences, do universal logical principles nevertheless conceal all the richness and diversity of our world and our thoughts? How, moreover, could thought emerge from a non-nothingness directed by mathematical principles? The immense difficulty of understanding that we still have to clarify does not reside so much in the starting point of reality, but in the detail of the processes which, starting from non-nothingness, have led to the human mind and its overflowing imagination, capable of denying rational logic and failing to understand the simple, natural, and inescapable origin of all things and of itself.

Between the human mind and simple mathematical theorems, there seems to be an unbridgeable chasm. Yet, spectacular transitions

regularly occur before our astonished senses. When you were a child, you probably experimented with mixing blue paint with yellow and were surprised to see green appear! A priori, nothing in the prior observation of blue and yellow suggested such a phenomenon; nor in the observation of green, which seems an irreducible entity, while this experiment shows that it is in fact a constructed entity. This same astonishment resurfaces with the use of digital audio recorders, when we realize that this implies that all the diversity of possible sounds, instruments, voices, melodies, and music is therefore reducible to a simple sequence of 0s and 1s. Similarly, the study of biological organisms teaches us that monotonous and linear sequences of amino acids fold at every moment into complexes catalyzing specific chemical reactions, which govern the metabolism of all living beings. Subjected to blind necessity, simple elements can, by combining, cause superior properties to emerge. When certain organizational thresholds are crossed, new notions that previously had no meaning suddenly take on meaning. These extraordinary, yet perfectly natural evolutions no longer make the metamorphosis of a mathematical nothingness into a material universe, of inert matter into living beings, and of living beings into individuals conscious of their own existence irrational. This is a quick outline of how I now intend to offer you a rational explanation for the origin of everything. This is the outline of the logical bridge that connects non-nothingness to our world.

Warning

My thoughts are uncertain. They come from my mind, and I know my mind is fallible. It sometimes strays into logical errors. Moreover, there is no assurance that it has mastered the right concepts, that it is powerful enough to meet all challenges, or that I am free enough to reach certain conclusions. I could be swimming in an ocean of errors and illusions, unable to understand what is really going on. The validation of certain ideas by science reinforces my feeling that I am on the path to truth. They push back this dreadful doubt. Unfortunately, in no case can they make it disappear completely. The certainty of absolute

truth is not accessible to the human mind. This is an intrinsic limitation of our condition.

I must therefore be content with the best present truth. My self-consciousness necessarily implies the presence of a certain form of reality... a reality that I could not think of without the universality of the principle of Reason. As long as we consider rational logic as a simple faculty of human thought, we will assume it to be limited and probably incapable of revealing to us the hidden secrets of reality. On the other hand, from the moment we recognize the universality of the principle of Reason, then absolute truth exists, and is conquered if our thoughts are in full accord with this ultimate principle. Rational thought then becomes a divine light that illuminates the depths of things for us. All the laws of nature being complex states of rational logic, by studying all the possibilities offered by pure Reason, a very great intelligence could discover the whole of the laws of nature, and without itself being totally certain of the results of its own thought, have nevertheless grasped the entire nature of things.

The story that will now be presented exposes such an attempt. The three chapters that follow are an anticipation of what this final explanation of our origins might look like. I have tried to come as close as possible to this ultimate knowledge, however the limits of our current understanding have forced me to borrow unconfirmed scientific theories and to make many conjectures. If today, this attempt to pin down the final explanation of our origins is likely to be at least inaccurate in some respects, then you may ask: why did I write it?

In the comments at the end of the book, I will return to many ideas by discussing my scientific sources and alternative positions. However, the ambition of this essay is not to provide a scientific treatise, but to make one perceive the essence of reality in order to then lead to true philosophy. We will therefore be content with a speculative explanation which will have the merit of showing how to overcome what for many still seems insurmountable, by revealing how events as incredible as the appearance of physical reality, of living beings and of conscious individuals is possible in a perfectly rational order. Since our current knowledge is insufficient to claim to seriously conclude on the exact details of the processes, I propose a simplified explanation, based on general principles common to many scientific theories, which allow

us to glimpse the complete and entirely rational explanation at the origin of everything. For the moment, I see no other possibility than to admit that events must have broadly resembled what will now be described, that is, that the bridges drawn between all the laws of nature truly exist. I invite you to use the keys to understanding provided by this global vision to begin to glimpse the cosmos in its totality.

Let scholars consider this text as a source of propositions, ideas, and hypotheses. Let superstition see here crystallized the quintessence of everything it claims to be impossible. At present, this exposition has above all a psychological objective. The future will tell to what extent it corresponds to scientific reality.

The Origin of the Worlds

Logical creation ex nihilo. Non-nothingness is found nowhere, because, being itself more fundamental than the concept of space, this ultimate nothing will never be encountered in any particular place. Similarly, we cannot say that non-nothingness constitutes the zero instant of creation, nor can we say how long it lasts, because time is not defined in it. Non-nothingness is not a physical void. It is not an immense empty expanse that lasts for eternity, but it is a logical void. Non-nothingness is akin to the number zero.

By natural logic, zero is and remains equal to zero. Since nothing can ever spring from it without denying the principle of Reason, the universe is doomed to remain equal to zero forever. This point is settled. I won't play the trick on you by going over it again. But then how can our world exist?

Zero is actually much more complex than we usually think of it. Zero is equal to $(1 - 1)$, to $(2 + 1 - 3)$, or even to $(5 + 3 - 8)$. Zero is therefore not just 0, but it is the infinity of mathematical formulas whose sum is zero. Each formula expressing zero exists separately from the others. It is an independent mathematical universe containing a sequence of numbers whose sum is zero. Non-nothingness is therefore in fact a mathematical multiverse composed of all possible formulations of zero, from the simplest numerical sequences to the most sophisticated equations.

In some mathematical universes, zero is written $(x + 3y)$ or $(x +$

$2y + 3z - 1$). Such universe-equations admit an infinity of solutions associated in pairs, in tetrads... or more depending on the number of variables contained in the equation. For example, in the universe-equation $(x + 3y) = 0$, we find the pairs of solutions $(x = 3; y = -1)$ $(x = 6; y = -2)$ $(x = -1; y = 1/3)$... Each universe-equation is filled with the infinity of solution numbers that guarantee the nullity of its equation. As each variable $x, y, z...$ contains an infinite series of numbers, the cohabitation of these multiple infinite sets in the same universe gives rise to the notion of dimension. The variables $x, y, z...$ give meaning to multidimensional space. Depending on their number of variables, the universe-equations acquire one, two, three... spatial dimensions. Spontaneously, geometry appears within this arithmetic set.

Time. Let us observe the universe equations more closely, because in some of them an extraordinary property has appeared that is not immediately perceptible to us. To perceive it, let us begin by trying to imagine the point of view of a finite thing, that is to say the image that an imaginary observer located in one of these universes would have. To observe the internal geometry of his universe, our observer can connect the pairs, tetrads... of solution numbers. For example, in the universe $(x + 3y = 0)$, each value of x corresponds to a single definite value of y . Imagine a segment connecting each value of x to its corresponding value y . The geometric shape of this universe then appears clearly to you. It is observable as an infinity of segments of finite size and entangled in all directions. This geometric vision that an observer would have inside and the global view offered by the equation from the outside are only two equivalent points of view on the same universe. Mathematical reality can be perceived as an absolute entity (arithmetical view) or observed as an infinity of finite elements (geometric view).

The work of our finite observer becomes more complicated in universes with three dimensions. For example, in the universe $(x + 2y + 3z)$, if our imaginary observer starts from a random point and then tries to draw a triangle linking the three solution numbers, he realizes that he does not know the coordinates in the other two dimensions. If he starts from the point $x = 1$, he has an infinite number of possible combinations of y and z for the sum of the equation to be zero. Indeed, for $x = 1$, we can have $(y = -2 \text{ and } z = 1)$ or $(y = -5 \text{ and } z = 3)$ or even $(x = -8 \text{ and } z =$

5)... For any value of a point defined in one dimension, there corresponds an infinite number of pairs of other possible values in the other two dimensions. Is there really a geometry in this universe? Obviously yes, but we fail to observe it because for each defined value of a vertex of the triangle, an infinite number of superimposed solutions exist for the other two vertices. We cannot draw a defined triangle, but only a figure containing an infinite number of superimposed triangles . This problem shows us that a new property has appeared in this universe.

To perceive the internal geometry of this universe from a finite perspective, we must unpack the new infinity we have just encountered. Instead of considering the infinity of possibilities at once, we must decompose this new infinity into an infinity of instants, each showing a single possibility. Let's take our three-dimensional space and stretch it like an accordion to squeeze out an infinite fourth dimension, so that each slice of this new dimension shows a triangle in one of its possible configurations. The observer looking at our triangle along this new dimension sees it eternally deforming in infinite space. As it passes from slice to slice, the ends of the triangle move and explore all possible combinations. After an infinite amount of time, our triangle will have realized every imaginable configuration. Rise up out of this universe and fold all of eternity into an instant. See, you get the static universe, perceptible from the outside, containing all possible solutions. Again, both views describe exactly the same reality.

Within universes with at least three spatial dimensions, the very notion of dimension deepens spontaneously to the point of generating a new dimension that encompasses them all. We call this other dimension of logical space time. Time does not exist outside of universe equations, nor does it have absolute meaning for a universe taken as a whole. Time is a property that exists only from the point of view of finite and geometric things. There is therefore no absolute time, nor a gigantic cosmic pulse synchronized for the entire universe, but the flow of time will be relative to finite observers.

Since time has no meaning outside of universes, and all these developments are logical consequences of one another, everything that has just happened was instantaneous. We humans have simply made a conceptual leap. In fact, everything that has existed, exists, or will exist has already been realized. The infinity of universes is from all eternity.

Reality has always been fragmented into an infinite number of mathematical expansions that coexist in parallel. This is where the true history of everything begins and ends. Zero has instantly and forever reached its maximum degree of complexity.

Indeterminacy. Logic orders the mathematical universes, yet it is itself overwhelmed by the dizzying flight into which reality has plunged! Consider the previous example of triangles. At each instant, they move in the time dimension, but at each instant, the next arrangement of the triangle is faced with a multiple choice. Nothing can choose which solution should be preferred over another. No cause can determine which position should be preferred among the immensity of proposed solutions. Logic only says that the infinite time dimension contains all possibilities, but to construct the finite, singular reality that we observe, reality is confronted with a lack of logical information.

Since logic is the only law, and is sometimes incapable of determining one choice rather than another, solutions adopt all values among the infinity of possibilities, which, from the point of view of a finite observer, is observed as the appearance of random values. The initial indeterminacy cannot be maintained for singular things. At the crossroads, chance decides. When the logic of the universe is incapable of choosing, chance fills the gap and completes the construction of reality. This true chance reigns perpetually supreme at the heart of all things. With this omnipresent indeterminacy, emerges the unpredictability of each of the worlds. This permanent instability of reality is at the source of the dynamism observed at the finite scale, but it in no way alters the immutability of the universe-equation from the global point of view.

Our example, based on extremely simple mathematics, has the merit of both making us feel the emergence of notions such as time, movement, indeterminacy and the superposition of states, but also of revealing the deep links that all these concepts maintain between them. Within certain universe-equations using mathematics much more sophisticated than this small example, these notions deepen and become more complex to bring together the premises of an elementary physical reality. In geometric structures presenting several nested indeterminacies, the resolution of a first indeterminacy constrains the

result for the second. From then on, the order of operations is no longer reversible. Time acquires an orientation and physical causality appears.

Curved Space. I take you to explore the hidden recesses of non-nothingness, where nothing is ever created, and where we simply contemplate what is from all eternity. In these places, when rational logic makes us see things, they cannot not exist. Indeed, the essence of mathematical concepts is inseparable from their existence. In these lands, the spontaneous appearance of space and time has constructed the stage of physical reality.

Let's try to visualize triangles even better by drawing them on a sheet of paper. Our sheet of paper can be perfectly flat, or curved, folded, crumpled, so that the points, lines, and planes drawn on it become points, chords, membranes, and so on. In geometry, space is not necessarily flat, but can be more or less curved.

What can possibly determine the degree of curvature of space? We must recognize that the shape of space was not foreseen! This higher notion only makes sense in emergent properties. Logic therefore makes space appear, but it is itself surpassed because it engenders. Since the notion of the shape of space has indisputably emerged, but has not been determined, it cannot be constrained. In each place, the shape of space therefore oscillates freely to explore the infinity of possibilities. Space curves, relaxes, and changes constantly. Space vibrates randomly, to realize all the possible degrees of curvature across infinity, and thus fill the void left by logic.

Atomism and Universe Bubbles. Space is not an entity in itself. It exists only through the numbers that constitute it. In reality, there is no space. In the universe, there is no support like a sheet of paper. At the fundamental level, there are only the points corresponding to the solution numbers of the universe equation, which themselves define the emerging notion of space. In each place, the degree of curvature of space is therefore a potential carried by the points. Each point in space therefore possesses an additional quantity.

Let us take a certain area of space with a certain degree of curvature. This degree of curvature is a finite quantity. If we try to determine the potential of one of the points in this area, we are faced with

a serious problem. Indeed, in any part of space, there are an infinite number of points, so we would have to distribute a finite value among an infinite number of points, but such a division by infinity is impossible.

This problem shows us that we have gone too fast, and we have not taken into account a new constraint associated with the new notions which have just emerged. The notion of curvature of space necessarily implies a limit in the infinitely small, so that the degree of curvature is represented by a finite number of points, each having a finite potential.

What could possibly fix the value of such a limit? Just as the degree of curvature was not foreseen, this parameter was not expected. In order to fill this logical space, the universe still realizes all possible values for this limit across infinity. In some places, this limit is very large, in others it is very small, but it is still a finite parameter. Since there can no longer be any continuity between these different regions, the face of the universe is completely transformed. We perceive that there was not just one type of space per universe. There is no single unified block, but the universe is fragmented into an infinity of universe-bubbles, each locally possessing a lower bound that limits the possible size in its infinitely small. The infinite universe is in fact fragmented into an infinity of finite or infinite universe-bubbles. Within each of the bubbles, there is a minimum size below which nothing can exist. Space has a kind of internal mesh. Any segment connecting two points in the mesh has exactly the minimum possible distance in space. It is not divisible. The points of space draw segments, triangles, tetrahedra that are just as indivisible. These are the true atoms.

Materialization. Mathematical, Euclidean, flat, empty, and infinitely divisible space has metamorphosed into a physical space, more or less curved, with a discrete mesh. The points that populated this space have become an ocean of virtual particles at the border of physical reality ; and in the hollow of the curvatures of space, the particles carrying the potential of curved space acquire a higher degree of existence. By punctually conveying the potential energy contained in a unit of curved space, particles materialize, establishing a profound link between the presence of matter-energy and the dynamism of space-time.

Stories and Randomness. Atoms flutter and collide in infinite space as they encounter random events. While at the microscopic scale everything oscillates chaotically and unpredictably, at the macroscopic scale, large, stable structures emerge whose evolutionary possibilities along the temporal direction are statistically constrained by their past arrangement. At the large scale, atomic megastructures transform only part by part, and states follow one another.

The larger a material structure, the more likely it is to endure. However, no matter how gigantic, any finite structure evolves and is not indestructible. Nothing finite can be eternal. Only the infinite set of things is stable and immutable. Even finite universe-bubbles undergo these transformations. Here a new universe-bubble springs up, there another fades, and thus new universe-bubbles continually disappear and are reborn within infinite space. Inside each bubble, a physical reality appears with atoms that draw worlds. The evolution of these geometric figures gives rise to stories. If in a bubble, an observer indeed sees structures evolving over time, in fact at any moment, any imaginable structure is formed an infinite number of times, through the other bubbles. If a time and a history are indeed perceptible in every place in the universe, from the global point of view, the set of all bubbles is static. The universe-equation does not evolve. Across the infinite universe, all possible types of worlds exist simultaneously an infinite number of times, at all stages of their evolution. Nothing was created. Nothing was destroyed. Everything was already there. And through this speculation, we can contemplate what has been from all eternity.

Thus the worlds were born. Limited by their senses and their conceptual a priori, men do not easily perceive the absolute necessity that founds all things. They imagine that the impossible has been realized. Equipped with the eyes of rational logic, the wise man sees that nothing has been shaken. The reality we perceive is only a tiny part of the ultra-complex state of non-nothingness. Behind the mystery of the origin of the worlds lies a process of unstoppable simplicity. There was no choice in creation. Non-nothingness is another name for all-infinite, therefore the infinity of universes cannot not exist. Reality is the fruit of pure logic. God is not the first cause of the universe. God is the principle of logical Causality that reveals itself throughout the cosmos. From the principle of Causality spontaneously flows the only law governing the multiverse:

to realize the infinite ocean of possibilities. Thus, at every moment and for eternity, the daughters of logic will direct the destiny of the worlds.

History has always been a series of causes and consequences. However, nature did not create its elements completely welded to its cosmic necessity. Freed by the inadequacies of logic, things appear with random properties. In each universe, indeterminacy puts a definitive end to the word destiny. The future of each world is not etched in its past. The unpredictability inherent in the heart of matter makes the fate of each universe indefinite. Even if you had a movie perfectly showing every atom emerging from a bubble-universe, you could not completely predict the sequence of events. By following each grain of matter, you would be confronted with a crossroads. The logic of the universe opens the field of possibilities. It tells what is possible and what is not. Only reality writes history.

Big Bang. About fourteen billion years ago, a new universe bubble emerged. This belonged to an incredibly complex universe equation. Space was arranged into sophisticated structures. The behavior of atoms was greatly complicated. They were subjected to these natural constraints, which felt like forces, pushing them to assemble into advanced structures.

On a large scale, the original fluctuations left disparities. Some regions are more concentrated than others. Through the force of gravity, they attract surrounding matter to form gigantic clouds of dust and gas. A few hundred million years after the creative expansion, our bubble universe contains countless galaxies, themselves formed from hundreds of billions of smaller gas clouds. The force of gravity forces these clouds to collapse on themselves. The temperature in their cores increases as they contract, until nuclear reactions begin. The ball of gas suddenly stops contracting. It has just reached a balance between its own force of gravity, which tends to compress it, and the energy of the nuclear reactions, which tends to make it burst.

When the first star was born, light began to shine again in the darkness of space. Then, far away, a second star also began to shine, quickly followed by many others until billions upon billions of stars illuminated our bubble universe from all sides. Inside these gaseous balls, simple elements are transformed into complex ones. When a large

part of the fuel is consumed, nuclear reactions slow down, radiation weakens, and gravity takes over again. The core of the star contracts, its temperature increases and temporarily stabilizes thanks to new, stronger reactions, until gravity finally takes over. Then, the core of the star collapses, causing a shock wave that leads to a gigantic explosion. The 92 elements of nature are now available. Descended from physical principles, the laws of chemistry acquire their meaning and will combine these primordial elements to form molecules.

Nine billion years have passed since the Big Bang. In a galaxy called the Milky Way, a gigantic interstellar cloud condenses under its own gravity, giving birth to the sun. Fragments of the cloud also contract to form planets. Meteor showers fall on their surfaces, spilling the elements produced by the stars. Depending on the light and gravity conditions offered by the planets, the deposited elements evolve in different ways. On one of them, water accumulates until it covers the surface. Gases evaporate, creating an atmosphere, and at the bottom of its ocean, the ingredients of life gather.

The life

Chemistry of Life. In the ocean of the primitive Earth, various molecules combine thanks to the laws of chemistry. As molecular structures become more complex, the combinations become increasingly specific. Depending on its spatial and electronic structure, each molecule is like a key that can only fit into molecules with a complementary lock.

Random chemical reactions continue, generating billions of new, ever-more complex molecules. Each of these large molecules attracts many smaller ones that are locally complementary to it. By clumping together, these small molecules sometimes fuse together to form a new molecule, associated with the first. Through this process, some large molecules spontaneously create molds of themselves.

Each pair thus formed is a replicator: it is endowed with the fabulous capacity to reproduce. Indeed, when the two members of the pair dissociate, each will begin to attract small molecules which will aggregate and fuse together again to reform the complementary member. With each cycle of separation, the numbers are duplicated. The replicator

catalyzes its own synthesis. Its population then grows exponentially and billions of billions of copies quickly spread throughout the primitive ocean.

Ideally, a replicator should consist of two partners that establish weak bonds between them, because these bonds must break easily to allow the next round of replication. Conversely, the small precursor molecules that fuse to recreate each partner must be abundant and have the ability to establish strong bonds between them, in order to form a robust replicator. Of the countless types of replicators that have appeared on our planet, only one large family has stood the test of time: ribonucleic acids, which include our DNA.

The physicochemical differences that separate the many types of replicators impact their resistance, their ability to attract their precursors, and many other parameters that ultimately modify their ability to reproduce. In each environment, replicators less able to reproduce find themselves overwhelmed by all the others. Through dilution, they eventually disappear. This differential reproduction, between well-adapted and less well-adapted replicators, leads to a continual improvement in their replication capacity over the generations. As new variants constantly appear due to the imperfection of the replication process, all the different replicators are subject to constant competition that selects the most able to perpetuate themselves. The imperfect capacity of these molecules to reproduce subjects them to constant evolution. Blindly, this selective pressure gives rise to an apparent will to survive that overturns the laws of chemistry in the living world.

Evolution. The incessant proliferation of replicators quickly exhausts the reserves of precursors needed for their development. From then on, the struggle for survival accelerates. Through natural selection, replicators appear capable of digesting others and recovering their fragments for their own reproduction. The first selection, based solely on their physical strength, is followed by a second selection based on what the replicators are capable of doing to survive.

When they separate, each of the two parts of the replicator associates with small precursors. Most of the time, this process is interrupted before having completely reproduced a complete replicator and only partial fragments are synthesized. Instead of passively suffering

this defect, the replicator will use it to its advantage. Each region of the replicator, called a gene, gives rise to a replicator fragment with a particular activity. Quickly, replicators are selected for their genes and thus begin to produce an increasing number of molecules with diverse effects. To increase its survival capabilities, the replicator produces fragments of itself that are capable of binding to metals, and to many other types of molecules more suited to its interests. A wide variety of molecules are grafted onto replicator fragments and give rise to new possibilities. This strategy will prove so effective that quickly the replicator fragments will lose almost all activity and will serve only as a template to order the assembly of higher complexes.

A few hundred million years after the appearance of the first replicator, the struggle for survival is in full swing. Among the many strategies that have emerged, a new trick is about to become a true revolution. Through the products of their genes, some replicators manage to manufacture molecules that surround and protect them. This latest innovation has the great advantage of better retaining the replicator's products, which were once lost in the ocean. Enveloped replicators are quickly supplanting naked replicators. Within them, they synthesize myriad molecules that promote their replication. Thus, the first cell was born...

When life reached the pinnacle of cellular evolution much later, a new innovation appeared: the different copies of the same replicator learned to collaborate with each other. Cells carrying an identical replicator assembled into a multicellular organism. Depending on their position in the body, the replicators modulated each other to produce the substances that gave each area its specificity. All born at the bottom of the same ocean, plants, mollusks, and vertebrates would soon populate the surface of the continents. No one knew how far the replicators would go. Guided by their appetite for survival, they had already invented so many tricks to invade the sea, the land, and the sky. Beyond the complexity of all subsequent innovations, it is clear that the first molecular entity capable of replicating itself was the revolutionary principle that gave rise to everything that subsequently appeared.

After nearly four billion years of continuous improvement, replicators have built themselves ultra-sophisticated survival machines.

Their nano-gears have reached the level of virtuosity that allows organisms like us to exist. The very first living beings were exceptionally simple and took a long time to appear. Then, evolution gradually accelerated. Sudden climatic variations selected individuals capable of adapting quickly. Incessant cataclysms forced living beings to develop systems capable of amplifying random innovations. Thus, it took almost three billion years between the appearance of the first bacteria and the first cellular assemblies, while in just a few hundred million years, birds began to fly, insects appeared with a social organization, and mammals diversified so that a variety of rodents gave rise to species as different as us, horses, and dolphins.

In early species, transformations were slow because they were linear. Nature had to wait for a single line of individuals to successively combine a whole series of adaptations before crossing a new threshold. Driven by their blind will to survive, some living beings invented a way to combine all existing improvements in a single step. Instead of reproducing identically, individuals will interbreed. Each generation will produce different descendants. Some will combine within themselves the combinations necessary to cross a new threshold.

The first organisms to practice this method of reproduction merged, mixed their replicators, and then separated. To improve productivity and the chances of meeting, living beings developed a new strategy consisting of secreting small pieces of themselves, called gametes, which would then fuse with those of another member of the species to form a new individual. However, gametes are small and fragile, and few manage to form an egg. To increase the profitability of the system, some individuals began to produce larger gametes, containing energy reserves. Because these super-gametes were bulky and expensive to feed on, their production and mobility decreased. This strategy succeeded because it saw the coordinated evolution of other members of the same species. These members produced ultra-mobile gametes in very large quantities. This system has been adopted by all living beings since fungi and has given rise to two distinct subcategories in each species: male and female.

Animal Behavior. The unconscious will to survive is the driving force of evolution. It shapes bodies and resonates far beyond. Its purpose

is to regulate the animal's interaction with its environment. To this end, replicators invented the nervous system, into which they engrave their directives. They tell fish to swim, felines to leap, and bees to dance! Concerned about their survival, replicators didn't let living beings do as they pleased. Very early in evolution, they peppered their envelope with receptors, signaling pathways, and effectors to equip the body with reflexes. When certain external events are detected, the signal is transmitted to the muscles so that they contract or relax. For example, the sensation of intense heat at the end of a leg causes it to retract. Reflexes are a fantastic gain for the animal's survival. However, due to their automatic nature, these responses are far from always appropriate.

To improve the relevance of reflexes, new, more evolved structures appear to modulate reactions according to circumstances. They are formed of neural networks that locally centralize signals from different senses, compare the information, and then transmit or not the alert if a certain threshold has been exceeded. Initially dispersed, these structures quickly interconnect and assemble into a central structure. In invertebrates, the primitive brain takes shape and eventually consolidates most of the animal's decision-making activity. Signals from the stomach, sexual organs, and various senses flow into the brain areas. There, depending on how the genes have structured the neural connections, various instincts emerge. Since the brain is directly designed by the replicator, it possesses the memory of the species. Each type of animal has its own behavior. Within the brain, the arrangement of neurons defines different instincts and their relative importance. Now able to synthesize everything it perceives, the animal sets priorities. For example, detecting large movements signals potential danger, which curbs certain less discreet instincts, such as a call to females. The regulation of reflexes and instincts is a huge step forward and will significantly improve survival.

Intelligence. Up to this stage of evolution, the animal is a complete automaton. It does not experience emotions, but reacts only according to how its genes have programmed it. These genes were selected in a given environment, but the environment is constantly changing. Replicators cannot be satisfied with their slow evolution. They would need a second evolution to occur in accelerated fashion in living

beings, to adapt them to their current environment. Faced with the urgent need to create a system capable of rapidly inventing new solutions, fish and reptiles appear with a second brain, adjacent and connected to the first, but with a revolutionary functioning. Instead of directly programming all the neurons of this new brain, the replicators developed a more open system. After sketching out certain structures, they let the connections between neurons evolve freely, and draw maps almost at random; and they will entrust the primitive brain with the role of ordering this new brain.

At every moment, signals from the senses propagate into the new brain. There, sets of neurons function as activatable filters. Depending on the arrangement of their connections, these form maps that will themselves emit only when stimulated by a very specific type of signal. Among the colossal number of existing maps, only a small number are sensitive to a certain type of signal. For example, when the eye converts light into an electrical impulse, the different types of electrical oscillations transmitted by the optic nerve correspond to the elements present in vision, and these oscillations activate only a few specific maps in the new brain. Some maps are sensitive to the signal corresponding to a particular orientation of objects or even to a color.

Any signal from the senses therefore activates a few specific maps in the new brain and simultaneously stimulates instincts in the old brain. The primitive brain is unable to understand what the new brain perceives, but it can test whether extending one of its instincts to some of these maps promotes its internal order or not. The very fact that certain maps are awakened in the same context as one of its instincts suggests that they could be additional recognition abilities in that environment. However, since these maps appeared by chance, there is no guarantee that they are useful, nor that their use is not downright harmful. The primitive brain is there to bring order.

The primitive brain temporarily connects one of its instincts to the maps of the new brain that were awakened at the same time as it was, and then, over time, will decide whether to strengthen or abandon this connection. To better understand this, let's take the example of a map sensitive to an odor or a shape. If our animal's prey has this particular odor or lives near a plant easily identifiable by its shape, certain neural maps have regularly been activated in the past when our animal

consumed this food. The primitive brain then connected these maps to its innate instincts that ordinarily allow it to recognize food. Later, when our animal passes near this odor and/or this plant again, these maps will activate the food value in the primitive brain and direct reflexes to stimulate predation. If, afterward, the animal actually obtains food, and satiety follows, the primitive brain will see its internal order reinforced. It will then send a survival signal to these cards and strengthen its connection with them. Otherwise, if the connection is not validated, it will be gradually eliminated.

The primitive brain is responsible for judging the findings of the new brain. Over time, the continual selection cycles it operates on its connections lead to the strengthening of the structures it validates and the disappearance of all others. By preferentially consolidating its connections with the maps that match its values, the primitive brain expands its recognition abilities according to the animal's experience. From now on, certain colors, certain shapes, certain sounds in the environment are associated with instincts such as food, danger, and heat. An unconscious memory of the experience is forged. The correlated exchanges of these interconnected maps then give rise to superior recognition abilities. By associating sensitive neural circuits with certain shapes and colors, the means to recognize particular objects emerges. By selecting its own neural maps, the animal learns to recognize unknown objects and discovers new solutions. By dint of experimenting, it retroactively adjusts its perception and perfects its reactions. Thanks to this system, the new brain is able to find answers to problems for which it was not initially programmed: this brain is intelligent. Just as nature draws its ingenuity from the selection of replicators, the brain forges its intelligence by selecting its neural maps. The replicator lets the randomness of connections between neurons work for it and is content to build a system that takes what agrees with its values. It thus saves itself a gigantic amount of programming work and gives its envelope the bonus of adapting to its environment. Indeed, although it is the internal directives of the primitive brain that decide whether or not to keep the new maps, it is the environment that provides the information to test and validate these networks. Thanks to their second brain, vertebrates acquire the ability to identify unknown elements and invent intelligent reactions.

Such is life. The extraordinary intelligence of the great watchmaker truly manifests itself everywhere, it resonates even in animal behavior, without ever having been anything other than the universal logic expressed by the replicator's survival instinct. Evolution by natural selection is probably the most flagrant example of the spontaneity of the laws of nature. Through the will of living beings to survive, nature only fulfills the implacable logic of the universe. Faced with the astonishment and incomprehension of human beings, carried by its spontaneous principles, nature tirelessly pursues its creation with panache and intelligence.

The Spirit

Primary Consciousness. Throughout an animal's life, the brain adapts to its environment. Despite this obvious presence of intelligence, the animal is not aware of everything that is happening within it. Its brain operates blindly. It reacts only according to innate or selected instructions. Like an automaton, it processes information without understanding it.

Late in evolution, the brain of higher vertebrates acquired the ability to store lived elements in the form of memories that could then complement the instincts of the primitive brain based on the experience. The brain copies, sorts, classifies, and prioritizes the information contained in the maps activated by perception, and establishes new maps forming a memory of the experience. Unlike the rudimentary perception of digital computers that see only 0s and 1s and then blindly catch up with the brute force of calculation, memory super-maps are arrangements that, by structural analogy, confer the ability to directly recognize the higher meaning of complex things without calculation. Memory super-maps are forged by a long process of internal selection that transforms blank brain territories into multiple neural networks storing memories. The slow work of memorization draws maps sensitive to increasingly complex notions. With the sophistication of these maps, a true conceptual memory is born. Unlike the programs of automatons, whose meaning is contained and hidden in the arrangement of their circuits,

with super-maps, the animal acquires a sensitivity to the meaning of things. Its values and instincts are no longer only present in its body, due to automatic circuits that define them, but the very idea of its instincts is now also represented by a second level, in the memory maps. Every thing experienced, and every innate notion (fear, hunger, cold, etc.) is now reproduced in memory by a map recognizing these notions for what they are. The brain is no longer just a program that blindly obeys integrated instructions. It is now capable of identifying its own notions.

Imagine yourself as this animal. What do you see? Something? Such an animal is indeed no longer completely blind. In the pitch blackness that reigned in its brain, its conceptual memory gives rise to a small light that now intermittently illuminates the meaning of things. Flashes appear to it. They show partial images with meaning and emotional value. Thanks to their conceptual memory, mammals internally feel their innate and acquired values in the form of emotions that guide their instincts. They remember elements already encountered, and associate them with an emotional value.

These animals quickly manage to interconnect in real time the maps activated by their perception with their conceptual memory. At each moment, their brain identifies the elements perceived in the environment and can almost immediately link them to a concept. Thanks to the dynamic correlation established between the maps of perception and those of conceptual memory, the elements identified by vision, hearing, and the other senses are assembled into a coherent and meaningful scene. By recalling the present almost immediately, the animal sees a scene, which is in fact only a set of correlations in its brain. By linking the elements of its perception to the concepts in its memory, the animal becomes aware of the present passing before it.

Later, when it goes to rest, and its senses are put on standby, the process of consciousness can sometimes work in reverse. During sleep, it is no longer the perceptual maps that stimulate memory, but it is memory that retroactively activates the maps of perception. The animal begins to perceive the imaginary images, sounds, and smells that adorn its dreams.

The animal brain is passively aware of the external world. It lives like a leaf in the wind, at the whim of encounters, and like the leaf, it is not the source of what it experiences. The meaning of what an animal

consciousness feels comes essentially from the outside. This consciousness only undergoes affects subjectively without carrying within it any true intimate reasons. Although endowed with an evolved sensitivity, it is devoid of its own will, and remains the puppet of its instincts. The forces that drive it ultimately remain external to itself. The meaning of what it experiences does not belong to it. Unable to project itself through thought, its inclinations remain totally imprisoned in the present. The animal remains agitated by the flow of events, without a full awareness of existing, without a true soul.

Secondary Consciousness. Three million years ago, a group of primates developed new abilities to manipulate memorized concepts. These prehumans were able to establish concepts of concepts and associate their ideas in a large number of combinations. Seen from the outside, animal language, which previously produced only a single word at a time, was now capable of composing meaningful sentences. The resulting conceptual explosion gave these prehumans an unprecedented capacity for analysis. These new functions increased tenfold their understanding of the world.

At every moment, external events awaken memories that then combine to form multi-concepts. Reflection then takes on a whole new dimension. Faced with a situation, instead of simply reacting according to an instinct more or less modulated by its memory and then forgetting, this new animal uses its memories to think. The concepts awakened by the senses combine and awaken others that, in turn, rush into this cascade that returns to itself and enriches itself with each new cycle. Memory dethrones perception from its exclusivity in being able to trigger analyses. From now on, thoughts are continually initiated from memories and are no longer just a brief response to a sensory stimulus.

This instance of inner deliberation frees one from the present moment. By associating memories with temporal concepts, thought anticipates and imagines. It discovers so many things that previously did not arouse the attention of genetically programmed instincts. Consciousness expands its field of knowledge. Instincts no longer have total control. Curiosity prevails over primal fears, and the first man approaches the fire. Freed from old constraints, his field of interest expands. All the elements that make up his world are examined one by

one, and what was meant to happen finally occurs. Through cross-checking, the animal finally finds itself. When it becomes self-aware, it feels its own existence for the very first time: a person is born.

The newborn person is overcome by the feeling of being themselves, of being someone, of existing. They make their first affirmation: I am. Their own memory provokes an inner feeling. They invest their memorized self. This loop is their sanctuary. In this bubble, they are alone with themselves. Alone, faced with the fact that they are themselves. A sense of self has just appeared. It generates subjectivity, originality, and unpredictability. By associating itself with multi-conceptual thought, it will bring a spirit to life.

The individual was a notion integrated long ago by the relational concepts of the animal brain; however, before the awareness of being conscious, the concept of self had remained in a rudimentary state. It had not been the subject of in-depth memory. There was no extended image of the self, strictly speaking. From the moment the feeling of self appears, it causes such a profound shock that the individual constantly carries the memory of it ever since. The impressions resulting from the very feeling of self become the basis of his uniqueness. Although subsequent introspections will occur during his life, they will have little effect on the image already established. The essential thing is played out during the formation of this feeling. The memorial aftershock of this revolution decides our nature. Buried deep in his memories, each one carries the secret of himself. As long as the material arrangement that produced this structure remains intact, the essence of a unique being will endure.

The sense of self is unique to each individual. It emerges as the product of the higher organization of consciousness, supported by billions of neurons that have arranged themselves to form this unique structure. The sense of self is formed by a set of neural maps that are not isolated from the rest of the brain, but that interact with other maps, and affect the elements present in consciousness. Thanks to the intelligibility produced by rational faculties, a Causality between properties of neural maps operates, and allows some to significantly influence others. Just as a recomposition between geometric figures gives rise to new properties,

in the material soul, the various modes of association of the sense of self with the other maps present in the brain generate various states of consciousness. The sense of self gradually transforms the animal present into an awareness of the present moment, experienced as an appropriation of reality. From now on, during the awareness of the present, this inner feeling will constantly mix with the emotions, choices and feelings currently being formed. The cards of the sense of self are associated with the adjacent cards, and weigh on the emotions in formation. If the sense of self is strong enough, it can even appropriate some of them and transform them into intimate reasons. The depths of consciousness capture the primary data provided by the senses and mature them, sometimes to the point of becoming the main cause of the result obtained. Thus, at each moment, the particularities of the sense of self unite more or less intensely with the choices, actions and emotions of the body. The sense of self then becomes the source of desires that outline a true Causality internal to the individual. It brings forth an intimate Reason that belongs entirely to itself. From its inner feeling, the child's mind generates a will, ideals and dreams...

Despite the apparent continuity of the emergence of conscious desires with the evolution of nature, something completely revolutionary has just happened in the logical history of the universe. Something has been born with the mind... something that is not just another cause drowned in the infinite chain of causes. If the mind belongs entirely to universal Causality, and one can trace the succession of material causes of each of the smallest constituents that contributed to its formation, the overall meaning is irreducible and emerges locally with the form taken by the feeling of self, thus creating the heart of a true psychological Causality. The mind is the definitive origin of the meaning of its intimate desires. It forms a Causality of a higher order within universal Causality. It is a microcosm. With the mind, a miniature Reason appears within universal Reason. Like the principle of Reason, from which once flowed the infinite ocean of possibilities, human Reason, animated by the feeling of self, produces a microcosm from which spring countless intimate desires.

Freedom and Alienation. While the modalities emanating from the sense of self can influence and sometimes even dominate their

environment, the opposite is also possible and is most often the case. The newborn spirit arrives straight from the animal world. It initially emerges in a flood of emotions that do not belong to it. It arrives naked in a body directed by a replicator. It will take years of maturation for the sense of self to strengthen, organize its intimate emotions, and structure its desires sufficiently to truly take possession of the body, if it ever succeeds... Throughout life, determinists coming from the outside world constrain the self and limit its influence. The mind then continues to function, but under the action of a frustrated psychology, producing resentment, repression, and compensatory lies.

The relative freedom enjoyed by the mind depends on a dynamic balance of power. The mind is free when it acts in accordance with the determinations that come from the set of atoms that define its unique essence in its brain, against all the forces that oppose it in the rest of its psychology, its body, as well as in the order of the world. The effective freedom of a human person corresponds to its individual capacity to make its inner causes triumph over the order of external causes. The material soul theoretically allows the exercise of such freedom because it does not operate according to linear determinism. Under the influence of the sense of self, it initiates inner deliberations that can suspend ongoing judgments, and allow it to wait for the flow of random connections between neurons to arrive at a solution that agrees with it. The ideas, actions, and feelings we express are not always evolved mental constructs resulting from influences from the external world, but can mostly come from our inner being. This is how a free Causality appeared, of a higher order, irreducible to the individual, and living thanks to its awareness of being conscious. Animated by its sense of self, the spirit resists external constraints and brings its inner necessity to life. In its heart, through effort, the person forges the feelings, the ideals and initiates the actions that flow from its inner Reason. From there, will come its capacity to exist by itself and to resist external forces. Its instincts and social conventions will try to control it, but it will find, in the feeling of being itself, the resources to bring out its own will.

The Human Condition

In the course of its evolution, nature brings forth new values in finite things. These values have no meaning in the original logic. They exist only for themselves, independently of the fundamental level that generated them. Thus, physical laws produced the will to survive of living beings, which then blindly created the inner Reason of the liberated spirit. Physico-mathematical laws have no reason to be in agreement with the new values that appeared in these higher levels. The meteorite that comes from the depths of space to crash down on our planet, and destroy life there, obeys the principle of Reason as much as the conscious beings that populated its surface did. Thus, where the origin of evil remains an insoluble mystery for theologians, it is naturally explained for the materialist philosopher. The principle of the Real is unconscious and blind. It does not perceive the singular values that appeared in finite things. It is therefore natural that certain laws of nature are ignored by us.

This fact has profound consequences. Because God does not recognize the value of human life, entire sections of this world now find themselves at odds with the meaning and value of our existence. The liberation enjoyed by the spirit clearly comes at a price. Man cannot rely on the natural order. In the past, the transformation brought about by the emergence of self-aware individuals should have upset the order of the laws of nature. Indeed, the principles of life attribute very little value to the individual. Only the survival of the replicator through its population matters. With the emergence of spirits, the laws of life have become completely obsolete. Each spirit is unique. It contains within itself its own identity, which makes it irreplaceable. It lives its own experience and leads its own destiny. But, since the laws of nature do not recognize this, they are incapable of respecting its meaning. They do not take into account our uniqueness and remain blind to the true value of our existence. This is how our desires and the condition offered by this world could become incompatible. If the essence of each spirit had been recognized by God, then man would never be free. Prisoner, wherever he went, his existence would be perfect. His fate would always remain just. But man carries within him an essence freed from the order of the cosmos.

The dreams and desires of liberated man are the manifestation of a daughter Reason, which appeared within this universal Reason that constitutes the material universe. The self-conscious spirit is a divinity enclosed in the cosmos, condemned to live a limited existence, like a simple thing. This is the heart of the child who becomes aware of the world around him. This is the secret, which almost all of us have forgotten to protect ourselves from the sad truth. Although within ourselves the microcosm formulates intimate desires, freed from the order that surrounds it, it sees the effective realization of its desires restricted and crushed by the blind order of the macrocosm.

The soul of man is sick from his condition. This disorder is at the origin of religions that resolve the tension by inventing lying fables (the spiritualist promises of believers), or by inviting us to extinguish our singularity (Buddhist nirvana). Two betrayals that some beings are not ready to accept, however. For them, then, remains, far, very far away... the philosophical ideal, this dream of being able to overcome the human condition with one's moral and intellectual forces alone, and of achieving salvation during one's lifetime, without ever having renounced one's inner Desire, nor the truth of the material universe.

II - Philosophy

Preamble

I am now leaving the scientifically inspired approach that has prevailed until now, to embark on a quest for the most beautiful interpretation that I can formulate of objective reality. I am now moving from the explanation of the world to the experience of the world. I will attempt to bring you to a union not only intellectual, but also emotional, with reality. I will start from the stage of understood ideas, to move towards that of experienced ideas. I propose to show you how to free yourself from materialism experienced as a condition, by discovering materialism experienced as a liberation. I will try to help you reach this unparalleled state, where the force of feelings overturns old values and reconstructs your image of the world. Confrontation with the emotional consequences of this new vision of things will reveal whether you are capable of living these ideas as a philosopher, or whether you confine yourself to understanding them in a distant and impersonal way. The encounter that I propose to you with the enthusiasm of minds in love with universal Reason will tell your heart whether or not you are one of us. If you were already on your own journey and you join us, then you are sure to have a wonderful time.

I am taking you to finalize my thoughts with the four most eminent representatives of the love of Universal Reason. Democritus, Epicurus, Spinoza, and Einstein will accompany us. These four geniuses share, among themselves and with me, the same great conception of the cosmos and the spirit. Their thoughts outline the contours of a philosophical movement, where our integral rationalism leads to a radical humanism. Even if they accompany us, I do not claim here to teach the ideas of this or that character, but I only expose my vision of the world through the links that unite those who are animated by the love of Universal Reason. To you, dear reader, I present my vision of things while placing it in a historical perspective, so that this doctrine gives back what it owes to its fathers, and shows how much it is part of an extraordinary heritage, not to conform to it, but to extend it, sometimes to surpass it and to fully enjoy this divine power that was once attributed to thought when it carried us to these heights, the very idea of which has long since been forgotten.

A Millennial Current

Since human thought appeared on Earth, millennia dominated by superstition have followed one another. The irrational explains nothing, justifies nothing, and by definition contradicts itself. Faced with this sterility, somewhere, an unknown person realized for the first time the power of Reason. In the 7th century BC, Kapila created the first philosophical school in India. In Greece, Anaximander taught that the ultimate principle is the unlimited, and he too began to explain things by natural causes, while in China, Confucius called on men “to develop and restore clarity to the luminous principle of Reason that we hold from heaven .”¹

The culmination of this surge of rationalization of reality is reached when Leucippus proclaims the universality of the principle of Reason: “Nothing happens without a cause, but everything has a determined reason and is due to necessity .”² In the resplendent city of Abdera, the universality of the principle of Reason resonates in the young Democritus, then a pupil of Leucippus. After an extraordinary journey through Egypt, Ethiopia, Persia, India... Democritus returns to Greece endowed with prodigious knowledge. His long quest has come to fruition. He has deepened the hypothesis of atoms and pierced the mystery of man, of life and of the entire universe. He has understood that the principle of Causality is the ultimate law, that it is expressed within an infinity of worlds, where the ocean of possibilities is realized:

“This is what I say about all things .”³ “A whirlwind of all kinds of figures has separated from the whole .”⁴ “Our heavens and all the worlds have chance as their cause: for it is from chance that the formation of the whirlwind comes .”⁵ “The fortuitous connection of atoms is the origin of all that is .”⁶ “The universe is infinite because it is not the work of any demiurge .”⁷ “The worlds are unlimited and different in size: in some there is neither sun nor moon, in others the sun and moon are larger than in ours, and in others there are several. The intervals between the worlds are unequal. In some places there are more, while in others there are fewer. Some are growing, others are at their peak, and others are

dying. Here they are born while there they disappear by colliding. Some worlds are deprived of animals, plants, and all moisture . ” ⁸“ The humid is primarily responsible for life . ” ⁹“ The body is moved by the soul, but the soul is something corporeal . ” “ ¹⁰It disintegrates at the same time as the body .

” ¹¹After the public reading of his work “Megas Diakosmos” [The Great System of the World], Democritus acquired considerable renown. Having become the equal of a god, the people of Abdera erected numerous statues to his eternal glory. “ The name of the philosopher Democritus has been inscribed on the monuments of Greek history as that of a personage to be venerated more than others, and endowed with a very ancient prestige, ” ¹²observed the Latin historian Aulus Gellius. A true incarnation of wisdom, throughout antiquity, the memory of Democritus remained in people’s memories as that of an unequalled genius. “ What wise man has ever lived and done a work equal to that of Democritus... the best of all philosophers ?” ¹³asked Diogenes Laertius, “ the most subtle of all the ancients ,” ¹⁴said Seneca.

“ The divine Democritus , ” ¹⁵as Lucretius calls him, had an extraordinary successor, a Democritean who deepened and adapted his thought to put it at the service of the liberation of human beings. In those remote times, “ when humanity lay on the earth, crushed under the weight of religion, which from the cantons of heaven cast its horrible gaze upon mortals, for the first time, a Greek, a mortal man, dared to raise his eyes against it, the first dared to oppose it, and nothing stopped him: neither the prestige of the gods, nor lightning, nor the menacing rumblings from the sky, which only further excited the ardor of his courage, and his desire to be the first to force the bolts of nature. The force of his spirit therefore triumphed, and soared beyond the burning ramparts of the world. He traveled the infinite universe on the wings of thought to return victorious, to teach us what can be born, what cannot, and finally why all things have a power delimited by limited laws. Now the turn has come for religion to be overthrown and trampled underfoot, a victory that elevates us “even to the heavens ” ¹⁶announces Lucretius, disciple of Epicurus.

After reading the books of Democritus, Epicurus completely rejected the religion of the crowd in favor of the quasi-religious feeling he now experienced through the rational contemplation of the cosmos.

To those who came to listen to him in his garden in Athens, he explained that “ the universe has always been and always will be what it is now, for there is nothing else into which it can change itself, and there is nothing outside that can act upon it . ” “ ¹⁷Within the universe, not only the number of atoms, but also the number of worlds is infinite . ” ¹⁸Proclaiming that pleasure is the principle and goal of life, Epicurus denounced the absurdity of the wars of kings and welcomed women, slaves, and passing strangers to philosophize with him in his school. He, the friend of all men, laid the foundations of the social contract and opened the way to the happy life. A true prefiguration of Christ the Savior ¹⁹, for more than 500 years, Epicureanism spread throughout the Roman Empire. The number of Epicureans became so great that even an entire city would not have been enough to contain them all. Every month, they gathered to celebrate the birth of the liberator, this god-man who had risen to proclaim the independence of the individual against all the enslavement imposed by traditions, superstitious threats and the fate of fatalists. “ Happy is he who has been able to penetrate the secret causes of things, and who, trampling underfoot all fear, despises the inexorable destiny and the threats of the greedy Acheron (the underworld) ” ²⁰sang Virgil.

Despite the influence of these early Enlightenment, religious fanaticism prevailed first in the West, then in the East, and eradicated the ancient genius. After a millennium of totalitarian obscurantism, the rediscovery of this lost paradise began its renaissance in Europe ²¹. Gradually, humanists rehabilitated Epicurean values: theology receded, pleasure finally became acceptable again, and praise was given to the autonomous and reflective individual who opposed the dogmas of authority. There, Leonardo da Vinci spoke of necessity as “ the mistress and guardian of nature , ” ²²while in his Dominican convent, the rebel priest Giordano Bruno became aware of the falseness of Judeo-Christianity. Then a heroic fury was born within him to overthrow this evil empire. Against the idea of an external god, Bruno conceives the self-sufficiency of the cosmos, and sees in his thoughts an infinite sky, filled with an infinity of worlds. Galileo then points his astronomical telescope towards the celestial heights, and Aristotle's metaphysics finally collapses.

It is at this time, in Amsterdam, that the great master of rationalism is born. While René Descartes had been content to restore Reason as the only human means of leading us towards the truth, Benedictus Spinoza praises universal Reason as the foundation of reality and extends it without limits to the entire cosmos. Proclaiming that Causality penetrates all things, Spinoza deepens his understanding of nature, from the functioning of feelings to the organization of societies. The illegitimacy of monarchical powers and morals based on superstition then bursts into the open. Instead, Spinoza proposes the social contract and speaks of a democratic republic established for the happiness and freedom of individuals...

What philosopher has ever lived and had an influence comparable to that of Spinoza, the trigger of the Enlightenment movement? “ **I know nothing else... enchanted Gotthold Lessing, there is no other philosophy than the philosophy of Spinoza** ” ²³. A century later, Epicurus’ disciple, Thomas Jefferson, declared the inalienable rights of human beings and their “ **right to the pursuit of happiness** ” ²⁴. Witnessing the triumphant Epicuro-Spinozism, the revolutionary Louis Saint-Just exclaimed: “ **happiness is a new idea in Europe** ” ²⁵. Across France, revolutionaries gathered in temples of philosophy to celebrate the cult of Reason, reviving the tradition of Athens, the cradle of Western civilization, once consecrated to Athena-Minerva: the goddess of Reason, intelligence, elevated thought and wisdom, surprisingly represented in arms by the ancients, because she was, for them, also the protector of heroes and the goddess of strategic reflection and tactical know-how, who holds in her hand Nike, the goddess of victory.

Since the genius of Galileo, astronomy, physics, chemistry, biology, paleontology, anthropology... have continued to offer masterful confirmations of the ideas that Democritus had formed about the cosmos, the living, man and the mind ²⁶. His conception of matter finally became unanimously recognized in May 1905, when the man who was to become the greatest physicist of all time confirmed that matter is indeed organized into corpuscles ²⁷. In this miraculous year, Albert Einstein completely refounded our understanding of matter, energy, space and time. Leaving behind a group of narrow-minded empiricists ²⁸, his mind seized the infinite power of pure Reason, lifted a corner of the great veil,

and glimpsed the hidden structure of the cosmos.

There is more than a simple coincidence in the meeting between Einstein and Democritus. Einstein admired Democritus much more than the brilliant announcer of his own discoveries on the discontinuity of matter and light. He saw in him the most ancient sage animated by the love of universal Reason, this quasi-religious sentiment which guided his scientific quest and founded his claim to be able to discover “ *the thoughts of God* ” ²⁹.

The Intellectual Love of Universal Reason

In every system of thought, there are axioms, definitions, and implicit presuppositions that are neither demonstrable nor refutable from within that system. To establish their veracity, one must step outside the system and study them in a larger framework. Generally speaking, it is never possible to discuss the validity of certain ideas from a point of view that includes them. To judge them, one must extract oneself to a more fundamental view in order to analyze them from the outside. This problem, extrapolated to the entire cosmos, by definition the largest of all systems, suggests that the demonstration of the ultimate principle is not possible from the inside. The opponents of integral rationalism are therefore correct when they conclude that the founding principle of reality cannot be formally demonstrated. Where they are wrong is to claim that it is necessarily elusive and incomprehensible. Indeed, the essence of the secret could be a very simple truth, known to all, although we are incapable of proving it in logic... And indeed, one cannot establish a demonstration of the principle of Reason without, at the same time, using this principle, which renders any attempt null and void. This impossibility of establishing a demonstration of the principle that makes any demonstration possible is not a necessary limitation to truth in itself, which would imply the existence of a transcendent force that would surpass it. It is only an inability of the beings contained in the universe to formally establish a proof of the ultimate principle that supports everything. Contrary to a definitively reductive limitation, it is the very understanding of this impossibility that arouses my rational intuition of

being faced with the most fundamental principle there is. Although this observation still does not constitute absolute proof, the degree of truth that springs from it is incomparable with the irrational beliefs stemming from dogmas formed for moral or religious motives. My knowledge of the ultimate principle is akin to the immediate understanding of an eternal mathematical truth. Spinoza called it “ **knowledge of the third kind** . ” ³⁰Confronted with our logical condition, you can declare yourself dissatisfied and condemn yourself to the most extreme skepticism, or you can now be reborn by linking the deepest sincerity of your being to an intellectual love for universalized Reason, which will confer the highest mark of truth on the ideas and feelings constructed by the logic of your thought.

“ **What really interests me is whether God had any choice in creating the world, that is, whether the necessity arising from logical simplicity leaves any degree of freedom,** ” ³¹Albert Einstein confided. Indeed, if the necessity arising from logical simplicity, elevated to the rank of God, leaves no degree of freedom, there is no longer any insoluble enigma, nor any eternal mystery. There is not even a why. The bottom of the secret is simply before our eyes, and it is only because the human mind does not immediately perceive the present interrelationships, and because it has the capacity to produce errors like “ $1 + 1 = 3$,” that we lose ourselves in absurd chimeras by imagining transcendences upstream of things we do not understand, to resolve them, while the inexorable logical necessity has already fixed everything internally. “ **All things have necessarily followed and continue to follow with equal necessity, just as it has been the nature of a triangle from all eternity that its three angles are equal to two right angles ,** ” ³²explained Spinoza.

Throughout human history, few have recognized the essence of reality in the principle of Reason, and even fewer have marveled at it. In this, Spinoza is probably the most profound. Long ago, Leucippus understood the depths of the secret, and Democritus composed the oldest rationalist and comprehensive philosophy of everything, from the foundation of material worlds to the most subtle capacities of the human mind... the vision of the cosmos that inspired Albert Einstein. Guided by the feeling of living in a totally rational universe, Einstein devoted his

life to trying to unify all the laws of nature in order to discover the logical framework that governs our world. Today, his successors continue his quest and build new bridges. One day, all sciences, from the physics of the vacuum to the biology of consciousness, will be unified. The advances of my time have allowed me to come a little closer to the bridge that links God to his infinite creation.

God is the principle of Reason. Causality is omnipresent. It is everywhere. It is within us, in our thoughts, in our emotions, even in the deepest intimacy of our being. By the sole force of its inexorable necessity, the principle of Reason has engendered the infinity of worlds. Consequently, there is an equivalence between this principle and the eternal cosmos. The creative principle is not the external cause of reality, but is one with reality in its totality. “ **God is nature,** ” ³³said Spinoza. Reality is the expression of the purest rationality realizing the ocean of possibilities, and therefore containing “ **an infinity of infinitely modified things, that is to say, everything that an infinite understanding can conceive .** ” ³⁴Like a mathematical truth, totality exists only by its internal necessity, it is maintained only by its inexorable logical simplicity, and this is indeed the only possible final answer to the fundamental question of the existence of reality. Everything that reality contains and the very fact that there is a reality is strictly and perfectly necessary. Even if our intellect struggles to grasp it, it sometimes manages to glimpse the logical perfection that is revealed in existence. The mind then surprises itself by observing itself touching the absolute, which triggers a cosmic, quasi-religious feeling. “ **The religious feeling engendered by the experience of the logical understanding of profound interrelationships is something different from the feeling that is generally called religious. It is more a feeling of admiration for the order that manifests itself in the material universe,** ” ³⁵explained Albert Einstein. “ **I can understand your aversion to the word “religious” to describe the emotional and psychological attitude most clearly revealed in Spinoza. I have found no better word than “religious” for the faith in the rational nature of reality which is, at least partially, accessible to human thought. Once this feeling is lost, science degenerates into an uninspired empiricism .** ”³⁶

After “ **Megas Diakosmos** ” [The Great System of the World], the timeless masterpiece in which Democritus had taught men that the

cosmos is the natural expression of universal Reason, he then wrote “**Mikros Diakosmos**”³⁷[The Small System of the World], a new work in which he described man as a microcosm guided by his individual Reason. Unlike ordinary men who use Reason as a limited tool, the wise man in love with universal Reason sees in his intellectual faculties a divine power. He feels he is in possession of the key to everything. Seeing that his mind functions thanks to a biological replica of the principle of reality, Democritus proclaimed that “**the principles of the intellect are gods**”³⁸ and then identified himself as “**the voice of Zeus**”³⁹. Human Reason, this “**divine light**”⁴⁰ as Spinoza called it, is the faculty of our brain that reproduces Causality and gives us access to the natural order engendered by universal Causality. Where theologians demean man by claiming that the part cannot understand the whole, we perceive the persistence of the ultimate principle living in all finite things, so that “**the more we understand singular things, the more we understand God**,”⁴¹ wrote Spinoza.

Henceforth, the being animated by the love of universal Reason is no longer condemned to remain in the condition of original man, that miserable creature, humiliated and crushed by the supernatural. Thanks to his rational thought, he can break his condition of ignorant animal, frightened and projected into an incomprehensible existence, to rise to his metaphysical plenitude. Everything appears in its eternal and immediate simplicity to the mind that accedes to the love of universal Reason. With this feeling, the mind can intuit the totality of reality, offering itself the power to travel the infinite universe on the wings of thought. In contrast to transcendence, which is absurd and degrading, the wise man experiences, fascinated, the feeling of immanence arising from universal Causality which is expressed in infinity, where an unintelligible number of worlds, forms of life and consciousness are born, die, and reborn in unlimited times. Metrodorus, a disciple of Epicurus, insists that you remember that “**while having a mortal nature and having a limited time, you have raised yourself through reasonings on nature to the unlimited and eternity, and you have observed: what is, what will be and what has been**”⁴².

“**Before such visions, a divine joy, a holy shudder seizes me at the thought that your genius has forced nature to reveal itself entirely,**”⁴³ sang Lucretius. As I turn around and contemplate everything, I too am

surprised to experience this strange and incredible feeling of having grasped the depths of the secret. By the power of truth, in my lifetime, I have conquered the universe.

The Meaning of Existence

The wise man contemplates the infinite universe. He sees that the great all is nothing. There is no march of the worlds. There is no human meaning to the multiverse. Mathematical logic realizes everything, eternally, an infinite number of times. Atoms meet fortuitously in the void and produce the infinity of worlds. Since things have no meaning outside of themselves, it was freed from any form of theology that Democritus understood his existence. Then a new man appeared... a man freed from the order of the cosmos. This being realizes from then on the absurdity of traditions, judgments and morals imposed according to a supposed superior order. Nothing reigns above him. He is and sees himself as totally liberated. He becomes his own God. “ **The wise and learned man is the measure of all things,** ”⁴⁴ proclaimed Democritus.

No man is naturally born both wise and learned. The meaning that a conscience initially attributes to things has been arbitrarily instilled in it by its family, social, and cultural environment. After three consecutive whys, chained together on any subject, the mind comes up against its ignorance, and often also against an emptiness of meaning. If the soul questions itself further about the true basis of its actions and feelings, it will notice that it does not know their origin... If it continues to venture in this direction, its feelings will begin to waver, and unanswered questions will appear: What can possibly be the meaning of all this? After all, why does this event make me happy? Deep down, why would I want to accomplish certain things and fight against others? Since when has this life belonged to me?

Most human beings live without asking such questions, content with emotional morality and the ideology of their social class... for better or for worse. In others with a more developed philosophical instinct, awareness of this inner fragility leads to a desire to completely re-establish their understanding of themselves and the world, on sound and

clear foundations, by finding the true meaning of the principles that guide us, and to discover when and why feelings and experiences really have meaning.

The philosophical mind is born by completely questioning all the uncertain ideas and emotions around it, and within it. It finds itself alone in its bubble, where its conscience once emerged, where its heart once formulated its very first intimate emotions. The philosopher's soul searches all its life to rediscover the purity of that moment of its birth. With effort, it will be able to return to its sanctuary and draw its freedom there. In this place, it rediscovers the emotion born on that childhood day, when for the first time, it became aware of the value of life. Initially, petrified by the shock resulting from that first moment when it fully realized the scope of the present moment, the soul will gradually reaccustom itself to the original purity of the feeling of self. It may enjoy allowing itself to be penetrated by the joy born of the contemplation of its own existence. Feeling its being reveals to itself the price of this chance that will never be equaled. Through the exercise of meditation, the philosophical soul reinvests its most intimate feeling and prepares it to affirm its power to exist.

The cosmos is meaningless. There is no meaning to existence. There is only a feeling of existing, in each of us, which is the source of a particular meaning. As long as the feeling of self is not sufficiently structured to have become the driving force of existence, the mind will seek meaning and external points of support. Like someone who seeks the cause of the universe and can neither find it nor understand it, because God is not the first cause but the principle of Causality, the mind cannot understand itself through circumstantial reason, otherwise it would lose its meaning and condemn itself to the status of a slave; but it only discovers itself by devoting itself completely to its pure feeling of existing. The cosmos has no physical cause; it is the emanation of the principle of Causality. The life of a liberated mind has no natural meaning or external justification; it is the manifestation of an existential feeling. The tone of his material soul is not reduced to a particular cause; it is the expression of a singular way of experiencing and desiring.

The sense of self animates human Reason to form a psychological microcosm. The mind that contemplates itself feels its inner necessity, and discovers its being in the depths of itself. It feels free, guided by the

desires that emanate from the depths of its soul. When the foundations of the self have been sufficiently strengthened and developed, the understanding forms intimate desires in which the sense of self is so present that it recognizes itself in them, contemplates them and wants to live with and for them. After years of meditation, the wise and learned man finds within himself the strength to reaffirm his intimate Desires against the apparent field of possibilities that invites him to extinguish and deny himself. The wise man affirms his intimate desires, and tends towards his joy with the understanding that what has value is not found in the affects suffered, but in this intimate Causality which founds his feelings and makes them live in his heart. No isolated passion has the means in itself to reveal to man the depths of his secret. Only his intimate Reason gives meaning to his actions, value to his feelings, significance to the things he loves. The rational conscience that lies dormant in each of us is the only thing that can give value to our lives. Without self-love, man sinks into existential nothingness. It is only through the contemplation of himself that his ideals, his will, his feelings emerge in the logic of what he is, in the dream of what he wants to be. Only then can man turn in on himself and feel the meaning of his existence.

Rational in thought and in his understanding of the universe, rational in his heart and in his deepest feelings, the liberated spirit has soared toward the ultimate degree of being. Reason is the supreme principle. It establishes reality, truth, our knowledge, our ideals, the meaning of our lives. To those who know how to praise it, it gives in return the capacity to truly love. To the wise man who reaches the depths of the secret, it inspires infinite wonder, where his contemplation is eternalized and his heart rises, when he realizes that he has fallen in love with Reason itself. Reason is the ultimate principle: it is God around us, and the divine light that has awakened in each of us.

“ The intellectual love of the mind for God is a part of the infinite love that God has for himself... this love is therefore an action by which the mind contemplates itself... it is therefore truly indistinguishable from glory, ” ⁴⁵ marveled Spinoza.

Heroic Idealism

Overwhelmed by the love of universal Reason, the wise man discovers the metaphysical love of himself. He feels transported to the rank of glorious divine manifestation, and understands his total legitimacy to transform a part of the cosmos according to his dreams. It is up to him to affirm his essence in this world, and to make his desires triumph everywhere, by achieving all that blind logic is incapable of achieving. Seeing that the ultimate principle has reconstituted itself within him, the wise man realizes the inestimable value of his being. In his eyes, each individual fully conscious of himself is the bearer of an essence that makes him irreplaceable. For me, the only thing that has meaning is these ideals that I carry in my childlike heart and that I share with other beings. The only thing that has significance is these desires that come from my intimate Causality and that live within me.

Desire expresses and brings to life the essence of man. Not to exalt one's intimate desires, to conform to the present order or to renounce one's dreams for fear of failure, is to let one's individual essence disappear, crushed under the weight of external causes. To truly exist requires the glorious affirmation of one's being. To exist fully is to bring to life this will to weigh on this reality in order to make the rational desires linked to one's feeling of existing triumph. Consequently, "humility is not a virtue" ⁴⁶, but on the contrary see in "the satisfaction of oneself, coming from the fact that man contemplates his being and his power to act, the highest thing we can possess" ⁴⁷ Spinoza teaches you.

In the liberated mind, desire-power tends to merge with love-joy. When one of the intimate desires is fulfilled, the awareness of one's power to exist increases and then manifests itself through the feeling of authentic joy. The liberated spirit wants to live great moments, feel beautiful things and accomplish the actions that its being inspires it. It tends towards happiness, not as an escape, frightened by the fear of death, but as the glorious affirmation of its essence in this reality now understood. It is with such metaphysical distance that sages like Epicurus and Spinoza once proclaimed their quest for the happy life.

An emblematic adversary of the fatalists, the disciple of Epicurus lives as a glorious god. He does not allow himself to be subjugated by the order of external causes. The rational love of his being opposes the powerlessness of ordinary men. In addition to filling himself with his

pleasant sensations and happy memories, through the understanding of what he accomplishes, he feels an immense joy coming from his sense of existence. Knowing that the only thing that has value is the triumph of his intimate reasons. He rejects his fears and weaknesses and does not allow himself to be diverted by the possibility of failure. “ It is better to make good calculations, even if unlucky, than to have luck after bad calculations, for what has value is to succeed in the enterprises that one has wisely meditated, ” ⁴⁸taught Epicurus.

Affirming his desires on the world, the liberated man has gone in search of his ideals, however far away they may lie. He acts as if it were impossible to fail. He has banished all weakness, in order to fully live the ideals that come from his essence, those he has in his childlike heart. “ The search for truth and beauty is an activity in which one is permitted to remain a child all one's life . ” “ ⁴⁹If I do not tirelessly persist in pursuing this ideal, eternally unattainable in art and science, life has no meaning for me, ” ⁵⁰confided Albert Einstein.

Reality having been conceived neither for me, nor for the human species, nor even for any particular purpose or thing, we are ignored by the natural order, and therefore constantly confronted with an ocean of obstacles and injustices. Faced with this condition, the spirit can abandon its innermost Desire, repress it, condemn it and even deny it to the point of tending to become a stone again, or on the contrary it can live it heroically, like Epicurus, in “ joy mingled with tears ” ⁵¹, that feeling of power which invades the one who, although fully aware of his condition, has overcome it with a stronger joy, coming from the depths of his being.

To renounce one's Desire is to renounce oneself and allow oneself to be completely destroyed. To hold firmly to one's Desire is to truly exist. By this simple reasoning, the liberated man knows his superiority over hearts that groan, renounce, or flee before reality. Understanding his condition as a singular being in a blind universe, the liberated man realizes the origin of his suffering. He sees that it is the price of the beautiful things he has in his heart. Thanks to this vision, his sadness is no longer alienating. It even produces an existential glory that invites him to lead a heroic life. “ Go your way as an indestructible being , ” ⁵²Epicurus said to his disciple Colotes. The liberated man knows that the meaning of his life exists only through the fulfillment of his

innermost reasons and dies with his submission to the world. Therefore, to be content with one's primal instincts and the norms of one's time, or to become frightened and flee into religious belief, would be to let one's being disappear and die while still alive. For the mind animated by complete sincerity, ignorance, confusion, and lying fables are of no comfort. Anything that distracts it from its Desire is a threat to its only chance of truly existing. In the hard and sensitive heart of the liberated man, weakness and falsehood will be banished, while the truth must be sought and understood at any cost. Its existence depends on it.

The liberated man has launched himself into reality with the inner pleasure of being a microcosm, this metaphysical feeling of belonging to himself completely and of idealizing beautiful things within himself. From now on, nothing can stop him. By reaction, his sorrows awaken his revolt, exalt his determination and increase his inner power. The more he suffers, the more he strengthens himself, builds himself up and resolves to affirm what he is, by engraving his desires and the joys he has conquered in the cosmos. A lasting peace emanates from the contemplation of his incredible resistance. Despite the devastating impact of the absurd human condition, the liberated man has succeeded in the feat of making his inner Reason survive in his heart. The universe has always been subjected to the wind of revolution resulting from the presence of this independent power that inhabits it. The universe is forced to metamorphose under the blows of this divinity trapped within the cosmos.

The liberated man stood up to look at the distant horizon and dared to proclaim that defying destiny would be his way of existence. From now on, his most beautiful dreams, even unrealized ones, could no longer destroy or haunt him, for they were the secondary emanations of a power of being that had become invincible. Every particular and fluctuating desire was now associated with a permanent joy of existence, which was inexhaustible and, in turn, shone through in every single desire and love. Carried by his existential heroism, the liberated man discovered the miracle that lay dormant within him. True wisdom is not to renounce one's Desire, to contain or repress oneself, but on the contrary to exalt oneself in order to accomplish masterpieces. True wisdom is to live as an immortal, here, during one's short life.

Fatalists prefer to change the order of their desires rather than wanting to conquer the order of the world. In this, they are indeed slaves to their weaknesses. I prefer to strive to build a miracle. To change the order of my desires is to flout my innermost reasons and sink into non-existence. The emotional part of feelings has no value if it is not the sensible expression of a reason that exists in my heart. What good is pleasure if I do not carry the deep why of my actions? The liberated man prefers all the misfortunes and sadnesses of his life, conscious of the ideals he pursues, and the almost impossible dreams towards which he strives, to all the boring pleasures of ordinary mortals, which seem to him totally empty of meaning. Beyond the sadness and circumstantial joys, he feels in the full awareness of his inner Reason an immeasurable joy emanating from his inner deification, a beatitude irremediably linked to his being. The liberated man is no longer what he is. He is what he loves.

I believe I am such a man. I am no longer afraid to honestly acknowledge my clumsiness, my failures, and my present faults. I do not hide my condition from myself. I prefer the truth that sweeps away to the lie that poisons. Despite this terrible news, I am freed from the burden and I feel the immense pleasure of knowing who I am. I now consciously decide who I want to become and where I want to go. I no longer submit to my condition. I am ready to remake this world. I am no longer the original man who follows the fate that chance accidentally imposed on this planet. I refused my fate. Only then was I free to become what I am deep down inside.

Faced with the incompatibility between the order of this world and the desires of every liberated spirit, most souls bend and lose the meaning of their lives. The species to which I belong is ready to bend the world in order to exist.

The Liberated Man Wants to Complete Creation

“ This, then, is the end I must strive for: to acquire this superior human nature, and to make every effort so that many others acquire it with me; in other words, it is important for my happiness that many

others rise to the same thoughts as me, so that their understanding and desires are in accord with mine; for this, two things are sufficient: first, to understand universal nature as much as is necessary to acquire this superior human nature; second, to establish a society such that the greatest number can easily and surely attain this degree of perfection. Care must be taken over moral doctrines as well as the education of children; and since medicine is not a means of little importance to attain the end we propose, order and harmony must be established in all parts of medicine; and since art makes many difficult things easy and benefits us by saving our time and effort, we must be careful not to neglect mechanics, ”⁵³wrote Spinoza.

The wise man is in search of a better world and society that it is up to him to establish. Since human beings come from the prehistoric world, that is to say, from an order that is not in accordance with human values, our condition remains governed by physical , biological, social, moral laws... which do not take into account the uniqueness that exists in each of us. Understanding the true nature of God explains the flaws in our world. Creation is incomplete and it will only take into account the value of human life, to the extent of the transformations brought about by the beings it contains. For conscious life to obtain its just condition, liberated man must complete the work of God. The absurd order that surrounds us must be overcome by a rational idealism that will materialize through revolutions born of reflective Desire in a better world. Having once divined the past existence of prehistoric man and perceiving the immense progress to be made, Democritus studied things to improve the natural order . “ **Our reasoning perfects the data provided by nature, and adds new inventions to them,** ”⁵⁴continued Epicurus. For millennia, this progressive idealism has been the very expression of our power to exist.

In antiquity, powerless souls invoked destiny to justify the denial of their essence and their desires. The fatalistic masses have not disappeared; they have simply been transformed. At all times, powerless souls have sought to reduce the individual to an external order. Across eras and civilizations, they have constantly reinvented new forms of theology, not only spiritualist but sometimes even materialist in inspiration. To see nature as an order that absolutely dominates the human species, to assert that man is only a puppet invented by a

transcendent god, or to want to reduce the individual to a category belonging to society or the state, is always to deny the essence of the singular individual. In all these conceptions, the singular human person must bow before a totalizing order that completely dominates him: doctrine of destiny, transcendent divinity, tribalism, nationalism, racialism, communism, submission to nature for ecological or other reasons... are all so many varied forms of theology. These visions legitimize the more or less pronounced crushing of the desires of the singular individual in the name of a superhuman order. Between those who rave outside the laws of nature, and the others who dream of subjecting us to a barbaric, cruel or primitive condition... all will claim to also want to change the world. Hidden behind their fratricidal struggles, these neo-theologians have all wallowed in various forms of providence and submit to a totalizing system, the quest opposed to that of liberated man, which defies the intimate desires of the individual, and proclaims his legitimacy to metamorphose a part of the cosmos according to his dreams.

In any theological conception, man must submit to a higher order. On the contrary, in an immanent universe, “ **insofar as man is a part of nature, he constitutes a part of the power of nature,** ”⁵⁵ explained Spinoza. He therefore possesses all legitimacy to transform reality from within, by the effects of his own power. Any supra-individual authority enters into direct opposition with the hyper-humanism of liberated man. We condemn all forms of theology, even naturalist. Man does not have to submit to the spirit of the laws of nature, to the cruelty of natural selection, to the supposed movement of history, nor to the inherited social order, but rather to use the laws of nature to overcome nature and impose his values. “ **Nature dominates nature, and nature triumphs over nature,** ”⁵⁶ Democritus once proclaimed.

Liberated man has turned, arm outstretched, fist clenched, gaze raised to the stars. Faced with the present order, his innermost Desire carries him away to the point of making him defy all creation. From his being awakens an exaltation that overwhelms him completely. He feels his existential glory rising, as if all the forces of the cosmos had gathered within him. In antiquity, the crowd would have said of such a man that he defies the gods. Precisely where the fatalistic majority feels powerless in the face of their fate and resigns themselves, the liberated man asserts

himself as a glorious god. Before the heavens, he announces that he will complete God's work. In this world, his will and desires will be the hand of Zeus. Only then will reality fully belong to him. The liberated man is carried by the ideals he glimpses in his thoughts. It is thanks to the heart of the liberated man that we no longer live in caves. It was also he who drove out the tyrants, and it will still be thanks to him if tomorrow the world will be better than today. Sensing the real possibility of a better world, the liberated man is not in conflict with God, but only with the absurd original condition of the human being. From then on, his sadness is no longer an existential distress. His fear is only an obstacle that prevents him from becoming who he is and from reaching the place where he should live. The liberated man rejects his sadness to surpass himself and achieve his ideals. He wants to resist the fears that alienate him in order to bring to life at least one dream born from his innermost reasons. It doesn't matter if the probability of success is low as long as it is not definitively impossible. Faced with the immensity of the path to be taken, the liberated man does not choose the easiest solution, not the most probable, not the least questionable. He chooses the most beautiful possibility that is not refuted, the best one that does not seem definitively impossible. For him, life does not consist of reconciling present feelings with the thoughts of the moment, but of developing his innermost reasons through his intelligence, in order to find, idealize, and invent in his heart the true dreams that satisfy him, and to want to achieve them, however far away they may lie. This rational idealist does not allow himself to be weakened by the fear of failure. Aware of his fallibility, he decides to go beyond his fears. Where ordinary men take refuge in ignorance and skepticism, the liberated man has the courage to forge the best present truths and to live with them, despite his doubts. Taking the risk to philosophize, to live, to love fully, this is his greatness. Defending his understanding of the truth with all his heart, with at the same time the doubt irreducibly linked to the fallibility of the mind, and the honesty to then recognize his error, if necessary, is by far the most beautiful of attitudes, without even being able to draw a comparison with the passive timidity, humility and other decadent inhibitions proper to powerless souls.

Correcting the injustices engendered by the chance of blind order, the progress already accomplished has transformed this world. One by

one, these improvements gradually restore to nature the perfection it lost in the eyes of men when they ceased to be animals and awakened. Lucid in the face of the immense difficulties that await him, the liberated man remains resolute. He lives for miracles... the miracles that he prepares with his own hands. Thanks to his hands, his tools, his machines... man multiplies his power and gradually imposes his desires on the blind order around him. Slowly, he frees himself from his absurd animal condition which had condemned him to work, not for fulfillment, but as a necessity for his survival. “ The development of technology means that less and less effort is required of the individual for the satisfaction of the goods of the community... thus the energy and free time that the individual gains can be used for his personal development, ” ⁵⁷explained Einstein. Soon our autonomous, self-controlled, and self-maintaining robots will have so multiplied our power that these machines will carry out the bulk of the survival effort for us, producing the elements necessary for our subsistence and well-being. Then, man will have freed himself from the constraints inherited from his animal origins. He will have overcome the need to fight for his survival, and will flourish in a liberated existence.

How much longer will pessimism and fatalistic helplessness dominate human thinking in the face of the dream of our completed world? I was born, I grew up, and like any child, the first word I uttered was “no”! My vision of the world is simply that of a child discovering life and realizing that there are many things that are not right and that deserve to be changed. Our ancestors have helped humanity move forward so that one day, we will live in a world that offers us this still unknown happiness, buried for millennia in our childish hearts. It is up to us to complete God's work. There is no destiny, but what we do... no destiny but what you choose to do now. “ Deploy your young courage, child, that is how one rises to the stars, ” ⁵⁸Apollo sings to you, according to Virgil.

The Eternal Essence of our Material Soul

The sun sets in the distance . I find myself looking at it as if I were living the last moments of the world. It is in this moment before the

apocalypse, just before everything disappears, that the spirit most intensely experiences the love of reality. It is when the soul of the hero realizes that it has only a few moments left to live, that it then most strongly discovers the value of its existence, with the intuition of all that it would have liked to be... with the feeling that something in it deserves to be true forever.

For every man, the idea of death is the source of a feeling of incompleteness, the origin of infinite regret. “ **Each of us leaves life with the feeling that we have barely been born,** ” ⁵⁹observed Epicurus. If the common man lies, tortured under the weight of the human condition, the soul of the wise man in love with universal Reason has completely transformed the problem of death...

First of all, since our soul is material, Epicurus noted that “ **death is nothing to us .** ” ⁶⁰If you look closely, it doesn’t concern us. There is nothing to fear from death itself. Since no one is aware of having fallen into eternal sleep, all the torments you experience from death occur while you are still alive. Be happy now, live the present happiness to the fullest, and death will be nothing to you either. “ **A free man thinks of nothing less than death, and his wisdom is a meditation not on death but on life,** ” ⁶¹Spinoza continued.

Since the day of my own death is undetermined, I can project myself fully into this liberating present. From my point of view, and this is all that matters now, a potentially unlimited future opens up before me. I have decided to live this saving present to the fullest, by picking the roses of life from today, without letting myself be tormented by the future or the past. I will not allow myself to be weakened, but will concretize this existence to achieve something beautiful, no matter how difficult, as long as it is not impossible to find it.

Possessing full awareness of the present is an ideal for one's spirit as much as a first remedy against the problem of death. Unfortunately, in practice this attitude becomes difficult to maintain when death approaches visibly in front of us. Aging and incurable diseases slowly destroy us before our very eyes. These evils cease to make our future potentially unlimited, and then the present loses its saving power. This is certainly why Democritus feared aging much more than death: “ **Fools wish to live, for they fear only death, instead of fearing old age.** ” ⁶²“ Men, in their prayers, ask the gods for health; they do not know that they

have within themselves the possibility of obtaining it . ” ⁶³Faced with our condition, Democritus invited us to study living beings and invent remedies. Elevating medicine, “ sister of philosophy , ” ⁶⁴he paved the way for his famous disciple, Hippocrates. The wise man wants to complete the work of God, to offer himself and future generations a more beautiful existence than it is today. He wants to fight against incurable diseases and the damage of aging to change the original condition of men, so that at every moment, in every circumstance, an indeterminate future opens up to each of us. One day, with the progress of medicine pushing back the limit of viability of the human body almost infinitely, the date of each death will become completely unpredictable. It could occur tomorrow, in a century, in a millennium... On that day, the hope that the future will offer and the indeterminate duration that will be offered to each of us will transform existence.

In addition to inviting us to develop medicine, Democritus understood something else that, in itself, changes the dimension of the problem posed by death. Although our materialist metaphysics excludes eternal life in another world, in case you haven't noticed yet, it predicts a certain form of immortality for everything. Hold on, I'm taking you to conclusions for which the dominant dualism and its fable about the immateriality of the soul have not prepared you.

Endowed with a level of consciousness barely higher than that of the animal, the human being defines himself as the present body. When asked about what he calls "I," or what he means by "self," man designates his biological body. However, the experience of the mutilated or that of organ transplants shows that identity does not require the entire body, but probably only some functions of the brain. A refinement of the first answer then consists of defining the self as the series of memories carried by the present body; however, here too, it is clear that totality is not necessary. Not having experienced this or that minor event in my daily life, or forgetting certain details of my past, is to remain myself despite everything. On closer inspection, of all my memories, I see only one idea that I cannot forget without certainly disappearing: the feeling of self. To become amnesiac to the point of losing even the feeling of myself is to die, to possibly allow another spirit to be reborn in my still-living body. I am the conscious recollection of my feeling of existing. This latent

presence makes me who I am. The self is the idea of the body established thanks to the logical and semantic capacities of the brain of Homo sapiens. Through the various possible feelings of self, nature generates the entire palette of realizable human persons, so that in each conscious body, the particular relationships that make up the feeling of existing define a singular essence.

Having admitted the false identification of the self with the whole of its body as well as with the totality of its memories, I recognize myself as my feeling of existing, which sees itself manifested in a sensitive body, with desires and memories associated with the present time. This understanding of oneself has an extraordinary consequence. Since “I” is a remembered memory, “I” can exist beyond the body that I perceive at this moment. When I fall asleep tonight, I may succumb in this world, but in another time, deep within, someone will remember me. “There is necessarily in God (that is, infinite nature) an idea which expresses the essence of this or that human body under the character of eternity,”⁶⁵ Spinoza perceived.

This poet’s immortality, ethereal and consubstantial with nature, has a much more concrete existence than what even those who had guessed it have generally dared to imagine. Indeed, as in every finite region of space, the number of possibilities in atomic associations is always a finite number, it follows that throughout the infinite multitude of worlds, all finite physical situations are reproduced an infinite number of times. “Certain worlds are not only so similar to each other, but also so perfectly and absolutely alike in all points, that no difference distinguishes them,”⁶⁶ said Democritus, when he closed his eyes and traveled in thought to those distant lands, where he saw “innumerable Democrites”⁶⁷ identical to himself. Every finite thing is realized in an unimaginable number of histories. Here, in our hands, every finite thing is mortal and decomposable, but its essence remains eternally realized across the infinity of worlds. In another time, in another place, matter will rearrange itself in its present order and give you a second time the light of life. In fact, every man has already existed an infinite number of times, and will return again and again. “Let us turn our gaze towards the immensity of time elapsed, let us think of the infinite variety of the movements of matter: we easily conceive that our elements of present formation have more than once already been arranged in the same order,

but our memory is incapable of recapturing these destroyed existences, because in the interval life has been interrupted,”⁶⁸ explained Lucretius.

Every mind is much vaster than what it currently perceives. Other bodies with a cerebral organization defining a feeling of existing absolutely identical to mine are other parts of my being. These other bodies are not other selves, they are me! I experience the same feeling of existing everywhere, and I have no more reality here, there, elsewhere, in the future or in the past. Compared to my current consciousness, these other existences are a bit like those old photos in which I sometimes surprise myself discovering myself in strange moments, which I have obviously experienced, but of which there is no longer any trace in my present memory. From the point of view of the moment in which I am writing these lines, I am no more foreign to the me that I remember having been a few years ago, nor to the me who has forgotten what he experienced, nor to the me that I am elsewhere and of which there is no trace here. My states of consciousness are not continuous, but rather flow from one to the other, placing my unique essence in all possible situations.

Since, through my present body, I am currently only a finite mode of my infinite being, my thoughts have no power to act on what is happening, in any case, elsewhere, in the other parts of my being. Consequently, my decisions must only concern my present body, in this finite world. The awareness of the multiplicity of its existence has no impact on the conduct of its life in practice. This understanding changes almost nothing in the choices that the spirit must make during its finite manifestations. On the other hand, it disrupts its metaphysical emotionality, offering it the chance to soften its sadness linked to the idea of the disappearance of its being, and of all those it has loved.

The understanding of the eternity of essences does not lead to a disappearance of the feelings linked to our finitude, but it constitutes an invitation to their sublimation. The sensible existence of every known being remains ephemeral, and the limit to the field of human memory leaves to each thing loved, to each event experienced, an irreplaceable place in our memories, of which we can now affirm the eternal truth even better. The understanding of the permanence of essences metamorphoses our relationship to time. It transforms each lived instant into a fragment of eternity, thus generating a form of immanent salvation; that is to say,

metaphysical feelings very different from those generally associated with the fable about life after death. The soul awakened to the awareness of the totality of time does not hope for a supernatural place in which to pursue its existence indefinitely. This place, it already possesses. Its temple is nature; its sanctuary, the infinite and material universe. And even if, within the cosmos containing the infinity of possibilities, she divines the existence of worlds where the unfolding of her life is marvelous, she cannot hold these places as the final outcome of existence. No planet is indestructible like the biblical paradise. Even in the happiest of material worlds, existence is temporally limited by death, and no being sees the infinity of its desires realized in sensible reality. On the contrary, since existence has neither true beginning nor end, it is rather in adherence to this understanding that the path to true salvation is found. In truth, only the love of universal Reason can give full force to this knowledge, elevate it to complete self-awareness, and instill the perfect peace of the wise. Indeed, when the liberated man realizes the cosmic dimension of his being, he senses his power to conquer here and elsewhere, and then divines from the depths of his current Desire, the totality of what he is, realized through the infinity of worlds. The liberated man no longer recognizes himself by his current body. He understands himself only by his intimate Desire, this eternal joy which completely surpasses him.

Thus, the eternity of essences is not only an inevitable consequence of the infinity of realized possibilities, but this property of the material universe accords with and reinforces our heroic idealism. What you are, in this world, through this body, is the concretization of one of the forms of existence of yourself. See in this finite and mortal chance, the opportunity to engrave some of your joys in the cosmos. Seize the day without delay. Life perishes by delay. Eternity does not wait. Eternity is here and now. Even if your memory and limited senses prevent you from seeing it clearly, recognizing the universality of Reason now allows you to glimpse the totality of reality and to perceive the hidden dimension of your being. Death is an illusion. Everything is eternal. There has never been a time in the past when we did not exist, and there will never be a future when we will cease to be. See that the fear of no longer being has no foundation. It is only due to ignorance of the true nature of things. Get rid of this absurd fear, and blossom into

your sense of existing, here, in eternity.

Animated by the love of universal Reason, the wise man fills himself with the joy that this miraculous existence brings him, to the point of almost no longer feeling sadness in the face of death. He understands and feels himself to be of divine essence. Fate may persecute him and reduce him to dust, but nothing and no one can take away from him this independent life which he gives himself in the centuries and in the heavens.

The Radical Independence of the Liberated Man

Unlike the primal fear that most men experience in the face of matter and the infinity of worlds, this vision captivates me. This blind cosmos is the only one that makes my innermost being a singularity freed from all external will. I belong to myself completely. Democritus' materialism is extraordinarily liberating. Far from the fanciful extrapolations of psychoanalysis, or the totalizing excesses of sociology, for Democritus, the order of our material soul comes first from chance, whose original source lies in the whirlwind of disorganized atoms that we inspire. All those who have forgotten to think with physical matter can only conceive of the individual as the combined result of genetics and social conditioning. In reality, the whirling of atoms is the source of an additional variability during the genesis of bodies and brains, which gives the individual a unique singularity. Due to molecular and then cellular agitation, identical twins do not have the same fingerprints, nor do they possess the same neural maps. My genes and my history both greatly influence my brain architecture, but these two cumulative determinisms are far from containing enough information to define the state of all my neural connections; which evolve largely randomly. My essence therefore belongs neither to my ethnicity, nor to this society that gave birth to me, but only to myself. What I am could exist in another civilization, in another time, in another body, certainly also in a non-human body, and therefore, in fact, I have existed, I exist and I will exist elsewhere.

Where theologians and their modern successors in philosophy, psychology, and sociology continue to imagine fictitious causal links

between categories that have nothing to do with each other, as in the past when they saw a link between an immoral act and the place where lightning strikes, for a philosopher of nature, external causes are a blind order that has no meaning for the heart of his being. Any conscious individuality is certainly only the cumulative product of material, genetic, cultural, historical, emotional causes... but its meaning is not reduced to these inferior causes. Far from denying that structures external to the soul are indispensable conditions of possibility for its existence (genes, language, civilization, society...), if liberated man does indeed possess an essence of his own, then its meaning appears only at the higher level, in the feeling of existing, even if this is entirely generated by elements of the material world. Indeed, the meaning of essences is always contained in the essences, and not in the elements that constitute them. For example, the geometric properties of the triangle come from the essence of the triangle alone and are not found in the points and segments that draw it. Similarly, the desires associated with this or that human essence arise as properties of this essence, and do not come from the elements that composed it. Thus, wanting to reduce the intimate desires of liberated man to their prior causes would be like trying to explain the particularities of complex objects on the atomic level alone. “ It would be possible to describe everything scientifically, but it would be meaningless. It would be a description without meaning, as if one were to describe a Beethoven symphony as a variation of pressure waves, ” ⁶⁹explained Einstein.

If we were to analyze a bacterium at the atomic scale, we would see collisions and particle movements, but from this lower level alone, we would grasp nothing of the “will” to survive that emerged with the replicators. It would be completely absurd to attribute a living meaning to atoms, even if they are the basis of all the effects of life, because the will to survive only appears at the higher scale established by the replicators. Similarly, to want to understand the sense of self of a spirit liberated by its various prior causes is to be mistaken by at least one dimension in the order of values that have appeared in the universe. Only powerless souls are possibly reducible to a lower level, because they have abandoned their essence and compensate for their existential nothingness by clinging to an external order. Liberated man, this light of lights, has understood that God is blind, like the causes that surround

him. He does not seek to reduce his being to an order that would give it meaning. He does not seek, in the world below his conscious individuality, causes to find his value. The only way to grasp the scope of his existence is found in his child's heart, in the intimate desires born of his feeling of existing.

The liberated man celebrates the end of all forms of theology and proclaims his independence. From then on, he rejects any order that does not appear to him to be clearly in accord with his inner Reason. He wants to live according to the sole principles that he himself establishes from his understanding of nature. If he values many values and so many beautiful things produced by civilizations, it is to choose them and live them freely, because he condemns the powerless souls who have submitted to their culture and transformed it into an instrument of authority. Reject, therefore, the ambient conformism, the weight of traditions, and of the arbitrarily imposed system, and offer yourself this most free mode of existence possible. Epicurus invites you to realize, without delay, this self-taught ideal: “ Flee all culture, blessed one, with unfurled sails . ” ⁷⁰“ The study of nature does not produce boasters, formula-makers, or individuals exhibiting the culture coveted by the majority, but proud and independent men, who value their own goods, and not what results from circumstances . ” “ ⁷¹Using the frankness of one who studies nature, I would prefer to say like an oracle, what is useful to all men, even if no one understands me, rather than to approve of current opinions, in order to reap the praises that fall from the majority . ” “ ⁷²I have never wanted to please the crowd, because what pleases them I do not know, and what I know is far from their understanding . ” “ ⁷³All this is not for the crowd, but for you, for we are to each other a rather vast theater . ” “ ⁷⁴To depend only on oneself is, in our opinion, a great good . ” ⁷⁵“ When one is self-sufficient, one comes to possess that inestimable good which is freedom .

” ⁷⁶A lover of autonomy, the liberated man gives primary importance to the heart of the individual against all cultural and ideological dictates of communities, states and societies. “ It is the human person, free, creative and sensitive who shapes the beautiful and exalts the sublime, while the masses remain caught up in an infernal round of imbecilities and brutalization . ” “ ⁷⁷Those who rage against the

ideals of Reason and individual freedom and who, with brutal force, want to reduce men to imbecile slaves of the state, fairly consider us their irreconcilable adversaries,”⁷⁸ said Albert Einstein.

An enemy of ignorance, and therefore eager to offer his knowledge, the liberated man dreams above all of free and autonomous individuals. He invites everyone to think for themselves. “ **Much reflection and not much knowledge, that is what we must strive for,** ”⁷⁹ recommended Democritus, our first encyclopedist. The wise man opposes and predicts the failure of all those who want to format minds. Intimate desires cannot be taught. If the principles that guide us must flow logically from our understanding of the universe, the tone that our intimate reasons take exist only by the internal necessity of the individual. They are the manifestation of his essence in the circumstances of the present world. A mentor can help clarify and develop them, but their true substance cannot be transmitted. Therefore, “ **if someone asks, ‘Why should we help another, make life easier for each other, make beautiful music together, think inspired thoughts?’ we should answer, ‘If you don’t feel the reasons, no one can explain them to you.’ Without these primary feelings we are nothing and would have been better off not existing at all,** ”⁸⁰ explained Einstein.

Far from theologians, the wise man does not claim to change the hearts of men, but only to build the conditions to flourish the Desire of each one. He dreams of an advanced society that will free individuals from the constraints of survival due to our animal condition, where the individual will no longer be a piece assigned to a function after receiving his certificate of conformity. Multifactorial in our nature, no academic criterion can summarize us. The liberated man condemns all those who believe they know in advance what you are or are not truly capable of doing. Let us leave to the course of our lives alone, the wise decision to judge us. The liberated man dreams of a world that gives the individual his chance to undertake, that leaves everyone the choice to study, to invent, to create what is dear to him. He wants to offer everyone the opportunity to realize his dreams, and also knows that by this path, he will obtain better results for all in the long term. Those who have made the greatest progress for humanity have not and could not have been pre-selected for their genius. “ **Imagination is more important than knowledge,** ”⁸¹ Einstein concluded triumphantly.

The Love of Wisdom

By his will to affirm his being and to resist all external causes that want to weaken, dominate or destroy him, the liberated man wants to be invincible in his heart. Where powerless souls take refuge in lies, he exalts his inner power. “ It is in dangers that man must be observed, it is in adversity that he reveals himself: only then does the truth spring from his heart, ” ⁸²sang Lucretius. Even in the worst circumstances, the liberated man prefers the truth that sweeps away to the lie that poisons. “ It is beautiful to think straight when one is in misfortune ,” ⁸³said Democritus.

The liberated man knows he is fallible, but he does not allow himself to be diminished by the fear of failure. He moves forward without being tormented. He strives to act for the best. The truly wise man who sees such a man fail will consider him his equal. Confronted with his faults and errors, the wise man recognizes everything. He finds greater pleasure in the feeling of being able to recognize the truth than in the refuge that lies would provide him. The wise man takes more pleasure in self-respect than in any disappointment the world can inflict on him. He is always clear and lucid in his heart. He is heroic and wants the truth about himself and everything around him. He wants to be authentic. For this, he fully lives his joys as well as his sorrows. At no time do these threaten his existential balance or distort his thinking. No longer afraid to let his emotions fully live, the wise man reveals himself to be both stronger and at the same time more sensitive. His recognition of painful truths, which he admits without seeking to repress them, makes his presence unbearable to powerless souls. By his promise of sincerity towards himself, the wise man never flees the truth. He does not allow himself to be defeated by the blows of fate, nor by his failures, nor by the errors of his own thought. “ In the common search for arguments, the one who is defeated has gained more, in proportion to what he has just learned, ” ⁸⁴taught Epicurus. “ The search for truth is more important than its possession, ” ⁸⁵Einstein liked to say.

The liberated man has given up fleeing reality. He has also refused to build a compensatory ego, but prefers to enjoy the pleasure of recognizing the truth, including his faults. “ **The beginning of salvation is the recognition of one's fault,** ”⁸⁶taught Democritus and Epicurus. The wise man does not flee from what has condemned him. He innocently devotes himself to the truth. His life is a celebration of the cult of Reason. He listens without fear. Insensitive to flattery and mockery, he knows neither vanity nor all the adornments that hide or fill the emptiness of powerless souls. He lives only with the rational truth that he forges and affirms within himself. From his understanding of reality are born his legitimate feelings. Often confronted with his errors, his feelings then immediately adjust to the newly established truth. Devoid of fear, he opens himself to criticism and cultivates perpetual doubt. He invites others to criticize him. He sometimes thanks and admires his most relevant detractors. Thanks to them, he knows he will become better. The wise man may be disappointed or saddened, but never hurt. He fears no words, no judgment, much less sarcasm and insults. There is nothing in common between the depths of his being and the rest of the world. No one can honor or dishonor him. “ **That which is blessed and incorruptible neither has troubles itself nor causes them to others, so that it is subject neither to anger nor to favors; indeed, these things are found only in the weak,** ”⁸⁷taught Epicurus. Consequently, “ **when fools mock the wise man, he pays no attention .** ”⁸⁸“ **It is magnanimity to bear with calm the lack of tact** ”⁸⁹“ **He who is content to prove himself to himself not out of contempt for others, but for the ease and contentment he has in his conscience, shows that Reason lives in him, and he then accustoms himself to taking pleasure in himself** ”⁹⁰said Democritus.

The seed of wisdom is present in every mind whose original disposition of self-feeling has given it an innate confidence in its own Reason, but wisdom only truly blossoms after the mind has become aware of its complete intellectual and sentimental sincerity, when the recognition of this power produces an inner satisfaction that frees primitive self-love from its uncertain psychological bases, transforming it into an intellectual love of self, self-sustained by the disposition of the intellect. Admiration of the sincerity of my thought, even before it is yet associated with a particular object, gives me access to my inner Reason

in its purest configuration, that is to say, possessing only the idea of myself. This veneration of my capacity for truth is a deification of the guiding principle of my thought, independently of any success or failure experienced. It is the purest love of truth, the true philosophical feeling: the love of universal Reason, rediscovered here in a new facet.

Wisdom is an acquired disposition of the soul. It is not really a faculty that is transmitted or taught, but an ideal that is more or less present depending on the culture, and to which the mind may wish to convert. The mind in formation that tends towards wisdom contemplates its being, feels its essence, discovers itself and learns to respect the choices that come from its higher consciousness. By developing the intellectual love of its thoughts to an excessive extent, the mind gives its ideas the solidity of established knowledge, and increases its capacity to create true intimate reasons. It manifests its power to bring its inner causes to life against the order of external causes. Thus, from the intellectual love of self is established a virtuous circle of joy and freedom. On the contrary, those who do not enjoy complete sincerity do not have full confidence in their Reason, and their depersonalized thought prevents them from living their ideas to the very heart. Without the intellect's confidence in itself, thought has no vigor, even in what it clearly understands. He who does not possess full candor cannot produce true thoughts or feelings. He who does not believe in himself always lies.

In the disordered soul, Reason is perceived as a command, opposed to the primary passions or repressed desires that dominate it. There, rational thought is felt as an external constraint opposed to the false freedom that reigns. Conversely, in the soul of the wise, understanding is the source of the will, and Reason is always at the heart of inner thought and freedom.

The joy that emanates from the sincerity of conscience gains in intensity with the exercise of meditation on oneself and on the world. The heart of the wise man is animated by the purest, most sincere, and most powerful love that a spirit can have for itself; a feeling of inner glory that is the opposite of humility, but which must also not be confused with the irrational ardor of youth, the arrogance of fools and the rude, and is even the opposite of vanity and other superficial adornments coming from lying to oneself. This love, this strength capable of resisting adversity, and of imposing the product of one's

conscience on the world defines our degree of freedom. The internal disposition of each microcosm gives each human being a certain capacity to affirm their power to exist, here and now.

Only the wise man therefore strives towards glory within himself. Alone, at each moment, his thought builds its truth in his heart. He advances resolutely. At peace in his being, he contemplates his chance to exist and strives toward what he understands as just, good, and beautiful. Far from the lies of pride and humility, far from the whims of kindness and the stupidities of wickedness, the wise man is simply true. He has no repressed weakness to compensate for, but strives only to exalt his innermost desires as best he can, that is, his joy in this existence.

Following his philosophical conversion, a profound desire for self-sufficiency appears within him. By seeing himself as a singular essence, isolated and surrounded by various external causes, the mind of the wise man realizes that so many psychological affects pass through him without, however, originating from or being in accord with his essence. Analyzing the origin of his own passions leads to the realization of how absurd and illegitimate most of them are. The mind understands that all these affects threaten to destroy him by making him a slave to the outside world. These threaten to deprive him of his only chance to truly exist. This understanding gives rise to the ideal of living not according to the turmoil of external causes, but for his innermost reasons. Returned to himself, the wise man develops a desire for refocusing, which sets aside the contingent false self and exalts the depths of his being. The inner power of the wise man then rises up against any impotence contaminating the heart of his soul. His will to resist weaknesses strengthens. The wise man rejects everything that invites him to bend. Filled with aversion to all forms of psychological impotence, his strength is built by the rejection of weakness. From then on, a condemnation of decadent moralities that excuse, justify, sympathize with, or even encourage the impotence of the soul is born within him.

Suffering from a serious infection that would eventually kill him, Spinoza displayed a truly stoic firmness to the end, going so far as to reprimand those who pitied him and showed little courage or too much sensitivity. “ Pity is, in itself, bad and useless in a soul that lives according to Reason ,” ⁹¹he warned. “ Let us share the feelings of our friends, not by lamenting, but by caring for them, ” ⁹²demanded

Epicurus. In antiquity, before powerless souls took hold of philosophy and their resentment reversed moral values, all schools sought this firmness of soul. The inner strength of the wise man must once again become the ideal to be attained, while the impotence of the soul must be recognized as the mother of vices that each person must be invited to overcome within themselves.

The sage is always himself in his innermost being, animated by his existential glory. The sage's existential happiness is immutable and eternal. It is an immortal good in the depths of his soul. Even if his desires are not currently realized in his emotions or in his memory, he heroically holds onto them in his heart, and senses them being realized throughout the cosmos. The sage feels himself as a divinity within the cosmos. He is above sensible suffering and does not flee the present moment for a hope that is constantly deferred. He affirms his being in the present, and this present felt under the character of eternity is worth as much as the past or the future. The sage obviously seeks the success of his desires and therefore the greatest sensible joy, but the rational joy of feeling his being remains, in all circumstances, by far the most important. Without it, all sensible joy would be vain, and he would hardly feel himself to exist any more than an animal, a slave to passions that do not belong to him. Where powerless souls are confronted with the absurdity of their existence, and flee into theological aspirations to desperately fill the meaning they lack, the wise man simply affirms his power to exist in this world. He does not seek himself in the past, nor in the future, nor in another world. On the contrary, it is in the awareness of his present desires, in simply seizing the day, that he best feels his eternity.

Thus, after the appearance of primary consciousness, with vertebrates, then the relatively recent emergence of the awareness of being conscious in prehistoric men, there has appeared, for only a few millennia, a third level of consciousness, that of beings that have been called: wise, awakened, superhuman, divine incarnations... because in them, the awareness of totality is manifested. The soul of such beings is delivered from the metaphysical anxieties that more or less consciously gnaw at the hearts of men. Indeed, when, from the best understanding that thought can form of reality, the most solid reasons appear to annihilate all past metaphysical fear, the total triumph of Reason then

delivers the soul from its deepest torments and brings it to perfect peace: this state of the accomplished sage that Democritus and Epicurus called ataraxia. Even in the face of perpetual doubt, the soul of such a being could no longer be troubled, so much so that its ideas now flow from the best possible knowledge, and this sincerity surpasses, while preserving, skeptical criticism. The mind that would be completely invaded by this love of truth would no longer fear the unknown, nor death, nor fatality...

In conclusion, the wise man in love with universal Reason has both similarities and contrasts with other figures who also claim to possess wisdom.

Through his awareness of accessing the absolute, our wise man presents, in his form and in his manifestations, resemblances that can evoke the religious, which can sometimes justify the use of a similar vocabulary to describe him; provided that we never neglect that, fundamentally, the philosophical wise man is cleansed of the age-old lies of men, and that his salvation comes first from his quest for the truth itself, possibly then enriched by the ideas he has understood, whereas the religious man is corrupted from the start by his fears, his prejudices and his dogmas.

Similarly, if perfect peace of mind can evoke certain oriental or stoic conceptions, our wise man differs notably from skeptical indifference or fatalistic renunciation. The peace of the wise man in love with universal Reason is not a detachment or insensitivity, but only an absence of existential and metaphysical troubles acquired through a deeper understanding of reality. The possession of this higher consciousness in no way opposes the truth of the emotions of the present life. These retain all their meaning in the face of tragic or happy events. However, unlike ordinary humans, events can no longer undermine the consistency of the self. They no longer have the capacity to destroy the foundations of existence. In the wise man in love with universal Reason, the bases of the self have become independent of all circumstances, as if placed on indestructible foundations.

Finally, pessimistic and fatalistic pseudo-wisdoms advocate the renunciation of Desire because they are built on the idea that there exists a fundamental opposition between the desiring ardor of liberated man and the ideal of perfect peace linked to the figure of the wise man. On

the contrary, the present doctrine affirms the inseparability of the liberated man and the true sage, by reducing these two figures to ideal types emanating from a similar heart, and manifesting themselves in the same individuals. Indeed, the glorious feeling of power coming from the sense of self which founds an unfailing respect for the truth (the heart of the philosophical sage), whatever terrible things may be heard, is the same force which produces absolute respect for one's feelings and constructed ideas (the glorious heart of the liberated man), even if these must henceforth defy the order of the world. By merging the heroic feelings born of the awareness of one's finitude with the perfect peace coming from the perception of one's eternity, true philosophy seals the union of the will to create with the joy of contemplation; this summit of the soul reached by the wise man now capable of reading in his desiring and acting heart in this ephemeral world, the image of his immutable self, entirely realized across the infinity of worlds.

Foundations of our Materialist Morality

Nature is morally neutral. It has generated all possibilities without particularly favoring human values over others. Man is a part of nature, but the meaning of human values is not fused with the founding principle of everything. The universe has different levels of organization in which specific values exist. Nature has generated man but does not recognize him in his particularity. With the moral neutrality of divine nature, men and their societies evolve freely and are confronted with the challenge of injustice.

Spontaneously, every man tends selfishly toward the realization of his individual pleasure, however, billions of years of evolution have taught us that harmony and altruism are far more effective than blind selfishness. In order to increase the chances of realizing his desires, the civilized individual recognizes the implicit existence of a natural contract with his fellow men to help each other and not harm each other. The vision of this principle, which the wise man understands as universal, engenders within him the inner desire for a fair and fraternal society. In certain laws and in certain moral principles, he sees an achievable ideal

emerging to which he holds deeply, and he wishes to conform to it. Far from the ignorant who follow the arbitrary authority of an order they do not understand, “ the free and just man is he who knows the true reason for the laws , ” ⁹³explained Spinoza.

In the blind universe, every moral idea is not relative. The wise man is the measure of all things. The wise man has been able to perceive the nature of reality correctly enough to deduce its universally true consequences. Because he has understood that Desire is constitutive of the very essence of man, he has proclaimed the right of each person to the pursuit of happiness. When the wise man encounters the injustices engendered by the blind order of the cosmos, they provoke in him the desire to complete God's work. The wise man then defends moral principles not only out of intelligent egoism, but now out of the ideal of imposing the just order he has in his heart. His morality is no longer experienced as a necessary constraint, but becomes itself a personal desire. The wise man is driven by his moral conscience and firmly holds to his principles even beyond the interest provided by the social contract. He provides assistance to beings and groups of beings whom he sometimes completely dominates, and of whom he knows that they have not the slightest chance of giving him anything in return. Thus, “ the moral behavior of man is effectively based on sympathy and social commitments, and it in no way implies a religious basis , ” ⁹⁴repeated Albert Einstein.

Half a millennium before the beginning of the Christian era, Democritus asked “ those who have the means to take it upon themselves and come to the aid of those who have nothing . ” ⁹⁵Driven by his moral ideals, Democritus began to speak of self-pleasure as the foundation of his wisdom, and propagated moral conscience, a teaching that would leave him remembered as a legendary sage, even in rival schools: “ who can we compare to him not only in the extent of talent, but also in greatness of soul? ” ⁹⁶asked Cicero.

According to Democritus, “ the man who does evil must first feel shame in his own eyes . ” “ ⁹⁷Even when you are alone, do not say or do anything blameworthy. Learn to respect yourself much more before your own conscience than before others . ” ⁹⁸“ Do not allow yourself, because no one will know your conduct, to act more badly than if your action were known to all. It is before yourself that you must show the greatest

respect, and you must establish this principle in your heart: do not allow anything dishonest to penetrate there . ” ⁹⁹Far from blind obedience to authority or a categorical injunction, far from compassionate sentimentality, the lure of a reward, the promises of paradise, the fear of punishment or the gaze of others... if we look closely, there is in the pleasure of oneself the highest degree of moral requirement, because this independent joy is based on a true conscious choice of what is right in one's eyes. " The generous man is not the one who seeks a return, but the one who makes good his choice, " ¹⁰⁰explained Democritus. Thus, it is his happiness in the depths of his conscience that aroused in Democritus his inner desire to accomplish what seemed fair to him. " Great joys come from the spectacle of honest actions, " ¹⁰¹he said. It is because the wise man is invaded by love of himself that he experiences joy through the moral acts he accomplishes. “ Bliss is not the reward of virtue, it is virtue itself, ” ¹⁰²concludes Spinoza's Ethics.

Expanded self-awareness and a more comprehensive view of problems engender greater identification with suffering. Unlike the small ego of the ordinary human, produced by a limited field of consciousness and totally imprisoned by its horizon, the self of the wise man is a suprapersonal power, producer of universal ideals, which live and are eternally reborn in his heart, and in those of other beings. Carried by his rational ideals, the soul of the wise man is invaded by the pleasure of the beautiful things he loves in this world. “It is not only more beautiful to do good than to receive it, but also more pleasant; nothing, in fact, is as fruitful in joy as benevolence .” ¹⁰³“ The wise man is more inclined to give than to receive, so great is the treasure he has found in his self-sufficiency, ” ¹⁰⁴confided Epicurus. According to the Epicureans, the wise man knows how to die for his friend. He can freely choose to sacrifice himself, even knowing that no one will ever know he has done so. In those final moments, it is that indescribable joy, when he himself realizes what he can be, offered to his loved one, that drives him to such an act. Rejecting all weaknesses, the liberated man is happy to realize the truth he holds in his heart.

The Enchanted Reality

Perhaps you are beginning to realize that integral rationalism surpasses its adversaries on their own ground? The secrets of the material universe reveal that reality is far more beautiful than all the subterfuges invented by pseudo-philosophers and religions that lacked the genius to understand the true nature of things. Materialism, properly grasped, is clearly more salutary than aspirations to transcendence. Not only does Democritus' cosmos fulfill the wildest spiritualist hopes, offering us immortality on a silver platter, but our capacity to adhere to this vision of things is deployed with a force that immeasurably exceeds that of old dogmatic beliefs, so naturally does this image of reality flow from the highest degree of certainty that human thought can form.

Democritus is the father of a civilization that could have materialized. Unfortunately, theological fanaticisms prevailed on this planet. It took us more than two millennia for the idea of atoms to finally be accepted. How many more millennia will pass before we see the rest of this heritage triumph? Despite the progress made during the Renaissance, the Enlightenment, and the revolutions for freedom... the establishment of a civilization based on pagan wisdom still awaits completion, one day, somewhere. Despite the decline of belief, men have not rid themselves of the prehistoric prejudices conveyed by religions, which still hinder so much progress. The millennia dominated by theology still weigh heavily on morality and vocabulary. The very meaning of the word Reason still suffers from the shameful definition given to it in those distant times, when Reason was once reduced to a purely human principle, disconnected from its connection with the cosmos. We continue to oppose body and mind, art and science, poetry and physics, feelings and rational thought, pleasure and wisdom... Oh how I reject all these aberrations inherited from the odious dualistic superstition. Oh how sad I am that the premature attempt of the French revolutionaries unfortunately failed to restore the unity of nature.

Today, as yesterday, it is high time to fully revive the love of universal Reason. This feeling felt by the ancient materialists, fascinated by the natural world, enjoyers of real life and defenders of authentic joy. This majestic path taken by Lucretius, when he decided to sing the physics of Epicurus in a poem on the nature of things. This same impulse that led Leonardo da Vinci to merge painting, mathematics, sculpture,

and mechanics, and which makes us unanimously condemn the spiritualist hatred of the material world. “ I do not know in the name of what matter would be unworthy of divine nature ,”¹⁰⁵ exclaimed Spinoza. Against the grain of millennia dominated by the spiritualist desire to escape the world, Einstein began to speak of beauty to describe rational reality. We not only understand the omnipresence of rationality in the material universe, but it amazes us. Oh, how I love this sensitivity. The natural, yes, the natural is miraculous.

Rational Pleasure

Lover of nature and of his own Desire, for the liberated man, true wisdom will be the happy life. Opening the way to measured hedonism, Leucippus proclaimed that “ authentic joy is the goal of the soul: it is the joy that beautiful things bring . ”¹⁰⁶ These beautiful things are not imposed on us according to an external order. They exist only in ourselves. We do not desire anything because it would be absolutely good in nature, but on the contrary we call good the things we desire.

My desires express my essence, however, one must know how to understand one's desires so as not to confuse them with one's empty opinions, one's primal instincts, one's repressed impotences and the absurd conventions of one's time which threaten one's freedom and one's only chance to truly exist. Find among your desires which ones express your being, which come from the depths of your heart and manifest your ideals. Far from the insane, slaves to a torrent of mad passions, the rational Desire of the wise man is not an external constraint , sudden and alienating, but it is the will that emanates from the depths of his heart and takes shape thanks to his intellect. The happiness of the wise man has nothing in common with the frivolous satisfactions of the ignorant, nor with the excesses of the debauched. What has value is not all the empty pleasures devoid of tangible reason, but on the contrary true happiness is born from desires solidly constructed in the consciousness of the wise man, Epicurus explained to his disciple Menoeceus.

Within the mind fully conscious of itself, the primary emotions have evolved into reflective feelings and rational ideals that now assert

themselves as power and make law in the world. “ **Any desire that is born of Reason cannot be subject to excess** ,” ¹⁰⁷said Spinoza. The experience of this rational consciousness reveals my essence to me. Faced with the spectacle of the world, it gives birth to my intimate desires and awakens my moral, aesthetic, technical ideals... which forge my dreams and guide my pleasures. At the same time as such desires are formed, my understanding of the order of the world develops my feeling of existing by enriching it with the idea of what I want to be here, in such a way that the image that I end up forming of myself, and that I affirm, is a tertiary construction that is both rational and emotional.

In a harmonious mind, rational intelligence cannot therefore be opposed to feelings. Indeed, the rational decisions of the wise man cannot be constrained by his desires, because it is precisely his rational ideas that produce his strongest desires, those that dominate his emotional life, and guide his behavior by bringing out his existential glory. “ **It is not contrary to Reason to boast of something, but this feeling can come from Reason itself** ,” ¹⁰⁸said Spinoza. At every moment I feel my power to judge the emotion that invades me, by feeling whether it is in accord with my essence. I then see immediately, in full consciousness, whether I want to live it fully and praise it, or on the contrary to repress it and conquer it by using the joy coming from a greater ideal. Since this path dominates in me, in my lucid, clear-sighted, and blissful heart, I realize that my reasons and my feelings are two names for one and the same thing.

By virtue of their animal origin, all the pleasures of the human being do not always come from their innermost Causality. Even the wise man submits to the instincts coming from his biological body. As a general rule, it is up to him to fulfill the wishes of nature. He follows the natural pleasures that billions of years of evolution have bestowed upon his body, to guide him to the kingdom of life. “ **Only a fierce and sad superstition forbids the taking of pleasures** ,” ¹⁰⁹denounced Spinoza. The wise man considers all pleasure as a good, but he does not believe that all pleasure should be sought. He rejects passions with harmful consequences, those that threaten his freedom and his rational ideals, and which he naturally dominates thanks to the constancy that his inner pleasure provides him. Finally, and above all, he is given the opportunity to exalt his finest pleasures, those that are in harmony and fused with his

inner rationality. We see again that inner Desire is not the enemy of the passions of the body, but that it needs the modalities offered by the body to develop and take form. The attractions, natural affinities and relationships in the present world are so many opportunities for him to mingle with them and manifest themselves.

Thus, instead of inviting the caricature of rationalism, this cold state opposed to sensitivity, the liberated man only wants to order his desires in order to exalt the most beautiful. He invites everyone to feel his intimate reasons, in other words to awaken his artistic inspiration. For Democritus, the poet is a marvelous being, endowed with a faculty of perceiving better than anyone else ¹¹⁰. The awareness that the poet has of his intimate reasons, however, goes far beyond the framework of the reasoning that he is capable of explaining and formalizing. At each moment, his feelings in formation do not appear clearly to him. Overwhelmed, he feels them before understanding them. He senses his truth in his heart. Carried by an inner impulse, he is given to express it through all the senses that human nature offers to awaken. Poets always precede philosophers. Also, the more each person develops their sensitivity, the more their intimate reasons, conscious and semi-conscious, are structured, refine their tastes, exalt their desires and magnify their joy in contact with beautiful things. Thus, far from the ignorant who conventionally go into ecstasies, for the disciples of Epicurus, at the spectacle, the wise man takes more pleasure than everyone else.

The wise man has his own sense of beauty, very strongly idealized in himself, conscious that it comes from his inner being alone, and that he affirms on the world. “ **We must not seek every pleasure, but that which aims at the beautiful,** ” ¹¹¹ said Democritus. The wise man does not live in terror provoked by the certainty that one day fate will take away from him what he loves, but like a challenge thrown to the heavens, he contemplates everything he desires in this world, with the advance memory that each thing that has been truly loved, even if only for an instant, is worth for eternity. For him, the truth of Desire is not found in the wish to see loved things continue indefinitely. Desire is not an ever-unsatisfied thirst for immortality for singular things, but it is the manifestation of a heightened awareness of the present moment which associates with the now magnified sensation of existence a higher will to

act, to enjoy, to create... which transforms mortal things into eternal truths. “ It is in the nature of Reason to perceive things under the character of eternity ,” ¹¹²said Spinoza.

The wise man praises his finest pleasures, loves his desires and rejoices in his own joys. In contrast to powerless souls who are constantly agitated, devoid of ideals, incapable of truly wanting anything firm, the wise man has clearly affirmed his desires and knows how to contemplate those grandiose moments when his intimate reasons have triumphed. Such moments have a part of eternity in his memory. He knows they are forever etched in the cosmos. You must have been truly happy for at least one moment. Remember that moment. That moment is your life... Overwhelmed by his joy mixed with tears, Epicurus loved to let himself be penetrated by the memory of his greatest joys, once experienced with his departed friends. Echoing this tradition, many centuries later, the tomb of the Epicureans became the meeting place of lovers ¹¹³. In this magical place, the emotional charge became immense, when, hand in hand, she and he felt united before the feeling of infinity released by the tombstones of the god-men who had once revealed the entire nature of things.

Friendship among the Wise

To love oneself, by oneself, is the indispensable prerequisite for a free existence and the emergence of sincere feelings. To love oneself infinitely like a god, that is the secret of the wise man. To encourage his disciples to blossom this inner pleasure, Epicurus took to greeting them as if he were meeting Apollo himself. Only the wise man overwhelmed by self-pleasure truly has something to offer. Only the profound love of his being has been able to rid him of stupid, impotent desires and has given him the courage to live for his rational ideals. If you too do not wish to be indestructible, and if you do not find in the strength residing within yourself the will to take fate by the throat and become equal to the gods, how could you one day conquer with me?

The relationships that the wise maintain with other men are celebrations of the cult of Reason. The wise speak frankly and act

according to the principles that seem best to him; then everyone will assess his attitude according to the desires that his nature gives him. When the wise addresses his fellow men, he rejects the complacency and compassion that encourage weakness. Only straightforward words purge lies. Only at this price can one be liberated. If the wise cannot be himself and speak freely, and if others do not do the same, then human relationships have no meaning for him. Among themselves, the wise want to share all the truth they can conceive and express. In their eyes, the price of knowing themselves free and perfectly sincere is worth the risk of all disappointments. Moreover, the wise man will have much more esteem and sympathy for free hearts with whom he has had clear and assumed disagreements, than with all those who, under the influence of social codes dictated by powerless souls, believe they are making themselves agreeable by practicing this lie which they falsely call tolerance or politeness. In truth, to moderate one's thoughts or even to soften the appropriate tone of one's speech to take into account possible susceptibilities, is to despise the individuals to whom one is addressing oneself. Finally, see that if you can or have been hurt by the feeling or the word of another, it is never him that you should blame for his remarks, even if clumsy or ill-intentioned, but only yourself for not having known how to love yourself enough. Only then, when like a disciple of Democritus, the mind vows to respect itself in all circumstances, does it take the path of authentic wisdom.

The emotional causality of the liberated man works in the opposite direction to that of the fatalists: his soul is a fountain from which his feelings overflow, imposing his mark on the world, while the powerless soul is only a bottomless well that constantly yearns to be filled. The liberated man wants to unite his reasons with those of other beings to make his desires triumph, whereas the powerless soul seeks only to compensate for its internal shortcomings by the comfort of existing in the eyes of others. Wounded by its self-hatred, the powerless soul feels the vital need to be well thought of by those around it. It exerts pressure to silence even sincere criticism, and gives up its truth in exchange for a reciprocal compassion that degenerates human relations into mutual psychological assistance. Weakness debases human relationships in the mundanities of politeness and ruins any possibility of true friendship. The love of the fatalists soothes their internal disorder

but does not ignite any ideal. The wise man condemns the impotence in the soul which leads to continually demanding consideration for himself in disregard of the free feelings of others, demands tears for his fate, reduces love to compassion and enjoys the sacrifice of others for his pathological ego.

Unforgiving to himself, the liberated man is tough. Tough with weakness, and yet, this inexorable, uncompromising being is paradoxically the being most capable of giving birth to a sincere friendship and harboring true love. The feelings of the liberated man are initiated by the recognition of his own desires in the hearts of others. He sometimes realizes that he shares common causes with certain individuals, and above all also the same way of seeing, understanding, and desiring. Then, “ **the agreement of thoughts engenders friendship,** ”¹¹⁴ said Democritus. The liberated man feels in his friend something like another himself. His friendship is an extension of his self-love. Where the powerless soul goes so far as to pretend to love the other in order to have the comfort of being cherished in return, the liberated man wants to be the cause of joy for those he loves, regardless of what people think or will think of him. True love does not necessarily imply reciprocity. It is a free feeling that reveals itself through the exaltation of strong passions and not for the appeasement of torments. It comes from an agreement of desires and an admiration for the power of the loved one. It wants to be lived through a Roman friendship, where tenderness and affection come from one's own joy and are consecrated by unforgettable moments.

To the morbid need for love that powerless souls constantly feel, the wise man therefore opposes his ideal of a strong love and conceives of friendship as a union of power. Among the wise, there is no need for possession, nor any desire for power over the other. The wise man would be saddened to see his friend dispossessed of his identity. He wishes to see the one he loves rise through his own joys and the realization of his own desires to the same heights that he has so hard conquered. A warm impulse and admiring respect binds the souls of the indestructibles, always assured of free and sincere feelings between them. No pre-established conventional social pattern guides their friendship, which is lived freely. No one is committed. This friendship is manifested by an encounter that questions itself at every moment, and thus always remains sincere. It is only after the fact that some wise men sometimes realize

that they have reached, for a still indeterminate period, such a degree of union between them that a bond so strong has appeared that their stories are completely intertwined. Thus, it is paradoxically in the school of Epicurus, where everyone came freely and learned to cultivate their independence, that the disciples were surprised in return to discover themselves “ animated by the same spirit, by a common feeling, as in a true republic ” ¹¹⁵.

To achieve the transfiguration of existence to which this philosophy invites us will require such a fundamental upheaval of consciousness that this revolution will remain for a long time to come only an ideal, before perhaps one day, somewhere, a civilization dominated by wisdom appears.

The Kingdom of Reason

Beyond the valleys of my dreams lies the kingdom of Reason, that marvelous land where beings venerate Reason in God, and consciously choose the path that saves the freedom of all. So many centuries have passed since the public reading of the “Great System of the World.” Since that grandiose moment, forever etched in the history of the cosmos, how many human lives have been wasted by ignorance of the true nature of things, without the horizon of a massive awakening of humans yet visible. In what land do people live according to the cult of Reason? Where is the philosophy of nature celebrated? What school still praises wisdom? Humans, what have you done with the word of Zeus? You burned it! Yet what Democritus brought you was a piece of paradise. Dismayed by the inability of his fellow men to reach his ideal, where the soul, blissful and at peace, “*takes the measure of life*”¹¹⁶ and devotes itself to “*virtuous love, this correct Desire for beautiful things*”¹¹⁷, Democritus ends up isolating himself from the madness of men.

What is the human species worth in the scale of conscious beings? At the other end of the universe, have not atoms assembled to form beings so much superior to us? Man believes himself to be the summit of creation, when he is perhaps only a step towards something that has already begun to appear, and which surpasses him... Will

the love of wisdom remain only the quality of exceptional beings, isolated throughout history, or will we one day see this disposition dominate, and bring together all consciences on its universal values, like Democritus returning from his travels and proclaiming that “*the whole Earth opens itself to the soul of valor, for the homeland of the wise is the universe*”¹¹⁸? Will our descendants ravage this planet or will they succeed in spreading life and intelligence, up there, in the heavens? In the material cosmos, nothing guarantees one outcome rather than another. A group of supermen might one day give birth to a civilization dominated by wisdom, but humanity might just as well degenerate and regress by rejecting once again the lights it once carried. In truth, all these kinds of futures are possible, and thus, across the infinity of worlds, all these stories are realized. The vision of this cosmos without purpose or direction will frighten those beings whose impotent Desire is incapable

of being a source of meaning in itself, and who constantly demand a justification for the pain that existence is for them. The material universe can please only the wise man who loves his Desire under the character of eternity, because he feels himself as a divinity within the cosmos.

An Independent Divinity Within the Cosmos

If our innermost desires are indeed higher values, free from any theological order, at the fundamental level the arrangement and movement of atoms defines reality. Following the success of Democritus's materialist conception, some fatalists used the argument of physical determinism to try to justify their renunciation. According to them, if reality is this flow of matter where the deterministic movement of atoms draws the order and history of worlds, we have no power to act and must rely on the fate of physicists. Their reasoning speaks as if the mind were an immaterial entity separate from the physical world, subject to the action of matter, whereas matter and mind are two levels of the same reality. A part of the atoms of this world is nothing other than my mind and its conscious choices that influence the order of things. Consequently, the majority of places where matter realizes my desires are precisely those where my mind had the strength to affirm them. To succumb to the passivity of fatalists is therefore to introduce an additional choice into this world that will drastically reduce one's opportunities for success. Consequently, understanding one's connection to universal nature in no way justifies being passive in the face of events, nor renouncing one's desires. The wise man wants to shine in this existence. He does not add to the necessity already naturally present in events, an artificial constraint coming from the idea of necessity. " **There is no necessity to live under the empire of necessity** ," ¹¹⁹Epicurus said to his fatalist adversaries.

Truly, our salvation or eternal damnation depends on the disposition of our Desire here below. Indeed, what glorifying image could the intuition of the cosmic self possibly send back to the soul that corrupts itself and lies down before adversity? The depths of our nature being revealed by our intimate desires, the fatalist will discover only

nothingness at the bottom of his soul. The last judgment has already been pronounced here, in the present. He who has renounced his Desire is a dead man already buried. He who loves his own Desire is a finite and mortal incarnation of a god who lives in eternity.

The day when fatalists truly become aware of the infinity of worlds, they will use the same absurd reasoning to justify their renunciation, claiming that in any case, all possible stories exist throughout the cosmos. The fatalist argument will still forget that the type of story that can be realized is conditioned by the nature of the beings it contains. Due to the different nature of each being, the field of possibilities itself is altered. Even from the point of view of the great whole, all types of lived stories do not exist identically, nor in the same proportions, for all beings. As in the pantheon, all gods and goddesses are not equally powerful. Many minor deities are very weak and only manifest themselves accidentally, while some gods have an excess of vitality within them that makes them transform the history of the cosmos. Where the fatalist can almost not exist, the liberated man overflows with the power of being. He feels as if he has within him the essence of a very powerful god.

Immersed in this story without beginning or end, the liberated man sees that the only logical way to exist is to become everywhere what he is. Where the powerless soul bends, submits to fate or some other theological invention, the liberated man enjoys his victory over the blind forces of the cosmos. “ I have prevented your blows, O fate, and blocked all the ways by which you could reach me, we will not be defeated by you, nor by any unfortunate circumstance, ” ¹²⁰proudly proclaimed Metrodorus. “ The wise man mocks fate, which some make the absolute master of all things. Meditate, then, on all these teachings and you will live like a god among men, ” ¹²¹concluded Epicurus.

In truth, the infinity of worlds and physical determinism have only justified fatalism in the souls of those who had already chosen them. Indeed, while contemplating the infinity of worlds, Democritus praised “ the courage that minimizes the blows of fate ” ¹²²and “ the effort through which study conquers beautiful things . ” ¹²³While convinced that the universe is physically determined, Albert Einstein warned that “ the world will not be destroyed by those who do evil, but by those who

watch them without doing anything, ” ¹²⁴and ended his calls for the organization of peace between nations by declaring that “ the destiny of humanity will be that which it has deserved . ” ¹²⁵These wise men banish the decadent renunciation of the fatalists to preserve only rational determinism. These humanists believe in their essence, which they know is sustained by atoms, but whose meaning is revealed only in themselves.

Convinced that everything is already there, the wise man knows that he does not change the course of things. He does not bring his progress to the world. All his actions are part of the universe. Everything proceeds from the inevitable causal sequence. Whether the future leads towards progress or destruction is already written. The wise man is a component of the great story. He does not influence it. He is part of it. This knowledge does not discourage his efforts, nor does it make him passive in the face of evil. The wise man uses all means to make triumph what his innermost nature has judged good. He fights and represses what he judges evil. He uses all his strength to diminish or prevent what he considers unjust. He fights for his beauty and loves the good he brings to the world. This is how his higher nature expresses itself. Sometimes, the future leads towards a better world, and this is due to the fact that in certain places in the cosmos, a sufficient number of wise men have appeared. Elsewhere, everything sinks into decadence due to the blind laws of nature that have created the disorganized condition, and aggravated by fatalism, fanaticism, and other human follies and stupidities. In these sad places, however, the understanding of the wise man still gives him superiority over the ignorant. His knowledge soothes him. The feeling of determinism never directly serves him in making his decisions, but only to subsequently understand himself in the face of the world. After having tried his best, the wise man knows that hope makes him suffer needlessly. Since reality is the fruit of absolute necessity, there was only one achievable cosmos, where all stories must be lived.

With the exception of the Epicurean school, the idea of absolute physical determinism dominated our philosophical current, until the advent of quantum physics, and the Aspect experiment at the end of the 20th century led us to seriously re-examine the notions of Causality and determinism. Contrary to what was long believed, Causality and determinism are not necessarily two equivalent notions. Indeterminacy

within defined limits is not in itself contrary to the principle of Reason. In mathematics, some equations do admit several solutions (for example, $x^2=9$ admits two solutions: 3 and -3). Consequently, if the logical structure that governs our world contains multiple answers that cause the increase of complexity and information in our universe over time, then the present perceived here is only one of the possible consequences of our past. At the crossroads, chance cuts locally across a wider field of possibilities.

Such indeterminism of certain parameters of the material world does not change our understanding of global reality, where all possible histories are realized an infinite number of times. All possibilities not realized here are reproduced an infinite number of times elsewhere. Therefore, chance does not exist on a global scale, but only from the point of view of observers located in finite worlds. For the metaphysician who contemplates the totality of reality in its entirety, it always resembles the material cosmos, or Spinoza's god-nature, that is, the unique being, perfectly necessary, eternal, immutable and containing absolutely everything.

However, in a totally deterministic universe, the past already contained the future, and our becoming was entirely constrained by our past. Now that it appears that physical reality is fundamentally indeterminate, my existence, my thoughts and my actions were not already inscribed in the past of this world. From now on, each bubble-universe forms free consequences. It creates liberated reasons that act in return on the course of its own history. The future of our planet is driven by the independent reasons it contains. We no longer submit to fate. We write the future at every moment.

The question of material determinism touches on the interpretation of what we achieve in this world. When the mind understands itself to be freed from its own universe to the point that at any moment another story is possible, it then realizes that it is itself a critical actor who steers between one future or another. Because of quantum indeterminism, the Causality that today founds my will was not previously already decided by the past of this universe. Even at the level of material Causality, there is no longer any unity between my essence and the things that surround me. The heart of this philosopher no longer has quite the same status as the soul of the determinist sage. It is not a

part of the destiny of this world. It is no longer welded to any historical necessity. There is no longer any destiny at all, even on a physical scale.

The liberated man realizes that there is no necessity except in himself. There is no destiny except in one's heart. I am not a constituent element of the worlds I inhabit, but an entity that changes history in this or that direction. I am an independent switchman who decides between different possible destinies. Since the past of this world did not necessarily predetermine my existence, our world now exists here with me, and the same world exists elsewhere without me. By my existence, history has been broken in two. The future will now be different here. By the simple fact of existing, every being splits destiny at every moment, and changes the course of things forever.

For those who truly understand it, this vision disrupts the emotional image of oneself. Whereas the vision of historical necessity inspired the deterministic sage with calm and patience, the vision of the nonexistence of any destiny exalts consciousness as the true master of the universe. Like a Greco-Roman god, the liberated man conceives of himself as an independent divinity within the cosmos. He sees himself as an emanation that appears and reappears endlessly throughout stories to transform them. The liberated man is an authentic living god who flies from world to world, hammering reality with his imprint. Aware of the meaninglessness given to material worlds, he understands that his destiny belongs entirely to him. The principles of reality being fixed for eternity, it is up to him to transform reality. The liberated man is engaged in a cosmic battle. He feels invested with a quest to accomplish. Driven by his revolt against the unjust order produced by blind nature, the future of the worlds he crosses is now in his hands. The level of effervescence reaches its paroxysm. The feeling of existing can and must become overwhelming. Crossed by his fascination for universal Reason, it is invaded by his ardor and the impatience of his understood desires that the liberated man sweeps away one by one all the obstacles that oppose the establishment of the kingdom of his Reason.

Unfold this magnificence of existence, and you will find yourself filled with a sublime inner exaltation. It will forever mark your heart as a liberated man. Through it, the god who slumbered within you will awaken to the ultimate degree of being. The life of the god-man is a

glorious celebration of his innermost reasons. Constantly conscious of himself, of the universe, and of all things, he lives liberated by the love of universal Reason, this enchanted fascination for the divine nature around him, and this adoration of his own divine light which illuminates the cosmos from within.

The Ultimate Degree of Being?

Lost in an infinity of universes sterile to life, in a newly recreated universe-bubble, on a small planet, after billions of years of cataclysms pushing evolution, within a species tested by millions of years of atrocious animal suffering and still martyred by millennia of barbarism, ignorance and fanaticism, there, at the very end of the cosmic process, stands the ultimate degree of being? What thing could there possibly be above the living god, conscious of himself, of his eternal essence, of the past and future of all worlds; at once actor and enjoyer of his intimate desires, glorious contemplator of his being and his infinite power, master of destiny, his heart filled with the immeasurable joy that the vision of these immortal goods gives him?

Balance sheet of equivalences: The Triple Unity

the principle of Reason = the principle of logical Causality = the ultimate principle = God = necessity arising from logical simplicity = underlying coherence = the Logos = universal logical principles = mathematics = the great whole = non-nothingness (zero) = the vastest of multiverses = the infinity of worlds = the material cosmos = the natural expression of universal Reason = nature = reality = truth...

Intimate Reason = Intimate Desire = Inner Being = Material Soul
= Microcosm = Internal Causality that forges its rational ideals = Moral
Conscience animated by self-pleasure = All the feelings that flow from
the essence of the individual = Reasons associated with the
consciousness of existing = Desires mixed with the feeling of self =
Dreams of the child who discovers reality = The heart of liberated man...

the love of universal Reason = the feeling of immanence linked
to the idea of universal Causality = wonder for the Logos (cosmic
religiosity) = the deification of human Reason coming from the
recognition of the kinship which links the principle of the spirit (the
microcosm) to the whole of nature (the macrocosm) = the intellectual
love of God = the philosophical love of self = the disposition of the soul
which produces the freedom of the wise man = complete intellectual and
sentimental sincerity = unfailing respect for one's own thought = heroic
love of one's Desire = veneration of the infinite power which manifests
itself through one's liberated essence = the joy of being the equal of the
eternal gods = salvation = the glorious heart of the liberated spirit which
exalts its intimate desires and imposes its reasons on the worlds...

Note: These three series form our trinity (tri + unitas). Although they are three distinct things, Reason is always the divinity in them, manifested in its logical-material form (the principle of Reason), its personal form (intimate Reason), and finally in its moral, affective, saving and liberating form (the love of universal Reason), this third divine hypostasis resolving the existentialist conflict between the other two. Thus, we reconnect with the enlightened paganism of Democritus who deified Reason and venerated it in the form of a trinity (Athena Tritogenia) ¹²⁶.

Afterword

Here I am, at the end of my quest. Today, I realize even better than yesterday, how much I experienced the authentic philosophical birth in a purity rarely equaled. Having found no solid foundation in what surrounded me, I dared to wipe the slate clean of everything that had been introduced into my head. I agreed to reject everything wholesale, unconditionally. I had the madness, or the genius, to destroy myself, to throw myself headlong into an unknown... without any guarantee of being able to rebuild something, somewhere, one day. It was only once immersed in this extreme radicalism that I was confronted with the only thing that nothing can destroy: the universal Reason around me and my intimate Reason within me.

Everything I had to discover afterward was already contained in this single feeling. It is the foundation of my salvation, my freedom, my beatitude. However diverse the places I might still explore, everything will be nothing but rediscovery, nothing but a rebirth in new days of my pure love for the truth. My entire philosophical quest has been nothing but a willing deepening of the feeling that presided over the deepest sincerity of my soul; a perpetual bringing to light, through new paths, the innumerable facets of my love for universalized Reason. My heart is too big for this world alone. Nothing finite could ever satisfy it, except this infinite love for myself, this pure pleasure of existing that embraces all creation and which has returned, during this brief existence, to crystallize in the form of an eternal love for a handful of mortal things. To love in this way is to defy the heavens. To desire thus is to shake up the order of the universe from within, not because the immutable heavens might one day shatter, but because I have awakened, God. Can't you feel it too? From here, I hear the gods singing!

To reach such heights, I had to surrender myself entirely to an intuition in which I did not initially trust, and which ultimately carried me so far. It would seem that it saved me? In any case, it made me rebuild a universe in which it has established itself as a supreme value. I now feel as if I am living exceptional moments. Rare, indeed, are probably the places in the cosmos where I have been able to achieve such an awareness of reality. From here, my dreams have acquired a sort of echo.

I reach out to my desires and I hear them resonate, beyond my present life. They form a kind of aura that surrounds me. Immersed in this endless story, my Desire has become the beginning and the end of all things. Sometimes, I have the impression of being born a second time and, at the same time, I notice that the depths of my feelings have never really changed. My heart reaches back through the ages, and I feel here in communion with the beings of the past and the future. Even to consider the possibility that, during this existence, I may have imperfectly managed to glimpse the totality of reality is an idea so fascinating, so overwhelming, so beyond everything, that it generates in my consciousness a constant and inexhaustible wonder.

So have I truly glimpsed the summit of summits, or am I still only at the foot of even more dizzying heights? The desire to surpass the insurmountable has brought me this far. The same impulse will surely lead you to discover other unsuspected wonders.

If true philosophy consists in reconciling the mind and reality, without falling into the monstrosity of suppressing our humanity, nor into the corruption of fleeing into lies, then this essay is unequalled. I see no other path that leads to understanding and at the same time to enjoying reality so powerfully. I have not found a comparable major work for at least several centuries. It has been a long time since anyone has philosophized like Democritus. Even if, for a single mind, trying to construct a complete explanation of the cosmos remains a perilous undertaking, this attempt is nonetheless necessary, as beautiful as it is salutary; this is why I undertook it, and it was in itself the occasion of immense joy.

Having gathered the best knowledge of my time, while braving so many uncertainties, I am aware that I must have been mistaken on many points. I know that I will soon be led to question much, if not everything. I am ready. In my heart, the ideal of truth always provides more joy than the existential sorrows I will have to face. Having lived with other ideas that, over time, have proven false, I approach these with doubts. My past errors awaken the memory of apparent understanding that, in an instant, collapses like a house of cards. I know how easy it is to be mistaken when faced with such questions. To tell the truth, I have some doubts about having gone astray again, about having understood

nothing, and about finding myself one day again before the unknown. I know this risk. I have taken it before, I take it again today before you, and perhaps will take it again tomorrow. The honest man, in search of the truth, has no choice but to overcome this fear.

Human thought is not infallible. We will never be completely sure of what we think we know. Aware of this limitation, I have decided to live fully with the best present truth. Until the day these ideas are invalidated, if that day comes, I will live passionately with this vision of the cosmos. Noting, for the moment, the absence of problems, I sincerely believe in everything I have written. I remain convinced that the truth exists, and that we can discover it. I believe that one day we will form a coherent vision of our world and the meaning of our existence and that, on that day, without being completely sure, we will have reached the ultimate truth.

None of the philosophical systems I have ever read or sketched out captures as well everything I know and feel as the one I have just presented to you. This vision enlightens me about myself and the world around me. Faced with such a degree of coherence, I often reread myself and wonder if I might not have, this time, approached this ultimate truth?

I will tirelessly pursue this endless quest. I consider this little book an essay that I must improve upon. I invite you to use the ideas it has conveyed to you to reach for even better ones.

Willeime

*The 17th^{day} before the calends of May, Year 2762 since the founding of Rome,
= the 9th Floréal of the Year 217 of the revolutionary calendar,
= the 28th of April of the Year 2009 of the Gregorian calendar,
in Paris, France*

III - Comments

The Total Intelligibility of Reality

In this first commentary, I return to the genesis of my integral rationalism . I offer you some analyses around this philosophical position, as well as its relationship to other schools of thought.

Legitimizing the Thought of Reality. In order not to get lost in uncertainty, the mind must elevate the principle of thought to the rank of a mirror of truth. Undertaking to understand, and then to live, on the basis of this principle remains a gamble. If reality does not obey this first principle, it may not be possible to realize it. However, if someone finds a way to derive from this principle, within a coherent system, an explanation for their own existence and all the things around them, then this vision will henceforth have the right to eternally wonder if it is not the ultimate truth, without ever being able to acquire definitive certainty, nor go beyond it if there was something else to find.

After having claimed to doubt everything, René Descartes proposed to found his philosophy starting from the reasoning: “ **I think therefore I am** ” ¹²⁷. To accept this approach, however, one must first admit logic. Indeed, a “real” without logic would be a place where the statement “I think therefore I am” would no longer necessarily be true, because contradictions would be permitted. If things like $1+1=3$ or $1=0$ are truly possible, then formulas like “what exists does not exist” or “I think therefore I am not” are no longer necessarily unacceptable. See, then, the fundamental error on which spiritualist philosophies are based, which start from the thinking subject, to make consciousness the primary thing, and then reduce the principle of Reason to a simple faculty of the human mind. Any mind that does not first affirm the absolute omnipotence of logic is illegitimate to think about reality and even to affirm that it exists. Mathematical logic is the first certainty, from which everything around me must flow, including this second evidence that is my conscious existence. Even if the speculation on the origin of the worlds that I have proposed is partially erroneous and obviously insufficient, it has at least allowed you to glimpse how pure logic could give rise to reality.

The only thing that my philosophical doctrine therefore requires is to proclaim the absolute universality of the principle of Reason. Everything else then follows naturally. I was able to take this step after having acquired the conviction that Reason cannot be limited. To see Reason as a law that could possibly be surpassed elsewhere is to not have understood what Reason is. The principle of Reason does not exist. It is just an appearance for the human mind, which has the weakness of contradicting itself. Also, I think that mathematics can exist alone and is the basis of reality, because deep down it does not exist. It is nothing in itself, but just a human description of the infinite possibilities of non-contradiction. Unlike dogmatic metaphysics, this ultra-rationalism does not preserve a true a priori law. My only principle does not persist as an external postulate, but dissolves itself and disappears! And it is precisely because I see that Reason is not in fact a principle that I understand that it can neither be violated nor surpassed. The principle of Reason is nothing, which gives it the infinite power to be everything.

The Status of the Principle of Reason and Human Reason.

The status of the Principle of Reason is the key to philosophy. If reality is not rational, then reasoned thought cannot tend toward truth and has no philosophical dignity. Human Reason acquires its full legitimacy only if the basis of reality is fully rational, that is, if it is completely subject to the Principle of Reason. True philosophy is therefore possible only in an entirely rational universe. The obvious consequence, but one that almost everyone refuses to recognize, is that there is no other true philosophy than rationalist philosophy.

Democritus or Pyrrho. By inviting every thinker to first take a position on the universality of the principle of Reason, I propose a drastic clarification of the philosophical field: either you consider that the principle of Reason is not the absolute foundation of reality, and then, in my eyes, your approach stops here, because I do not see in the name of what you could henceforth think anything having philosophical dignity. Or you recognize Reason as the ultimate principle, and then, to this day, I cannot form any other image of reality than something like what Democritus, Spinoza or myself have glimpsed.

If the bases of reality obey a norm other than logical Causality,

then our thoughts have no legitimacy to speak of reality. If one rejects the universality of the principle of Reason, any word, any argument, any attempt to glimpse or express the truth is certainly already too much. We no longer have the right to try to form any image of it. Faced with reality, we are like a cat looking at $E=MC^2$ written on a wall in front of it. A cat's brain does not do mathematics, a faculty indispensable to the understanding of a physical theory. Consequently, anything the cat may meow will remain a hundred leagues from the idea expressed by the symbols in front of it, and will never approach it in any way. If you think that the principle of Reason is not the ultimate principle of reality, such is your condition. Since you no longer have any reason to grant any preference to any of your ideas or impressions, the most extreme skepticism is required. Truth becomes non-existent or inconceivable. Of all the diversity of philosophers, there are in fact only two true positions: the rationalist school and the skeptical school, the second being, in my opinion, best represented by figures as different as Socrates, Pyrrho of Elis, David Hume, and Friedrich Nietzsche.

It is not possible to hold an intermediate position between these two schools. To claim moderation in this area is to exclude oneself from the field of true philosophy. Certainly, rationalists are not forbidden to carry with them, as a limit to their fallible human thought, an impregnable skepticism, which in fact corresponds to the true position of Democritus, Einstein, and myself. On the other hand, to claim to be a moderate rationalist who uses Reason to philosophize but at the same time asserts that it is limited and powerless in the face of major metaphysical questions is to be in the skeptical camp where Reason is dead, and where any reasoned discourse on reality has become illegitimate and has only the status of a sophism, or rather of an imposture when it is nevertheless held. Certainly, a skeptic can choose to live with empirical reality, defend a certain morality in a personal capacity and even use Reason in practice, but he does not grant any of his choices, nor any of his ideas or emotions, the status of truth, or of universality. In the mouths of men, these words mean nothing to him. He leads his life by trying henceforth not to ask himself too many questions, and sees the pretensions of philosophy as vain chimeras. The skeptic can thus spend his life questioning himself on all subjects without ever concluding anything (Socrates), doubting reality, Causality and even the

existence of his own identity (Hume) even going so far as to promulgate a general indifference to any idea, event or emotion (Pyrrho), or rejecting the law of indifference to allow his emotions and contradictory ideas to manifest themselves in the innocence of becoming (Nietzsche).

True philosophical skepticism is a profound position, very different from non-understanding, or the hidden return of mystical-religious hopes. Those who use the skeptical position to allow themselves to preserve, behind a facade of doubt, spiritualist hopes that should normally have been swept away by a true skeptical conversion, have not risen to the dignity of this philosophy. Similarly, those who cannot approach an explanation of the totality of reality and cannot envisage the existence of a coherent explanation for everything are first of all ignorant, and it is this gap that justifies their false skepticism. Skepticism only achieves respectability in those who have detached themselves from all their passions, fears, prejudices and preconceptions about themselves and the world, and who have even managed to glimpse the power of an attempt to explain the totality of reality, but who rather senses falsity and not truth in the principle of Reason, and therefore remains irremediably drawn into the spiral of self-annihilation that opened this essay.

Knowledge and the Ladder of Certainty. Although I believe that truth exists and that we can discover it, I also think that the certainty of possessing it is, on the other hand, not accessible to us. By multiplying the hypotheses, I can play the advocate of any thesis, even the most absurd. To do this, I simply need to invoke the fragility of human thought, including the possibility of being manipulated. I can also envisage the possible questioning of certain notions accepted today in the future. Finally, even in the face of a flagrant error of calculation, the final result is not necessarily false, because the discovery of this error does not generally exclude the existence of a second error, elsewhere, which compensates for the first and leads, despite everything, in the end, to the correct result! For all these reasons, there is therefore no absolute certainty in human thought. There is no indisputable assertion, beyond all suspicion. There are only more or less serious or dubious ideas. There are weak, strong, very strong arguments, but never absolute. Honest and intelligent thought consists precisely in putting one's ideas in order, in

order to then base one's convictions on those that are the most solid. The philosopher wants everything to be open to question. He keeps himself as far from the naive belief in irrevocably established truths as from the certainty of definitive error. He wants to be able to doubt everything, but he does not thereby level all his ideas on an equal footing. Against the excesses of dogmatism and relativism, his intellectual effort consists precisely in a work of classification and permanent reevaluation of the strength of ideas among themselves. The wise man knows, but above all he knows why he knows, which allows his mind to hierarchize each of the known ideas by analyzing their dependencies on one another. As the validity of each idea is now controlled by others that serve to justify its place, well-consolidated ideas acquire the status of established knowledge, and all ideas can now be classified on the scale of certainties.

At the top of my best certainties, I place mathematical logic, then the consciousness of existing. Then come successively: scientifically verified theories, new deductions, empirically established notions, commonly accepted facts, coherent explanatory hypotheses, usual convictions, concordant rumor, unlikely things, apparently absurd notions, proven lies and at the very bottom, assertions based on manifest errors of calculation or logic.

The philosophical theory presented in this essay is a coherent explanatory hypothesis. It therefore has an overall average degree of certainty, even if some of the ideas with which it is associated have now left the field of mere metaphysical speculation to enter that of science, and therefore today possess a much higher degree of certainty.

Logic, Proof, and Truth. Traditional logic is based on the principle of the excluded middle, which states that a proposition is either true or false, implying that it and its opposite cannot both be true at the same time. Armed with this principle, we begin by postulating an arbitrary statement, then justifying its truth by showing that the opposite is false. However, if the initial proposition is poorly constructed, it and its opposite can both be false! This is, for example, the case of Russell's paradox, where the description "the barber shaves all the men who do not shave themselves" is incompatible with the proposition "the barber shaves himself" and with its opposite "the barber does not shave himself." Even more seriously, in mathematics and quantum physics,

two opposing propositions can both be true. For example, the proposition “x is a positive number” and the proposition “x is a negative number” are both valid in the case where $x^2=9$ which admits 3 and -3 as solutions.

The coexistence of opposites and complementarities is thus possible (electric charge +/-, matter/antimatter, female/male), but only because these opposites belong to the same logical structure. They emerge within the same reasoning, the same discourse; otherwise, they are contradictions, revealing a logical error. Indeed, valid opposites always arise from the same demonstrative sequence, while contradictions are illegitimate and appear in independent discourses. Our acceptance of opposites is therefore completely different from the method of the Sophists, Hegelians, and other relativist irrationalists who legitimized contradiction. For us, even if there may be different valid ways of solving a problem, they always all lead to the same results.

For the present doctrine, a truth exists only because it can be constructed by direct demonstration, without the use of the excluded middle (intuitionistic logic). However, even this does not constitute absolute proof of truth. Our everyday language is wrong to presuppose that something demonstrated should necessarily be accepted as proof. Indeed, reasoning only reveals a hidden consequence, already present in the initial presuppositions. One can therefore construct a direct demonstration that is perfectly valid on the logical level, but which leads to a false result, if the initial axiomatic concealed erroneous presuppositions. We see therefore that demonstration is not in itself, on its own, a criterion of truth, and that the result of a demonstration depends on its starting point. By starting from non-nothingness, we have limited our initial presuppositions to the simplest thing imaginable, which constitutes the immense strength and the very great elegance of our philosophical system.

Nothing and Everything. Long ago, Leucippus and Democritus founded materialist philosophy in Greece by seeking an answer to the question: Why is there something rather than nothing? Everything belongs either to the category of being or to that of non-being. It is not possible to think of a thing beyond these two categories, which would make an elucidation of this fundamental property an explanation for all of reality. Democritus designates being as a privative state of

nothingness, which suggests that he gave nothingness a primary status, from which its negation defines being/the existent, which he describes by the neologism *den* (the being), privation of *meden* (the nothingness)¹²⁸. Noting that being and non-being remain two possibilities that nothing seems able to separate a priori, Leucippus and Democritus considered that these two possibilities must therefore coexist at the same time. Seeking to make this metaphysical reflection correspond with perceived reality, they equated non-being with emptiness and being with matter¹²⁹. Since being itself had no more reason to manifest itself “ **in one form than another** , ”¹³⁰ they concluded that matter existed in the infinity of possible forms and then formed the infinity of imaginable things. Democritus fragments the immutable Being/One into an infinite multitude of corpuscles (atoms), separated by emptiness, allowing time and movement to exist for finite things within the great static whole. Thus, every real thing, bodies, phenomena, spirits, and even the images of the gods seen in dreams... is reduced to a state of matter.

Too eager to reconcile their metaphysical reflection with our empirical perception, Leucippus and Democritus made the mistake of equating non-being with infinite empty space. But even empty space is not the pinnacle of conceivable nothingness. Physical space is something. Mathematical zero, discovered after Democritus, offers a deeper and therefore more accurate conception of non-being. We have also proposed a correction to the metaphysics of Leucippus and Democritus by also showing that being and non-being do indeed coexist, but now because they are the same thing. Indeed, the decompositions of zero ($0=1-1=2+3-5=2x^2-6=...$) illustrate a logical truth that is both extremely simple and extraordinarily profound. All possible equations (including all the equations of physics) can be rewritten as being equal to 0 (any example $A+B=C$ can be rewritten $A+BC=0$). Thus, all imaginable equations are equal to each other and are equal to 0; and therefore, the set of all possible equations is nothing. To the question why is there something rather than nothing, we therefore respond that we must simply realize that the most infinite whole and the most absolute nothing are in fact the same thing, and that there has therefore never been a choice! The totality of beings, taken in its entirety, is reduced to the most fundamental of imaginable nothings, or conversely from this absolute non-being eternally flows the super-infinite totality of realized

possibilities. When we rise to infinity, physical concepts like time disappear, and an infinite universe seen globally is no longer a physical object, but a mathematical structure. Now, since this structure is reducible to an equation, it is in fact only a form of zero, that is, a possible state of nothingness. Since the largest of the multiverses contains absolutely all possible mathematical structures, it actually contains no information, no arbitrary data. It is simply the most complete description of nothingness, the most hyper-complexified state possible that combines all possible forms of zero.

Non-Being is therefore the point of view of the most complete totality, while Being takes its meaning with finitude. As with Democritus, Being and Non-Being coexist, without there being any passage from one to the other, and without logical contradiction. The equivalence has been demonstrated here mathematically, and illustrates again the limits of the excluded middle, already rejected in antiquity by Democritus and Epicurus ¹³¹.

Thus, while maintaining that nothing can spring from nothingness (because $0=1$ is a violation of logic), we see that nothingness contains the super-infinite great-whole, which therefore necessarily exists. In conclusion, our conception therefore fits more broadly into the metaphysical current which affirmed that the existence of the whole of reality, nature, was necessary (Spinoza).

The Uncaused Cause. Against our metaphysical position, we find mainly the belief in an external god, architect and creator of the universe. In an attempt to prove the existence of this god, Plato and Aristotle begin by looking for the cause of a thing, then the cause of the cause, then the cause of the cause of the cause and so on until they postulate the existence of a first cause, also called “the unmoved mover”, “the uncaused cause” or simply transcendent god ¹³². However, the reasoning that introduces the idea of an uncaused cause in the name of Causality is completely fallacious, since it abolishes the principle on which it is based. Indeed, an uncaused cause violates the principle of Causality, yet it is in the name of this principle that Plato and Aristotle affirm the existence of their god. It is precisely in order to have a physical cause at the origin of the material universe that theologians claim to deduce the existence of their god. But since in the end believers must

accept the idea that their uncaused god exists all by itself, without any external cause, why not simplify the problem and consider that the material universe as a whole is god; that it exists alone, without the need for external divine action? Why not transfer the divine faculty of being able to exist without external reason, to the entire universe as Bruno and Spinoza do? When one rises to infinity, time freezes and the totality of space-time seen as a whole is no longer a physical entity, but becomes a mathematical object, which has a necessary existence in logic, like any mathematical structure. The infinite universe therefore does not need an uncaused physical cause to exist. And if your mind is incapable of rising to these cosmic visions and cannot glimpse how the universe can float all by itself into existence, by the mere necessity of its nature, at least recognize the futility of resorting to the uncaused magical cause. Theologians only push the difficulty of understanding the existence of the universe back to the insoluble mystery of the origin of their god. Diderot ridiculed this shifting of the problem: “ Ask an Indian why the world remains suspended in the air, he will answer that it is carried on the back of an elephant, and what will the elephant support it on? On a tortoise; and the tortoise, who will support it? This Indian makes you feel sorry for him, and one could say to you as to him: my friend, first confess your ignorance, and spare me the elephant and the tortoise . ”¹³³

An uncaused cause would introduce energy into the universe, which would violate the law of conservation of energy, nullify Noether's theorem, and thus destroy all the laws of physics. The believers' transcendent god is a physical cause interacting with the material world, but at the same time this cause cannot be physical because it violates all the most fundamental principles of physics! This contradiction shows that this type of god is a false concept. It has no essence. It is incompatible with the rational explanation of nature. The uncaused cause is a magical cause originating from the irrational imagination of believers. With all due respect to theologians, a magical principle cannot be demonstrated. And if this god is inaccessible to Reason, it is simply because it is an absurdity which contains a self-contradiction in its very essence, which proves its non-existence for anyone who admits the universality of Reason, everywhere in and beyond the universe.

Furthermore, let us empirically note that nothing perceptible in nature manifestly betrays the existence of such a supernatural entity ¹³⁴.

I therefore conclude that this idea of god exists in the minds of men only because of this fallacious reasoning. Consequently, this conception of god does not even rise to the level of a useless hypothesis, but is indeed a false concept, to be ranked at the very bottom of the scale of certainties. As for believing, in addition, that this god would have a will while being immutable and located outside of time, or that this god would be both all good and all powerful while allowing evil to exist, these are again mortal contradictions which demonstrate that the god of believers has no more essence or existence than a square circle.

The idea of God, conveyed by most religions, actually originates from ignorance and superstition. It was in fact the surprise and fear of prehistoric men in the face of natural phenomena, once incomprehensible, that suggested the idea of a magical, supernatural, transcendent entity, surpassing human Reason and above things. To believe in the existence of this type of God is to affirm the metaphysical limit of the principle of Reason and therefore to establish the incapacity of human Reason in the face of mysteries. This conception of God rests from the beginning on the so-called limits of Reason and it has favored all the false philosophy that goes with it, and which we have witnessed almost exclusively in recent millennia.

Mathematical Arguments Against Integral Rationalism. The paradox of Achilles and the tortoise presented by Zeno of Elea has been invoked many times in philosophy to assert the supposed limits of Reason or the inability of mathematized science to perceive reality. This paradox comes from the false intuition that an infinite sum necessarily leads to infinity, whereas in this case, calculation shows that the infinite sum gives a finite number. See that the number $1.777\dots$ can be enlarged to infinity by successively adding an infinity of digits after the decimal point, but it will always remain a finite number, clearly less than 1.8. Thus, one could also claim that there are irrational ($\sqrt{2}$) or transcendental (π) numbers, but this appearance of an argument is in fact based only on the confusion produced by clumsy names, because these numbers are just as rational as the others. Complex numbers ($i^2 = -1$) pose an even more delicate problem, because at first glance they seem not far removed from absurdities like $1+1=3$. Yet, contrary to a first impression, they do not violate logic and have a meaning that is now more understandable since

a geometric interpretation has been found, as being representable by a number existing in a perpendicular spatial dimension (the complex plane)¹³⁵. This case warns us against our ability to immediately discern what is rational from what is not. In the extreme, perhaps one day we will see a discipline where $1+1=3$ appears, but this will be due to a particular frame of reference. In non-Euclidean geometry, it is now possible to construct a triangle whose sum of angles is different from 180° without refuting the universal validity of this property in Euclid's space. Also, since Einstein's special relativity, the law of additivity of speeds is no longer linear ($1+1<2$), and this does not call into question either logic or the principle of addition in arithmetic. Like physical laws, mathematical theorems also have, in a way, a domain of validity. In the extreme, we can abolish the idea of universal mathematical truths, to keep only the purest rationality which manifests itself at the heart of logic, the very one that the ancients called Logos and that I have called the principle of Reason and which structures every possible form of rational reality.

Gödel's incompleteness theorem reveals the existence of mathematically undecidable propositions and is frequently presented by our opponents as proof of the limits of Reason. While Peano arithmetic allows the construction of undecidable propositions on the model of Epimenides' paradox, a simpler form of arithmetic, without multiplication (Presburger arithmetic), allows one to escape Gödel's theorem, because it requires each multiplication to be decomposed into a series of additions (2×3 becomes $2+2+2$), which prohibits the construction of undecidable general propositions. Similarly, in Conway's Game of Life, noted for its surprising ability to quickly reveal emergent properties, the prediction of the ultimate fate (death or persistence) of the game's configurations is also an undecidable problem¹³⁶. Although it has been proven that there is no property or algorithm that can resolve this question a priori for any configuration in general, each individual destiny still remains calculable in the game, and therefore remains concretely determinable. These examples illustrate the failure of the global approach to certain problems and the need to decompose generalizations into an infinity of specific concrete cases to allow knowledge of reality.

Theologians disguised as philosophers almost always reveal themselves by their great passion for the supposed limits of Reason. They

use the authority of reasoning, demonstrations, and now even mathematical theorems to combat complete rationalism, which is not without posing a serious methodological problem for them. “ We cannot entirely excuse them, since, in order to repel Reason, they call upon it itself to their aid, and claim, by certain reasons, to convince Reason of uncertainty, ” ¹³⁷denounced Spinoza. It must be recognized that no mathematical theorem can refute rationalism, because it is precisely mathematical theorems that teach us what logic implies. Gödel's theorem does not prove the limits of Reason, because the undecidability that it reveals to us has precisely been formally demonstrated. When it is mathematically proven that a problem has no solution (squaring the circle), I do not see this as a deficiency of Reason, as if a mystery remained hidden behind it, but I simply see it as the definition of what is meaning and truth. Some systems of equations have no solution, and there is nothing to look for beyond them. Similarly, some functions are not calculable or are not defined for certain values. The deepest answer is sometimes that there is no answer or that we cannot decide this question, and this is a perfectly clear result that must be accepted. As for asking me how much is the fourth angle of the triangle, what is the area of the number two or how to draw a square circle, it is obvious that such questions permitted by human language also have no answers because they are so absurd. Apart from continuing to maintain confusion by distorting the meaning of mathematical results, the best hope that our adversaries would have of making us doubt certainly does not lie within mathematics, but on the contrary it would be to show us a natural phenomenon that no scientist has managed to mathematize. For example, if the human mind had not managed to develop quantum theory, capable of mathematizing the strange behavior of elementary particles, then the observation of this enigmatic world could have opened a historical period during which a usable observation would have existed against our ultra-rationalist conception of reality... but to this day, all known phenomena, from particle physics to the formation of concepts and feelings in the human brain, obey forms of rational logic.

Einstein's Epistemology. The sensation of pure Reason is nowhere better experienced than within Euclidean geometry. There, the properties of figures and theorems follow with such clarity that only the

confusion of the human mind can imagine a mystery upstream, and constantly demand whys for the most perfect of necessities.

If in mathematics, we arrive, after efforts, at an absolutely clear understanding of concepts and their logical consequences, it is not possible to say the same in physics: electricity, matter, energy, magnetic field, gravity.... but what do we understand behind these words? The idea of a geometric figure is conceived with such clarity, that you can visualize a new one by thought without ever having observed it in the world, while the concept of gravitational attraction is known to us only through sensory experience and remains unintelligible. After all, why not a gravitational repulsion? The geometric properties of the triangle are deduced by the power of pure Reason alone, whereas the links of Causality between objects in the physical world, for example the fact that heat boils water, were not deduced through a knowledge of the essence of these things, but are known only through observation, David Hume noted. The concepts we have of physical reality are in our minds thanks to our contact with the world, but they do not give us any deep understanding of nature. We do not see reality, but only the representation we make of it in our brains. We do not think with the true categories of reality, but only with innate or acquired notions.

Since Galileo reaffirmed that the world was written in mathematical language ¹³⁸, great scientists have constructed powerful theoretical models that effectively describe mysterious phenomena, such as electricity, and show us that all these things obey fixed laws. Yet, science continues to rely on artificial concepts that leave us ignorant of the real nature of things. Even if these concepts prove useful in the experimentally verified domain of validity, they do not give us the key to understanding natural phenomena.

Einstein was well aware of the limits of empirical science. His greatest achievement, the theory of general relativity, confirmed his direction: “ the problem of gravitation converted me to a rationalism which leads me to seek the only credible source of truth in mathematical simplicity . ” ¹³⁹By successfully explaining the secret of the mysterious gravitational attraction through the concept of curved space-time, Einstein opened the way to a finalized science, where all physical concepts would be founded in pure Reason, that is to say in mathematical logic: “ our experience up to this day justifies in us the feeling that nature

is the realization of the greatest mathematically conceivable simplicity. My conviction is that a pure mathematical construction allows us to discover concepts, and the laws that connect them, and gives us the key to understanding the phenomena of nature. Experience can of course guide us in our choice of the use of mathematical concepts, it cannot be the source from which they come; experience remains of course the only criterion of the physical usefulness of a mathematical construction, but the true creative principle resides in mathematics. In a certain sense, therefore, I believe it is true that pure thought can reach reality, as the ancients had dreamed of . ”¹⁴⁰

Einstein spent the last thirty years of his life trying to account for all natural phenomena in this way. He envisioned an ultimate physical theory that would no longer contain any arbitrary elements and where everything would follow with the same necessity as in geometry: “ the ultimate goal of the physicist is to discover the elementary and universal laws of nature from which the cosmos can be constructed by pure deduction ¹⁴¹. ” “A truly rational theory should allow the elementary particles (electrons etc.) to be deduced and not be obliged to posit them a priori. (Physical) constants can only be of a rational kind, such as Pi or e .

” ¹⁴²Einstein’s dream is an ultra-rationalist response to the skeptical criticism of our empirical concepts. David Hume noted that, with the exception of mathematics, none of our ideas or logical deductions are truly certain or necessary, and concluded that our concepts come only from habit in an incomprehensible world. Einstein took note of Hume's excellent criticisms, which also helped him to question our usual concepts of space and time, but basically, Einstein responds, with Democritus and Spinoza, that everything in the universe must exist with the same necessity as mathematics, and it is because this necessity is of incredible complexity that it does not appear to us at first sight; however, a thorough analysis allows us to glimpse it. Contrary to all those who want to believe in the irreducible and therefore inexplicable status of certain notions, for Einstein and Democritus, absolutely all the richness of reality is ultimately reducible to the most elementary logic ¹⁴³. Following in Einstein's footsteps, many physicists are now convinced of the existence of underlying principles that unify the entire diversity of entities we perceive. Nobel Prize winner in physics Stephen Weinberg

thus asserts that we will one day succeed in discovering " the ultimate laws of nature , " ¹⁴⁴that is, in unifying all the principles and concepts present in our universe by reducing them to the consequences of a master equation. The famous physicist Stephen Hawking continues Einstein's words and spirit when he says on this subject: " If we discover a complete theory, it will be the ultimate triumph of human Reason, and then we will know the mind of God .

" ¹⁴⁵**Reality and Conceptual Representation.** If in its deepest foundations, reality is pure Reason itself, how can human beings represent it? Thinking requires the creation of categories, but our artificial concepts introduce a distortion and a reduction in relation to the complexity of reality. Great thinkers and theorists constantly renew our concepts to get ever closer to reality, but in truth, however effective it may be, any empirical concept is always illegitimate for conceiving reality. Only concepts derived from pure Reason, that is to say, mathematical concepts, can claim to give us access to ultimate reality, provided we have a perfect understanding of these fundamental concepts. However, I am not certain that we have a perfect mastery of even the concept of number, even though it is the simplest of common mathematical concepts. Behind the idea of number, many in antiquity saw only integers, while this concept continues to be enriched with the progressive discovery of decimals, reals, complexes, hypercomplexes, surreals... Moreover, whole numbers are perhaps not fundamental concepts. For logicians, mathematics is based on logic alone and $1+1=2$ is demonstrated from a set of axioms considered more elementary ¹⁴⁶.

It therefore seems obvious that extraterrestrial intelligences know other forms of mathematics which completely escape us, and which allow more complete and deeper visions of reality than the approximation which we can currently form.

Empirical Rationalism. We ourselves are a part of the unique, immutable, eternal, infinite being, existing only by its own logical power, which Spinoza called nature or God. Recognizing the universality of the principle of Reason allows us to intuit the totality of reality as the natural expression of universal logic, where every rational idea necessarily exists somewhere in the material cosmos ¹⁴⁷. This view, however, advances our

understanding of the true nature of the particular things around us very little. Apart from the conviction that everything corresponds to mathematizable structures and that the irrational definitely cannot exist, this view does not tell me what kinds of mathematical objects compose my world, and leaves me ignorant of the astonishing properties that these entities might contain. Pure Reason shows the great whole, but it does not say in which of its parts we currently reside ¹⁴⁸. Only empirical science can test the relevance of this or that rational hypothesis, in order to see if it corresponds to this world, knowing that, even if certain mathematical models seem to agree very well with observations, they could be only an approximation of the true structure present here, surely much more complex.

Empiricism and the Theory of Everything. Experience is never wrong. Sensation is always true in itself. It does not lie, and if we are mistaken, it is because of the erroneous interpretation our thoughts make of it. Feeling motionless and seeing the sun revolve around us is a true sensation, a consequence of the biology of the human body and our position on Earth; a sensation that Galileo absolutely does not deny and that he can even explain. The error consists only in granting this sensation the immediate idea that it arouses in us. From this point of view, even optical illusions, sensations experienced during sleep or under the influence of drugs are true, but only as a reality experienced during a mirage, a dream, or a delirium.

Sensible experience is therefore in itself a solid and incontestable starting point that must then be meticulously analyzed. By proposing concepts to interpret perceived phenomena, thought helps to bring order to the data gathered by the senses. By then bringing together different phenomena under the authority of a global interpretation, a scientific theory helps to deepen our understanding of things. However, since such a structure only applies to a limited field, even if the experimental success of the theory suggests that the proposed ideas must have, somewhere, a certain relevance, nothing ensures their universal validity. Science only offers a temporary image of the world and approaches the truth through successive models that are all intended to be improved, transformed, or even replaced, explained Ludwig Boltzmann. Any scientific theory only concerns a part of reality. Also, even if it is

extraordinarily well confirmed by multiple experiments, the theory never offers the guarantee of having truly grasped the essence of things. The history of science shows that when the theory is expanded to take into account other phenomena, the proposed image of the world can sometimes change radically. Galileo's principle of relativity completely transformed the concepts of mobility and immobility, just as palingenesis (rebirth by re-creation) metamorphoses those of mortality and immortality. Consequently, all physical and metaphysical concepts are susceptible to radical changes in meaning. Empirical science is therefore useful in guiding us towards the path of truth, but it is incapable of reaching the bottom of things. Only a set of ideas produced in a “**wildly speculative manner**,”¹⁴⁹ explained Einstein, and rising as a theory of everything has the power to touch the ultimate truth, with no guarantee of having reached it, even if we did.

Scientific Realism. One of the greatest obstacles to the progress of knowledge is the illusion of understanding. The greatest error of Democritus and Epicurus was to want to explain everything, when they did not have the means to do so, and therefore to sometimes allow themselves to be convinced by false or superficial explanations. The reasoned speculation of the human mind produces many shortcuts and errors. So, if tomorrow, a theorist claims to have found the equation governing our universe, will we be convinced that we possess the ultimate knowledge? Our opponents will say that our trust in Reason has been nothing but a dogma from the start, and that this belief has ended up creating its own illusion. Indeed, since logical coherence remains, after all, only a human assessment, and our rational faculties are a framework from which we cannot escape, if Reason is not the ultimate principle, then human Reason is perhaps only going around in circles with its own categories. If she asks the questions and answers, she can deceive us by giving the impression of understanding, when in fact she does not grasp anything of reality that obeys another standard.

To improve the degree of certainty of our ideas, we invented science, which allows us to provide experimental validation or refutation of this or that theoretical idea. The great paradigm of science formulated by Francis Bacon is that an observation or an experiment is capable of providing independent confirmation or refutation of an idea produced by

thought. Established science is thus solid knowledge that achieves consensus because it is based on conceptions supported by multiple observational and experimental tests. Indeed, among the various sources capable of generating ideas in the mind (sensation, calculation, dream, esoteric belief, mystical intuition, etc.), I notice that only logical reasoning and sensation from the senses (sight, hearing, touch, etc.) confirm each other, while the other sources of ideas have never been able to be independently confirmed, and generally produce ideas contrary to what the only two sources that agree teach me.

Let us take the very simple example of a bag filled with 10 coins from which someone has taken 7 coins. By performing a calculation, my rational faculties give me an idea of the number of coins remaining. By putting my hand into this bag to feel the coins, the sensation also gives me an idea of the number remaining. I find that only Reason and sense experience systematically agree with each other on the result. On the contrary, the predictions of a pseudo-science like astrology fail to agree with observations and experiments ¹⁵⁰. From this comes my feeling of the existence of an external, objective and rational reality, even if I perceive it incompletely and understand it imperfectly.

Now we can use the agreement between Reason and experience to test our understanding of things and see if it is illusory. To do this, we simply need to correctly deduce a new prediction from our understanding and check whether or not it is realized in the world of experience. If reality were inaccessible to us because its true categories have absolutely nothing to do with those of our thought, and Reason only subsequently reinterprets our impression of reality, it would be improbable that a scientific theory could make predictions that would agree with what our senses have not yet perceived, these senses which are not rational knowledge. The extraordinary spectacle of the success of science shows that the agreement between rational calculation and sensory experience is valid wherever it has been tested. This reinforces in us the feeling that “the order of nature corresponds to the world of thought,” ¹⁵¹ explained Einstein. Since several scientific theories have become capable of anticipating experimental results, the assumption that our intellectual faculties have absolutely nothing to do with reality has become a very difficult thesis to support.

For millennia, humans observed the movement of the planets

without being able to anticipate their future positions, until Newton's theory allowed us to calculate them. The considerable success of this type of theory has reinforced our conviction that rationality is also in nature, and not only in our heads. Even if Newton's equations are based on the obscure concept of universal attraction, the fact that they are able to predict the position of celestial bodies shows that there is an external rational order that they are capable of grasping. Although we have known since Einstein how Newton's theory is only a first approximation, the extraordinary success of this theory shows, despite all its limitations, that it is connected to the real order of the world. Unlike pseudosciences, Newton's equations are not just a tinkering to subsequently account for already known sensible reality, but are capable of being reliably used to predict information that they do not themselves contain.

Rational Metaphysics in Science. When a coherent theory can reliably account for various phenomena, it becomes tempting to use this understanding to try to glimpse what lies beyond the perceptible world. Even if my body has only limited sense experience, my rational thought can then try to perceive the order of things beyond. Although all conjecture is obviously risky, especially when starting from a partial understanding of reality, some extraordinary successes in science have shown in retrospect that such theoretical speculations had been legitimate. For example, the planet Neptune was discovered because its position in the sky could be deduced from observed perturbations in the orbit of Uranus. Similarly, particle physics allowed us to guess at the existence of the neutrino and the top quark long before they were detected experimentally.

This kind of rational miracle is even more astonishing when the theory contains completely unexpected consequences and predicts the existence of objects whose very concept was still unsuspected, such as black holes, lasers, or antimatter. Indeed, when Paul Dirac combined relativity and quantum physics, he obtained his famous equation where energy had two solutions: m and $-m$ (m for matter). The idea of negative matter initially seemed like a mathematical anomaly, until shortly afterward antimatter was discovered, whose existence had, in fact, been announced to us! Mathematical logic was mixed with the theory describing matter-energy relationships, the concept of negative matter

resulted, and it is actually realized in the physical world, precisely under the conditions predicted by the theory. In this example, the concept of antimatter completely preceded the experience, which illustrates that mathematical concepts are not just categories of our mind to retrospectively interpret sensible experiences, but that, in a certain way, they also exist in reality external to our consciousness.

Skepticism, empiricism, positivism... are incapable of accounting for this kind of success. These successes, on the other hand, are strong elements in favor of our conception of reality. The successes of science as a whole constitute an experimental confirmation of cosmic rationalism.

Since Democritus, rationalist metaphysics has not only made it possible to anticipate the content of the universe, but also to reach the heart of the laws of nature. All current physics is based on the principle of relativity, but it is the philosophical conviction that the universe is infinite that eliminates the idea of an absolute frame of reference for movement, and which led Giordano Bruno to state this principle¹⁵², then taken up by Galileo, then extended by Einstein to time, and from which miraculously follows the link between mass, energy, space and time ($E=MC^2$).

Since our materialist paradigm asserts that the complex is explained by the simple, it encourages us to seek the maximum logical simplicity in the organization of the laws of nature and to unify all the elements of reality; this philosophical presupposition has proven to be an extremely powerful guide to theoretical speculation, allowing astonishing discoveries in fundamental science that would not have been possible otherwise. For example, when the standard model of particle physics failed to agree with the observed mass of elementary particles, a purely empirical approach would normally have led to the rejection of this theory because it was contradicted by experiment, but several physicists proposed to save it by the ad hoc hypothesis of the Higgs field, because this elegant model allowed the unification of fundamental interactions, that is, a greater simplicity in the understanding of the forces of nature, and this audacity finally led to the discovery of the Higgs boson that no empirical approach could otherwise have predicted. As in the past, with Mendeleev's periodic classification of the elements, it was

possible to anticipate the existence of new laws and then new objects of nature, and to predict their properties before observing them, on the sole confidence that the internal elegance of the theory provides a clue that leads to external physical reality. “ Anyone who has experienced the success of the advances made in the rational unification of the structure of the world is moved by a profound reverence for the rationality that manifests itself in existence. ”¹⁵³ said Einstein.

The Spiritualist Objection. The agreement of the sensible and the rational is the foundation of the scientific approach. To maintain its strength, this method therefore requires admitting the existence of an objective world, external to human consciousness. A possible flaw exists, however, if Reason and sensation are not two independent sources of ideas, but if they interfere, or even if they are one and the same thing, which would put this single source on an equal footing with any other source of ideas, and there would no longer be any preferred method of knowledge. One can, in fact, suppose the existence of a hidden link uniting Reason and sensations, either by proposing that something in external reality manipulates the mind, or by imagining that it is the mind that creates the illusion of an external reality. Against the existence of such a link, I note that when my rational faculties are wrong, for example when I make a calculation error, I still find the correct result through sensation in the physical world, and not the result I hoped to obtain before realizing my mistake, which invalidates the existence of a direct link (my consciousness directly creating my ideas of the sensible world or vice versa) and suggests that I am indeed dealing with two independent sources of ideas (one intellectual, the other sensible), which confirm each other and inform me about an independent entity called the real.

Despite common sense, proponents of integral spiritualism (commonly called idealism) believe that the physical world actually exists only in our minds, as in a dream. This raises the question of what allows the agreement of different consciousnesses with the perceptible world. Indeed, every day, different minds agree on the nature of the external world, which can only be understood with the existence of a substance independent of the subjectivity of consciousnesses, and which we usually identify as matter. However, according to them, the material

world actually exists only in our minds; therefore, to explain the agreement of different consciousnesses, they must reintroduce an entity that does the same work as absolute matter in order to guarantee the objectivity of observations. This is, for example, the order pre-established by the transcendent God in Leibniz. Already in Berkeley's spiritualism there was something that created the illusion of the material world, and that Bishop Berkeley dogmatically identifies with his Christian god... and these confessions illustrate well the weakness of these antimaterialist thoughts. Indeed, they deny first of all that an external and absolute reality (matter) determines our representations, but they are still obliged to introduce something behind the phenomena, which is the cause of our perceptions! Kant also got caught in this contradiction, and following Jacobi's criticisms, he had to propose a second edition of his Critique of Pure Reason to try to overcome this problem ¹⁵⁴, but I don't see that he, or anyone else, managed to resolve it. In summary, if we reject the existence of matter as an independent entity that pre-exists consciousness, we must know that we will be obliged to reintroduce something even more dubious and much less established than matter to replace it.

Integral Spiritualism is encouraged by the experience of dreaming. Dreams are generally so intoxicating that we only realize upon waking that they were an illusion. What then tells me that I am not still dreaming here? To an attentive mind, however, dreams differ from waking in their lack of internal coherence and the poor structuring of events. Thus, if the dream persists, I usually manage to become aware that I am dreaming within my own dream (lucid dreaming). Minds inattentive to the coherence of the reality around them are less able to make this distinction and succumb to the idea that the dream continues all the time. However, if the material world were a kind of illusion associated with human consciousness, then no events could have taken place before the appearance of this consciousness. Physical reality should therefore begin and end with the human mind, but contemporary science describes, through fossils and radioactive dating, events such as the birth of the solar system or the appearance of plants, which took place before the appearance of any human consciousness and which are therefore incompatible with the integral spiritualist, as Schopenhauer recognized ¹⁵⁵.

If human consciousness had a higher degree of existence than the physical world, we would expect it not to be directly altered by material phenomena, but medicine shows that the functioning of consciousness depends on neurobiological processes in the brain. The existence of certain molecules (alcohol, sleeping pills, drugs, hallucinogens, neuroleptics, etc.) capable of disrupting or restoring the functioning of consciousness is an old observation demonstrating that the human mind rests on material foundations. Similarly, the experience of waking and sleeping shows each of us that our consciousness switches on and off like a machine. Today, our ability to guess thoughts and even read dreams using computer algorithms coupled with brain imaging suggests that brain activity is sufficient to explain consciousness ¹⁵⁶. This conclusion is also supported by the study of patients with lesions in various regions of the cerebral hemispheres and affected by specific disorders, sometimes including disturbances that affect their character and their ability to form feelings ¹⁵⁷. Thus, a large number of new and old observations converge on the idea that the mind is a process based on material foundations, and functioning according to rational principles.

Spiritualists consider the mind to be the primary reality before matter. However, a careful examination of the concept of mind shows that it is made up of at least two different things: memory and analytical ability. Without any memory and without any ability to associate, compare, and manipulate information, the concept of mind is no longer conceivable. However, if the concept of mind can be broken down and reduced to the association of at least two things, then the mind can no longer be a primary thing, but its origin must be sought and explained. Multiple examples from biology and computer science now illustrate that memory and analytical ability are things that rely on material structures. Since both memory and intelligence can be explained using biological or artificial neural networks, the mind appears to us to be dependent on matter, and it is not a primary thing, pre-existing matter.

Spiritualism is widespread for other reasons, though none are convincing. Plato justifies his spiritualism by the link between the intelligence of the human mind and intelligible ideas, which he contrasts with the material, sensible, and unintelligible; an argument to which Democritus had in fact already responded in advance by affirming the total intelligibility of material reality ¹⁵⁸. In Descartes, spiritualism is

avored by the illusion that the *Cogito, ergo sum*, produces from seeing oneself at the center of the world after having doubted everything, and comes from the privilege of certainty granted to thought over the senses, whereas most of our errors come from a misinterpretation, by thought, of the correct data provided by our senses. Spiritualism is also greatly favored because it is the source of hopes for an afterlife, after death, encouraged by the accounts of phenomena sometimes experienced during near-death experiences. However, since similar phenomena can be artificially induced by electrical impulses in the brain or by certain drugs in fully alive subjects ¹⁵⁹, these post-traumatic hallucinations seem to be able to be explained naturally by neurophysiology and therefore do not constitute a convincing argument in favor of the immateriality of the soul.

Spiritualism finally comes from the vulgar pretension of having deduced the incapacity of matter to produce consciousness, while no one has ever been able to predict what a material body can actually do, explained Spinoza ¹⁶⁰. To assert that consciousness, that is to say something that is difficult to understand, requires an immaterial substance, amounts to hypothesizing something that can neither be observed, nor deduced, nor understood, nor known and, above all, which does not resolve any problem. Indeed, with this second mystery we do not explain the first any better. Those who are unable to understand the functioning of consciousness should stick to Socrates' motto: " **I know that I do not know** , " ¹⁶¹but in no case fall into the belief in spirits without bodies. A similar error once led to vitalism, the hypothesis of an unknown force in living beings, imagined by those who had too quickly concluded that biology could never be explained solely on the basis of physicochemical complexity. Advances in biochemistry and molecular biology have finally won out over the obscure, untraceable, and now useless vital force. Let's bet that advances in artificial intelligence will eventually overcome spiritualism.

The certainty of error is never absolute. If one wants to defend spiritualism at all costs, one can construct tortured speculations, add multiple arbitrary and unverifiable postulates, to mitigate all these aberrations. With a lot of imagination, this path, like any other, is not absolutely impracticable. Now, if I am asked which, materialism or spiritualism, is more credible, then I strongly affirm that it is madness to

privilege spiritualism, and to consider it as a serious alternative to the objectivism of scientific realism.

The Possession of the Ultimate Secret. While I am aware of the limitations and weaknesses due to the presuppositions necessarily included in my reasoning, and although I readily acknowledge that scientific realism is not certain, I affirm on the other hand that the various possible metaphysical positions are not equal. By virtue of its internal coherence and its compatibility with our best knowledge, the broad outlines of the vision of things that have been presented to you present a much higher degree of certainty than most of the alternatives. The general scheme that I have defended is therefore much more likely to have approached the truth than other systems. It is our best present truth. The wisest course is therefore to live with it.

Because of the many revolutions that knowledge has undergone over the centuries, the majority today believes that it is even wiser to suspend all judgment on notions such as the ultimate, the real, the truth.... As surprising as it may seem, the scientific rationalist that I am nevertheless responds, in large part, in the negative to this comfortable objection, and this is one of the reasons for the major place given to Democritus in this essay. Obviously, nowadays, science brings an understanding of nature that far exceeds any ideas that Democritus could have proposed in antiquity, and our world has been transformed far beyond anything that a brilliant visionary like him could have imagined. And yet, despite the differences that separate our two worlds, so different, the great ideas that Democritus brings to think about reality, life and death, remain just as relevant yesterday as today. They are just as effective for a man of antiquity as for us. More importantly, beyond the many errors and inadequacies present in the Democritean conception of the universe, the feeling of having glimpsed the essence of reality remains legitimate in retrospect. Even after more than two millennia disrupted by multiple scientific revolutions, Democritean rationalism has never been seriously called into question. On the contrary, during the three centuries following the Copernican revolution, the totality of scientific progress could hardly be interpreted other than as extraordinary confirmations of this conception of reality. And even if in the 20th century, the Big Bang theory and quantum physics did not achieve a clear

consensus as to their meaning, we will see that these ideas are not only compatible, but that they were already, in part, anticipated by ancient materialism. Also, this leads me to look at the history of thought, not as a journey towards a truth inaccessible to men, but as the possession of the ultimate secret since time immemorial, the human understanding of which can nevertheless still be greatly improved. I believe that throughout the centuries, certain minds have sketched out formulations of the ultimate truth, without ever managing to conceptualize it completely, nor of course to express it perfectly. By studying one of these attempts retrospectively, one will easily find many flaws linked to the author, and to the horizon imposed by the time in which the text was written. To appreciate such an undertaking, one must know how to neglect certain aspects, to find behind them what remains universal and timeless. This is my philosophical wager: to claim that more or less talented formulations of the ultimate truth exist, disseminated throughout the ages, and to affirm having recreated here a new one, which like its sisters, has the originality of having its own qualities and defects!

The Sovereign Good. Even if a greater doubt remained, I think I would still choose to bet on my ability to grasp the absolute during my lifetime, because to deny man this power is to deny him access to the sovereign good. Indeed, if the ultimate truth were inaccessible to us, it would not be legitimate for us to define our supreme good and then eventually try to attain it, and human existence would in fact be definitively absurd. We would then sink into a more or less pessimistic conception of life, the meaning of which could only be maintained artificially, at the cost of empty postures, abstruse discourses on the unspeakable or by referring this sovereign good to a vague notion in a netherworld. Without a philosophical absolute, all humanism is in fact reduced to moralism, or even to a simple literary attitude, without the power of truth. The quest of the ancient sages, that of a supreme and sovereign happiness accessible during this present life is a second criterion, in addition to the question of integral rationalism, which makes me, once again, condemn almost all the so-called “philosophers”, this time including the skeptics, for moral imposture, because they do not provide true remedies to the fundamental problems of existence. For Democritus and Epicurus, philosophy is the medicine of the soul that

cures it of its greatest troubles ¹⁶². Just as in the past the ranks of medicine were invaded by charlatans who knew how to cure nothing, the world of philosophy has not yet reached maturity. It is essentially formed of impostors who create illusions, and hide behind sophisticated conceptual artifices, their ignorance of the true path that leads the soul to the sovereign good.

True Philosophy. I belong to a school of thought that has claimed, for millennia, to be “ **true philosophy** ” ¹⁶³ in the face of a multitude of other schools that, in our opinion, usurp this ideal, as well as the noble title of philosopher. Literally, philosophy means the love of wisdom (philein=to love, sophia=wisdom which is itself happiness in truth). I therefore call true philosophy the love of truth that leads to the discovery of truths that one loves; in other words, the true lucidity that leads to true happiness. Indeed, a joy built on lies or illusions is not true wisdom. Conversely, clairvoyance that leads to despair is not wisdom either. True philosophy exists only when the true love of truth triumphs and confers in return, at the end of the study, the joy that is born of the truth. The wise man is one who possesses perfect peace of mind (ataraxia) without having renounced any truth. Truth includes both inner things (the impulses of one's heart) and outer things (the physical and historical reality of the world). One who renounces truth, who accepts the fables of religion, and abandons himself to beliefs in order to find serenity, is not a wise man. Conversely, one who coldly recognizes the harsh injustices of our mortal condition, but sinks into sadness, nihilism, or fatalism is not a wise man either. The wise man is one who, without having renounced in the least any of the terrible truths and questions that threaten our existence, has nevertheless succeeded, thanks to a deeper understanding of things and of himself, in attaining a higher joy of existence.

Because of its composite nature, philosophy is therefore divided into two stages. The first stage is that of increasing lucidity. The apprentice philosopher is characterized by a superior disposition to know the truth thanks to his sincerity, his intelligence, his knowledge, his intellectual and sentimental honesty. The second stage of philosophy is that of increasing serenity, where the cessation of the troubles of the soul occurs, then where a profound existential joy is born, even a supreme

metaphysical beatitude which has nothing to envy of that promised by religions ^[note 1].

The half-philosophers and the religious are false philosophers because they master at best only the first or a simulacrum of the second time, but have not been able to achieve the union of the two components of philosophy. From there comes the opposition between their Reason and their passions, unlike the wise men, such as Confucius or Spinoza who saw precisely in the completion of their philosophical effort the new capacity to make them coincide and function together ¹⁶⁴.

At first, philosophy requires pure love of truth, which endangers even the possible risk of discovering terrible truths and causing the death of a part of one's soul. The desire to defend certain convictions or simply wanting the world to have meaning is an initial bias that is not possible in philosophy. Anyone who wants to rise to true philosophy must wipe the slate clean of their prejudices and accept the possibility that the world may or may not have meaning, and then surrender to what appears most obvious, even if the answer terrifies them. But if the love of truth in their heart is weaker than the fears and prejudices that guide them and they lack the strength to take the risk of approaching the truth, whatever the price, then they will only seek to defend their prejudices and may be an ideologue, an intellectual, a theologian, even a skillful one, but not a philosopher.

Sub-Philosophy. Once childhood is over, most people no longer ask why. They have grown accustomed to the long silence of their ignorance. Religions offer false answers. A number of us have moved away from them without having replaced them with a solid alternative. Thus, yesterday we chose to believe in a good god because without it, life had no meaning and no longer seemed bearable. Now that religion has partly discredited itself, when we try to think, it is generally to sink into existentialist melancholy and to believe ourselves profound because we become aware of our unhappiness. In both cases, man is in the same situation of distress, in the same miserable relationship with existence. Likewise, relativistic atheists who claim that since the god of monotheism does not exist, “nothing is true, everything is permitted” ¹⁶⁵ show how much they actually agree with theologians in thinking that just, fair, and generous behavior is due to the arbitrary authority of

binding dogmas. Ultimately, the ancient Eastern sages, enlightened pagans, and rationalist pantheists, all of whom expressed existential joy and held high moral standards, without transcendence, were far more free from the primitive relationship with existence that persists among our modern skeptical atheists. These ancient sages claimed to have attained the highest good during their existence and show us historical examples of overcoming the moral and existential sub-philosophy shared by the spiritual-theological camp and the skeptical-relativist-nihilist camp, which are in fact only the two extreme and opposite faces of the primary human, isolated by his ignorance.

As always, these ignorant opponents of materialist philosophy never truly understood the implications of what they were fighting against; they only denounced their own fears and prejudices. As for those who, in the name of humanist values, claimed to want to save human dignity from the materialist abyss, they ultimately proved to be nothing more than enemies of their own cause. Not only did they fail to produce a convincing alternative, but by attacking materialism they foolishly weakened the only way to establish solid support for what they were truly seeking: individual freedom and a form of immortality, two elements firmly rooted in Democritean materialism. Indeed, we have seen that the most coherent idea of resurrection is a consequence of atomistic materialism, and we will soon explain in detail that it is also the Democritean physics of chance and necessity that guarantees the emergence of singular properties in essences, which then allows individual freedom to express itself through higher consciousness. Add to this the fact that the spirit of the Enlightenment, in its metaphysical, ethical, and political dimensions, was already present in Democritus, and you will perhaps understand why I pronounce such a terrible condemnation against the last 2,500 years of philosophy. Apart from the few who were able to side with Democritus, what has marked the history of philosophy in the world of men has been only the errors of fools, incapable of understanding, and then of loving, the real nature of things.

Scientific Designs

In this second commentary, I propose to review the main propositions of scientific interest contained in this essay in order to discuss them in a more critical manner, in the light of the borrowings made from well-established or developing theories. Numerous external references are cited in order to encourage the reader to delve deeper into the sources.

The Static Universe and the Dynamics of Universe-Bubbles.

If the universe consists of an infinity of worlds eternally destroyed and recreated, such that at any instant, all types of worlds exist an infinity of times at all stages of their evolution, then the universe as a whole is not evolving: it is static. If it is static, there is no longer any need for a first cause. The great-whole exists from all eternity, as a mathematical truth (block-universe). Democritus saw that within the static great-whole, no finite structure could maintain itself eternally, thus anticipating from antiquity that the earth, the sun, the stars and even the entire observable universe are not eternal, but that they have each experienced a birth and will undergo a death ¹⁶⁶. Democritus saw finite worlds/universes as linked within a flat and infinite space, however current cosmology invites us to consider the universe as an infinity of space-time bubbles which grow then retract, or dilute completely by their own expansion until a void appears from which new bubbles are reborn. Thus, instead of being a continuous block, in these models, the infinite universe appears as a great eternal whole, made up of an infinity of independent universe-bubbles which are each born during an independent Big Bang ¹⁶⁷. The existence of universe-bubbles is today suggested by various theoretical developments such as cosmological inflation, the cosmic landscape or even certain speculations on black holes which are all independent paths which lead to this notion ¹⁶⁸.

Our current understanding of the laws of physics allows for the appearance of universe-bubbles by fluctuation of the energy of the quantum vacuum. Since universe-bubbles contain as much positive energy in the form of matter as negative energy in the form of curvatures

of space-time, their free creation respects the law of conservation of energy ¹⁶⁹. This naturalistic ex nihilo creation differs notably from that of the theologians, which is based on a supernatural violation of the principle of Reason by the magical power of the good transcendent god ¹⁷⁰(the uncaused cause: the physical equivalent of $0=1$, which violates the conservation of energy); but it resembles, on the other hand, the coincidence of opposites promoted by Bruno or the balance of Taoist cosmogony, where the ultimate nothing (Wuji) separates into two complementary and opposite entities (Yin Yang) to give birth to the world (equivalent of $0=1-1$).

Remarkably, the physicist Alexander Vilenkin showed that the probability of emergence of bubble universes by tunneling is not zero if the initial size of space-time is reduced to zero, so that the emergence of all possible bubble universes becomes absolutely necessary if one takes as a starting point an absolute nothingness without space or time ¹⁷¹; a speculation that strongly contributed to my concept of non-nothingness. This result can be interpreted as a sign that physical reality has always existed, or that the various bubble universes all arise spontaneously from nothingness ¹⁷².

After all, our physical reality is not necessarily eternal. Our current understanding does not exclude the possibility that our universe could have emerged from a more fundamental level of reality. If our physical reality experienced a birth in the past, then before it no temporal event could exist. Only mathematical logic could operate freely. Mathematical logic becomes the foundation and creator of reality. It is a timeless nothingness that potentially contains the infinity of possible bubble-universes, and which are therefore inevitably all realized. Thus, instead of seeing the bubble-universes successively linked within an eternal universe containing them all, we can imagine that the bubble-universes emerge more or less directly from non-nothingness. But basically, whether all possible types of universe-bubbles are born instantly and constantly from non-nothingness with their own internal temporality, then return to it, or whether they are destroyed and reborn cyclically within an infinite space always containing them all, or whether pairs of mirror universes/anti-universes continually emerge from nothingness ¹⁷³and eternally expand, transforming non-nothingness into a superset already containing an infinite number of universes since

forever and constantly becoming larger; in all these cases, the cosmos returns to a kind of globally static grand-whole ¹⁷⁴, because it always contains, within itself, the totality of all realized possibilities.

The Multiverse. The study of the laws of physics in our universe suggests that these are far from having exhausted the entire range of possibilities offered by natural logic. The infinity of imaginable realities is certainly not realized even in the infinity of bubbles having the same physical laws as our universe. We can assume that as yet unknown logical constraints will reduce the diversity we imagine, however it seems unlikely that these will reduce it to our observable universe.

In addition to dividing the infinite universe into an infinity of space-time bubbles, some physicists invite us to go even further, by also adding parallel universes, that is to say, to evolve our old concept of infinite universe into multiverse. In antiquity, only Euclidean-type space with its three dimensions was conceived. Today, when we know new geometries, as well as spaces with more or less than our usual dimensions, the totality of the possible becomes a multiverse containing all imaginable space-times. Physicist Max Tegmark points out that this conception of reality has the advantage of dissolving the question of the specificity of the laws and constants of our universe due to the existence of all mathematically realizable structures across the whole ¹⁷⁵. If we are consistent with the idea that reality contains the totality of realized possibilities, then we must seriously consider this fantastic extension of reality. This implies an infinity of parallel universes (other equation-universes) so that the whole contains the totality of realized possibilities.

In antiquity, skeptics wrongly rejected the existence of Democritus's other worlds ¹⁷⁶. Similarly, empiricists today reject the idea of a multiverse, arguing that a single universe is, in their view, simpler than an infinity, and invoke Occam's Razor to eliminate this multitude of unobservable infinities. However, since the multiverse includes absolutely everything, it exhausts the set of possibilities, and contains no information. This proposition is therefore simpler in principle than asserting the existence of a single universe, endowed with multiple arbitrary and unjustifiable specificities. In the same way, that the existence of a multitude of planets in our galaxy provides a natural explanation for the particularities on Earth (temperature, luminosity,

chemical composition, etc.), the existence of multiple universes explains the specificities of our universe (physical constants, number of dimensions, etc.).

The Elusive Grand-All. Cantor's theorem is invoked by some of our opponents to assert that there cannot be a set of all sets and that therefore the grand-all is impossible; except that this theorem, valid in ZFC set theory for entirely artificial reasons related to its axiomatics, is no longer valid in better constructed versions of set theory which allow us to consider the set of all sets¹⁷⁷. Certainly, as for even an infinite set, one can always construct a larger set of sets, the possible remains untalizable. This inability to confine the grand-all in a closed set is an extraordinary property, but it is on the other hand a weak argument for asserting that nature cannot be the realization of this super-infinity of possibles. Thus, even if difficulties were to reappear in the manipulation and definition of the concept of the great-whole within formal systems, this would in no way prove that nature is not precisely this elusive infinity of infinities of infinities... of possibilities infinitely piled upon one another (a multi-multi-multi...multiverse ad infinitum), which no clear sequence can ever encompass, and of which only the super-infinite content of zero gives us an imaged representation. See indeed that in the mathematical cosmos, logic predicts that each of its tiniest parts contains again all the infinite richness of reality, renewed again and again. For example, the number $1=3-2=2y-z= \dots$. Thus, we can conceive of an inexhaustible myriad of universes replicated to infinity, in each of the tiniest particles of matter, and beyond. This suggests that reality contains the infinity of possibilities realized not only across each of the infinite spatial and temporal dimensions, but also at all scales of magnitude (fractal universe). The great infinite whole is "One", but this One is itself only an indivisible atom or a black hole in a higher-order universe (via a conformal transformation projecting this infinity onto a finite surface) and this is repeated at all scales towards the infinitely large as well as towards the infinitely small.

The Structure of Space-Time. If we inhabit a finite bubble-universe, then the problem arises of knowing what happens at the edge of the world. With the theory of general relativity, however, it becomes

conceivable that our bubble-universe has a finite size, without having a limit. A bit like on the surface of the Earth, by always moving in the same direction we end up going around and returning to the same point. In the same way, we can perhaps move infinitely in our bubble-universe without ever encountering a limit. Like a balloon that inflates or deflates, the bubble-universe can grow or shrink, while always having a finite size, but never any limits.

Unlike Kant, for whom space and time are only categories of the human mind, for Einstein space-time is an objective entity with “**physical qualities**”¹⁷⁸ including a degree of curvature, a resistance to deformation, a particular number of dimensions and perhaps also a minimal unit of distance and duration¹⁷⁹. In the latter case, everything would be composed of simple, indivisible elements, like Democritus' atoms. The existence of such a limit is suggested by quantum mechanics (Planck length and time: 10^{-35} meters, 10^{-44} seconds) and by other more hypothetical theoretical developments such as strings/branes¹⁸⁰, causal sets¹⁸¹ or even loop quantum gravity¹⁸².

Let us note, on this occasion, that the objects discovered by science in the 20th century and called atoms are not physical atoms, which therefore perhaps still remain to be discovered, but only chemical atoms, that is to say, chemical elements. The true counterparts of the physical atoms imagined by Democritus would rather be something like strings, loops, or something else measuring exactly the minimal distance in space-time.

The Mathematical Nature of Matter and Physical Reality. When Pythagoras returned from the Egyptian temples, he brought back a mathematical genesis of the universe which explained that we inhabit a gigantic mathematical world: “**from numbers came points, from points lines, from lines surfaces, from surfaces volumes, and from volumes all the physical bodies we know**”¹⁸³. The Greek atomist theory was then born as an extension of these ideas. In antiquity this lineage seemed obvious to Diogenes Laertius and Aristotle according to whom Democritus and Leucippus “**make numbers of all things**”¹⁸⁴. Democritus' atoms are in fact plane geometric figures defined only by mathematical properties (“**figure, order, position**” seen in statics and which Democritus describes using a musical lexicon “**rhythm, assembly,**

modality ”¹⁸⁵ for dynamic physical reality). However, the isolated atom is devoid of any sensitive character (temperature, color, smell, etc. ¹⁸⁶). Democritus' atoms are thus simply the infinite set of all imaginable geometric figures ¹⁸⁷. Instead of pushing the explanation of the complexity of the universe to an external order, the requirement of logical simplicity had, in his time, led Democritus to propose that the infinity of worlds was itself the complete realization of geometry.

Proposing that beneath the physical world we know, reality is in fact purely mathematical has many attractions. It resolves the dilemma between essence and existence, accounts for the extraordinary effectiveness of mathematics in physics, and finally, it offers a general explanation for the strangeness of quantum physics. Just as the biological world is a sophisticated island within a larger physicochemical reality, so our physical world would be a particular domain of a larger mathematical reality. And just as the constituents of living things revert to the inert entities of the physicochemical world when analyzed at the molecular scale, we find that the elementary (subatomic) particles of matter increasingly resemble mathematical objects when we analyze them at the very small scales of quantum physics. At its most fundamental level, then, the universe would be, in a sense, purely mathematical. The most elementary particles would be the equivalent of something like numbers, geometric figures, or something else conveying the notion of quantity. A physical principle like the principle of conservation of energy would simply be the counterpart of mathematical logic. As for the concept of limiting speed, the mysterious postulate of the theory of relativity, it is now understood to be a necessary mathematical property of space-time ¹⁸⁸.

Time. While the notions of quantity and space are common to physics and geometry, time seems to be the major notion that fundamentally distinguishes mathematics from physics. The main objection to the idea that reality is fundamentally mathematical lies in our habit of practicing mathematics with fixed objects, without temporality.

When Werner Heisenberg introduced the principle of indeterminacy in quantum physics, he had to resort to matrix calculus, which has the particularity of using non-commutative operations. Unlike

classical multiplication, which is commutative (3×7 and 7×3 give the same result), with matrix calculus, the order of operations cannot be exchanged. The order in which the calculation is carried out matters. It is not reversible, like time. There is thus a whole branch of mathematics where the non-interchangeability of operations generates a chronology giving a possible explanation to the notion of time in physics ¹⁸⁹. The existence of different possible orders gives rise to a new space of possibility, that is to say, an additional dimension, linked to the spatial dimensions, which we have called the "logical space dimension" or the temporal dimension. Thus, quantum indeterminacy could be the driving force of time and ultimately what founds physical Causality. Indeed, physical causality means that space-time has an oriented structure that allows us to distinguish cause from effect. But then, where does indeterminacy come from in physics?

The Origin of the Clinamen and Quantum Physics. Epicurus explained that atoms could spontaneously deviate from their trajectory according to a minimal declination occurring at undetermined times and places (the clinamen) ¹⁹⁰. This idea, certainly the strangest in Epicurean physics, presents a striking similarity with quantum physics and this is perhaps not just a coincidence. In both cases, the introduction of the concept of an indivisible minimum, whether the Democritean atom or Max Planck's quanta, each time led to the notion of indeterminacy in physics. Remarkably, this idea allowed Epicurus to explain the inhomogeneity of the universe ¹⁹¹, in the same way that today the quantum fluctuations resulting from the Big Bang explain the heterogeneity of our observable universe ¹⁹². But what could have led Epicurus to such a strange idea? Sources are lacking, but we can attempt to reconstruct the type of reasoning that may have led him to this concept. At his time, it was known that the diagonal of a square (the root of 2) could not be constructed with whole numbers, nor therefore with atomistic physics. It was necessary to round it off (upward or downward), but then the sides of the square were no longer perfectly straight, hence the idea that the movement was not in a straight line.

For Epicurus, not only matter but also motion, space, and time are made up of indivisibles ¹⁹³. To visualize the motion of an object at the atomic scale, let's imagine space as a grid. Atoms can only exist on

the intersections of the grid, but never between them. Now let's take a vertical segment three atoms long on this grid and rotate it slightly, leaving its upper end fixed. What do we see? Several problems arise.

As soon as the segment rotates slightly and its lower end makes a first line break, our segment is no longer a straight line but necessarily becomes a broken line on the grid. However, no logical information indicates precisely where and when the line break must occur. Indeed, a line being the shortest path between two points, on the grid there are now two atomic configurations to draw our broken segment. The position of the central atom is undetermined (superposition of states).

If we continue the rotational movement of our segment by making it make a complete turn, it appears to us sometimes as a perfectly straight line and sometimes as a broken line, depending on the initial orientation of the grid, but since this is only arbitrary for our representation, we must conclude that these two possibilities correspond to the same reality. Since in the atomic world, a straight line and a broken line are in fact the same thing, then the rectilinear movement contains an intrinsic indeterminacy that can make the atoms deviate from a line break randomly at any time. We find the clinamen of Epicurus, which was therefore probably inspired by a reflection on a problem of this kind.

Let's also note that after a first line break, we can normally no longer make the end of our segment perfectly coincide with a grid intersection without also modifying its length. Since a point can only exist on grid intersections and not between, the best compromise to represent the new end of the segment is to consider that it becomes a fuzzy point with only a diffuse probability of being on one side or the other (quantum fuzziness) or we must bend space to modify the lengths.

The multiple difficulties encountered during this attempt to visualize movement at the minimal scale probably explain the Epicurean school's distrust of Euclidean geometry, deemed unsuitable for accounting for atomic physics. However, our small, very simple example already suggests profound interrelationships between the physical concepts of quanta, indivisible, indeterminacy, time, movement, superposition of states, and curvature of space. In light of progress in mathematics and physics, we can now resume the Epicurean position by proposing that a quantified space contains indeterminacies and that from

then on, mathematics completely metamorphoses and evolves into a very particular mathematics: particle physics.

The Strangeness of Quantum Physics. The world we experience daily is not the basic level of all reality. Scientific exploration of lower levels challenges our usual senses. The physics of the infinitely small shocks us and seems strange because we seek to apply to it some of the usual concepts of our macroscopic world. However, for the materialist philosopher who does not believe that our usual physical concepts are fundamental, and who thinks that all aspects of our physical world emerge with complexity, it is not so surprising that some properties of our everyday world do not yet exist at a lower scale. For example, our common sense may have difficulty accepting the idea that an isolated material particle has no temperature, or that there is an absolute zero below which it cannot cool further, until we understand what temperature really is, namely a higher property resulting from the degree of agitation of the molecules among themselves, a concept which therefore has no meaning for an isolated particle and whose value cannot fall lower if the particles no longer vibrate (absolute zero: $-273.15\text{ }^{\circ}\text{C}$). Similarly, at a lower scale, matter does not yet obey the mechanistic Causality that makes billiard balls bounce, nor does it possess the usual properties of the visible world at our scale, but is governed by a more primitive form of Causality, closer to logic. Subatomic particles are not quite physical objects. They are likely rather intermediate entities between our macroscopic world and the fundamental level which is purely mathematical.

Among the most groundbreaking transformations brought about by quantum theory is the discovery of phenomena that appear to be truly random ¹⁹⁴, leaving chance a major role in the construction of reality. Does quantum chance usher in the twilight of universal Causality? On closer inspection, the indeterminism surrounding elementary particles is far from being irrational chaos. The equations of quantum physics remain partially deterministic. Their share of indeterminacy is statistically predictable and obeys very precise rules, perfectly described by the mathematical formalism of this theory. In light of this revolution, it appears that the concepts of universal Causality and omnipotent determinism, long confused, are possibly in fact two different notions.

Universal Causality does not necessarily imply all-powerful determinism. Everett's interpretation of multiple universes provides an example of the dissociation of the notions of Causality and determinism. Moreover, following the entanglement experiments violating Bell's theorem, admitting the existence of fundamental chance is now paradoxically necessary to safeguard the notion of physical Causality (relativistic Causality) ¹⁹⁵.

Unlike classical randomness, which is only an appearance linked to our inability to know all the exact conditions with sufficient precision to be able to make predictions (in a Laplacian universe) or to the hypothesis of hidden variables which would restore complete determinism, quantum randomness can be understood naturally as the resolution of an absolute indeterminism arising from fundamental properties in mathematical logic: logical independence ¹⁹⁶, incalculability, self-referencing/undecidability, Galois indistinguishability/ambiguity ¹⁹⁷. As suggested by attempts to reconstruct quantum theory from the limits of information ¹⁹⁸, logic itself sometimes appears incapable of completely defining all the properties of certain mathematical objects. If the necessity arising from logical simplicity sometimes leaves a certain vagueness, and physical reality is the realization of logic itself, then the indeterminacy inherent in the quantum world is naturally understood. Randomness would simply be the manifestation of a lack of logical information, which makes nature incapable of defining everything. But it is in no way the manifestation of an interrupted or transcendent Causality.

Quantum particles are born with logically undefined physical properties and remain in this fuzzy state (the superposition of states) as long as it does not pose a contradiction. The indeterminacy disappears only when the system to which they belong becomes sufficiently complex so that the parameters that remained free are forced to freeze in a defined state (decoherence). In the case of the EPR paradox, two entangled particles show the predicted correlations even when the exit from their indeterminate state occurs simultaneously after they are separated from each other, revealing that they are connected by an immediate link ¹⁹⁹. This link is in fact a logical link. Unlike a physical cause requiring direct contact between objects, a logical cause transcends all constraints of space and time and applies to every object throughout

the universe. Thus, the fact that at a more fundamental level, matter appears to obey not only an incomplete physical Causality²⁰⁰, but also an immediate logical Causality, captured by the mathematical formalism of quantum theory, is again an argument in favor of the mathematical origin of the physical world. Similarly, the existence of "ghost" particles, devoid of mass and energy, and manifesting themselves in the quantum vacuum at the border of physical reality also fits very well with the Pythagorean paradigm according to which matter is in fact more or less directly descended from numbers.

The concept of a primordial mathematical reality within which physical reality gradually emerges by construction and self-complexification thus seems to fit with the strangest quantum phenomena. This general idea is probably the conceptual key required to properly understand the world of the infinitely small.

Chance and the Whole. Even if absolute determinism does not exist in the relationship we have with our world, it seems that it must reappear at the higher level that constitutes the multiverse. Indeed, all the possibilities not realized here are realized elsewhere, and therefore chance necessarily disappears on the scale of the great whole. This observation has led some physicists to go so far as to declare that Einstein would probably have liked Hugh Everett's interpretation of multiple universes²⁰¹, where the universe cuts itself at each instant into several branches to realize all the different quantum possibilities. Indeed, Everett's conception leads to a realistic, objective and ultimately deterministic vision of physical reality on its largest scale. Everett's multiple universes produce a transcendence of the opposition between determinism and indeterminism (necessity and contingency), giving credence to these two conceptions, which become only two different points of view: chance really exists for the finite observer because he only perceives one branch of reality, but at the higher level, for the theorist who can see the tree of all destinies in its entirety, there is no chance. Everything is there.

Matter and Energy. Continuing the views of Plato and Aristotle on the supposed inability of matter alone to account for movement and life, a form of dualism persisted for a long time within Newtonian

physics itself, which described on the one hand an inert world of matter and on the other a world of force and energy, contrary to the vision of the ancient materialists and Spinoza for whom movement is inherent in matter; an intuition that was masterfully crowned by Einstein's equation $E=MC^2$, by showing that energy and matter are in fact two aspects of the same thing.

Matter and energy can transform into each other. Nuclear reactions release the tremendous amount of energy stored within matter, or conversely, particle accelerators create new material particles from the kinetic energy released during collisions. The Big Bang theory also proposes a genesis of matter and antimatter from vacuum energy; whereas in the Standard Model of particle physics, all elementary particles are in fact massless, and some particles acquire their mass only later, after coupling with the Higgs field. Thus, the notion of mass is no longer fundamental in physics, but is only an emergent higher property. These conceptual developments raise great hopes among our spiritualist adversaries. Does physics dematerialize particles and refute materialism?

First, let's clarify what we mean by mass and matter. Mass refers to the quantity in bodies that resists acceleration (inertia). However, particle physics has shown that matter is a broader concept than the notion of mass, because there are particles without mass; or if we want to call these particles of zero mass "energy", then we must admit that this same physics has discovered very "material" properties of energy! Indeed, a pure form of energy like light is composed of massless photons, and these particles push the objects they hit (the principle of the solar sail) and can almost bounce off each other (light-light scattering). Thus, if we understand by matter the idea that elementary particles interact to give all the higher physical properties of the objects of our world, including a notion like mass, thus perfectly illustrating the materialist paradigm which wants the simple to engender the complex, then matter is still there in physics, and after having triumphed in chemistry, a new atomism now also governs the world of forces and energy (quantum theory).

The Origin and Evolution of Life. Having unified inanimate matter with moving energy, we still need to unify matter-energy with life

and spirit to complete the materialist program. Since antiquity, the argument of antinaturalists has boiled down to the astonishment produced by their ignorance of the true causes of living processes. Now that genetics and structural biology have deciphered the components and mechanisms of life, they have ruined the idea that living matter requires vital forces totally different from the physicochemical principles that govern the rest of the material world. The final argument of our adversaries then consists of denouncing the self-arrangement of living organisms as being too improbable to have been realized. Not knowing the path by which chemical and then biological evolution took place, our adversaries indulge in dubious estimates, the aberrant smallness of which probably illustrates above all our ignorance of the true paths taken by nature; But in fact, Lucretius has long since put an end to this false debate by granting that the probability of the appearance of life and man is indeed infinitesimal in the universe. Yes, it was not a given that the life we know would appear on Earth, and even less that one day, living beings would become aware of their existence on its surface. The appalling stupidity of our adversaries is that they still have not integrated the concept of an infinite universe into their models, where everything that is possible is realized an infinite number of times, even the extremely unlikely.

The idea of the evolution of species is certainly very old. Anaximander already said that life appeared in water and that fish were our ancestors ²⁰², while Lucretius described a kind of process of natural selection ²⁰³. The summary I have proposed is based on the modern version of Charles Darwin's theory, updated by Richard Dawkins ²⁰⁴, who insists on the central concept of the replicator, initially proposed when the double helix structure of DNA was discovered ²⁰⁵.

Today, most of the intermediate steps taken by evolution have disappeared. Faced with the perfection of interconnected systems, human ignorance believes it perceives the mark of a great watchmaker. It begins to believe in a mystery upstream, when the solutions lie downstream. It wonders which came first, the chicken or the egg. How could the male or the female have been created, since they need each other to exist? But sometimes, evolution has left enough clues for us to retrace its path, and see that the apparent irreducible complexity was only an illusion.

Similarly, people often struggle to understand why the selfishness of natural selection has not only created aggressive, prehistoric monsters with enormous claws and fangs, and see in the triumph of altruism and harmony the sign of a supernatural order. In truth, since the peaceful coexistence of species is much more profitable than preventive and systematic destruction, in many conditions, symbiosis spontaneously imposes itself because it is simply the best system that can exist. Harmony and altruism are not supernatural orders opposed to selfishness. Altruism is simply more intelligent selfishness. With the emergence of social species, nature is softening. Species have absolutely not renounced their interests, only they often obtain much better results through mutual aid and coexistence than with brutal and primary selfishness ²⁰⁶.

Intelligence and Consciousness. Neural selection mechanisms (neural Darwinism) help solve the mystery of how animal intelligence works, at least in principle ²⁰⁷. This conclusion is reinforced by various computer simulations (neural networks and other artificial intelligence systems) capable of learning to perform very complex operations on the same principles.

So the mystery of consciousness remains to be unraveled. Of the many hypotheses attempting to understand what actually makes such a faculty possible, Gerald Edelman's proposals seem to me to be the most profound ²⁰⁸. I am fascinated by his ideas, and I drew heavily on them for the first part, where I defined primary consciousness as the conceptualized and remembered present, and secondary consciousness as the sense of self.

The Definition of the Self. In ancient Egyptian beliefs, a deceased person who awoke in the realm of the dead absolutely had to remember his name in order to survive in that other world. If he forgot who he was, he became an empty soul and disappeared forever. A somewhat similar line of reasoning leads me to identify the self with the "feeling of self." Armed with this definition, the term "I" is the impression that forms the backdrop to the awareness of being conscious. The awareness of being conscious gives rise to a reminiscence constantly recalled during waking, which differs according to the individual and is

the basis of each character. The self is the original feeling of self, which is then enriched by significant autobiographical events. The idea-feeling of self is therefore produced by the awareness of existing and remains in the brain as long as certain cerebral structures have not been altered.

The sense of self and its associated psychology is a subject with blurred contours, and it is not easy to give a precise definition in words. This type of difficulty is used by some to doubt the reality of the self, although they do note the existence of varied characters and personalities depending on the individual. Note that the difficulty of an exact definition arises for many other common concepts, such as colors. Within a color gradient, it is difficult to agree on exactly where red begins and ends. Moreover, the notion of red comes from our sensibility. It is an empirical concept that is not immediately intelligible to us. Indeed, although we can use this concept in practice, it is still impossible for you to communicate the idea of "red" to someone born blind with words alone, illustrating the limits of our language. However, thanks to physics, it has now become possible to understand the essence of red and to make this concept intelligible, via the notion of wavelength of light, and therefore one day, using medical imaging it will surely be possible to take an image of the self and define it in terms of brain architecture and neuronal activity. Thanks to current tools, we already know that the memory of the self is different from the memory of other events and that it involves specific regions of the human brain²⁰⁹ which are also regions associated with character disorders if they are damaged.

Stability and Evolution of the Self. At each stage of life, the brain creates a new autobiographical image of the self that evolves over time. This autobiographical image of the self does not require access to past memories to function, since an accident causing a complete loss of episodic memory is rarely followed by identity amnesia. In most cases where access to past events has been lost, the individual still feels who they are and can cite their personality traits²¹⁰. The autobiographical self is therefore a secondary and evolving construct compared to the core sense of self, which is deeper and therefore generally more stable²¹¹.

Thus, although a change in temperament or the acquisition of maturity with age are sometimes interpreted as a sign of a transformation of the self, the observation of such evolutions is not sufficient to

conclude that a stable essence exists at the heart of the individual. Indeed, the definition of the triangle shows us a perfectly clear essence, which does not prevent the triangle from existing in an infinite number of ways . A triangle can be any shape, elongated, right-angled, isosceles, equilateral... but it always remains a triangle with triangle properties, very different from the properties of a rectangle or a pentagon. Thus, throughout life, the self can very well be linked to various elements (social status, religion, loves, political ideas...), which modify its appearance according to events and encounters that have led it to develop in this or that direction, without necessarily having changed its original essence. Despite the continual reworking of psychological states and matter in our brain, the rigidity of the first validated neural networks and other empirical observations suggest that the core of the self generally remains stable after being fixed very early in childhood ²¹²; but even if I were wrong on this point, I point out that the question of the stability of the self is not a major issue for my philosophical doctrine which invites us to live in the present moment, and in any case defends a transversal definition of the self, existing through different bodies, at different times.

The Multiplicity of Existence. The definition of the self I have arrived at does not make this notion dependent on a particular body, which necessarily leads me to a transcorporeal definition of identity. This idea is very old. In a spiritualist version, it is found at the heart of Hinduism, but it also existed in a more materialist form in the religion of ancient Rome ²¹³. This consequence of Democritean physics is, however, one of the most difficult to accept. Uncomfortable with this idea, it is common to refuse to identify bodies with identical neurological constitution as being self, and to dismiss them as other. The argument generally invoked is to want to define the self in relation to the present life, and not in relation to other entities elsewhere, however similar they may be. Against the multiplicity of existence, we can try to oppose a definition of the self where this concept is intrinsically associated with a linear autobiography, in other words, where life is the construction of a singular existential journey in which other stories do not intervene.

I suggest using Everett's parallel universes, at least as a thought experiment, to show you the difficulties posed by such an attempt to reduce identity to the sole self perceptible by the senses. Let us therefore

admit that the current space-time is fragmented at every moment to realize all possible destinies. Sometimes, a story splits into two very different paths that can justify the existence of distinct people. Certain life choices are linked to our deepest nature, and we can legitimately refuse to recognize ourselves in a being who would have made a different choice. However, there are choices that are mine in this world, and which have not been realized because of external circumstances. How can I deny my avatar who would see them materialize? Finally, what status can I give to the quasi-identical clones of myself that are created at every moment in parallel universes? In the majority of cases, it is only possible to differentiate these beings on the basis of microscopic facts or minor events, which play no role in life. The crease of a hair, a glass placed on a table, the color of a car passing in the distance... a thousand insignificant details separate the existence of a multitude of beings that are otherwise identical in every way. There is no convincing criterion to differentiate these beings, which until the previous moment were one. There is no element on which to rely to give each of them a proper identity. The only coherent way of seeing is to recognize that the finitude of existence is an illusion caused by our limited senses, and that we must identify a single, global self, existing in multiple forms. Depending on the definition of the self that one has chosen, even if one has wanted to include physical appearance or autobiographical elements, one will limit the extent of one's being, but even in these cases, there will always remain a multiplicity of the self. Consequently, if space is filled with an infinity of worlds, or if there are an infinity of other parallel universes, or if in some other way you are led to conclude that reality contains the totality of possibilities, then we must admit an infinite self across space/spaces, in addition to the self traversing time that you already know. There is no reason to deny a spatially distant body the identification already granted to temporally separated bodies. On closer inspection, spatial identification is even more convincing because we may have changed a lot over the years, whereas across infinite space we are certain that somewhere there exists another body exactly endowed with its current essence. What makes you yourself is your feeling of existing, and this presence in the world being the same here or elsewhere, you do not make the difference.

As a complement or alternative to this understanding, we can also

represent the cosmic self via the notion of genius/daímōn from ancient paganism. To every existing thing, to every material being, one can associate the idea of this being. If here every finite, concrete being is mortal, the idea of this being is eternal. The idea of the thing is the idealized thing, timeless, immutable, without its circumstantial disturbances. It is represented in statue by a double of oneself in winged form: the Genius, its supporting voice, that is to say the inner god only accessible by the level three consciousness ²¹⁴.

The Place of the Self in the Functioning of the Mind. In addition to defining the sense of self as the core of what constitutes our identity, I have also considered that this “feeling” plays an essential role in the functioning of the mind; a conception shared by several psychiatrists and neurologists who have come to the conviction that having a sense of self is essential to the formation of higher feelings and evolved memories ²¹⁵. In the small model of the functioning of the mind quickly sketched for the purposes of my doctrine, the “feeling” of self is the prism through which ideas are formed in the higher consciousness of Homo sapiens. Also, the individual peculiarities of this “feeling” would constitute the bases of each personality because they would constantly affect the formation of thoughts during the functioning of consciousness, and would also transform, directly or indirectly, many unconscious processes. Thanks to this functioning of the mind, the initially fixed essence of the individual, determined by the form of the feeling of existing, is transformed, during the unfolding of consciousness, into a living essence manifesting itself through intimate desires. The more the mind develops, the less the “feeling” of self is isolated from unconscious or semi-conscious emotions. By associating itself with them, the feeling of self brings them into higher consciousness, hence the relevance of basing my moral philosophy on the blossoming of this “feeling”.

If this is indeed how the mind works, one would expect consciousness to regress to an almost animal level in the event of a momentary disturbance in the "sense of self," and this is apparently what happens in patients with dissociative disorders. For example, an individual suffering from depersonalization sometimes experiences a temporary reduction in his or her capacity to experience and recognize himself or herself. During such moments, facial expressiveness

diminishes, his or her attention dissipates, he or she sees himself or herself as an empty, soulless body; he or she ceases to form advanced feelings and precise memories, and is no longer able to intelligently organize his or her life.

The theory of the self proposed here is also compatible with the existence of dissociative identity disorder, where severe trauma before the age of one causes traumatic amnesia, a fracture in the genesis of the unity of the self, and multiple personalities that coexist, manifesting themselves alternately ²¹⁶. If the interpretation of clinical observations, which suggests that from an altered sense of self can arise several individuals coexisting in the same body, each with their own character and a partially independent memory, were one day confirmed, it would constitute a strong argument in favor of models that make the sense of self the driving force of the mind structuring the formation of feelings, decisions, and memories. Thus, although our understanding of the functioning of the mind is still rudimentary, and prevents any firm conclusions, several observations have reinforced my idea of defining the self, at least as a first approximation, as this latent presence in consciousness, and they also encourage me to establish it as the structure at the base of personality. In the future, advances in neuroscience will allow this model to be refined.

Let us note, however, that even if the study of the brain were to one day demonstrate that most human feelings are not organized around a sense of self, and that this type of psychological construction only concerns a limited number of feelings in a few exceptional individuals, I would not see this as an objection to the value judgments that the present philosophy invites us to make. It would only appear that human power is extremely limited, but this would in no way prevent me from continuing to think that the more a mind succeeds in organizing intimate desires, the more it belongs to a free and superior nature compared to beings who spend their existence replicating group emotions. Such a judgment follows from my system of nature as clearly as it is evident that living matter is of a higher degree of organization than inanimate matter.

Determinism and Freedom

In this third commentary, I explain the mechanism that allows authentic individual freedom to exist. The theory proposed here is not based on quantum indeterminacy. It therefore works even in a universe where strict physical (Laplacian) determinism reigns everywhere. I then address the related questions of moral judgment and the origin of values.

The Analogy of the Stone in the River. Let's begin with a short dialogue between a philosopher and his student during an imaginary walk:

- Student: Your conception of universal Causality implies a determinism that I find in contradiction with your humanist morality. Determinism makes human freedom impossible, but humanism has no meaning without it. For freedom to exist, the soul would have to be an immaterial entity, so as not to be subject to physical Causality, and it would also have to be the origin of its own movement, that is, be an uncaused first cause capable of initiating its own causal series.

- The Philosopher: There is no need to resort to these irrational spiritualist lucubrations to establish freedom. Let's go for a walk near the river. It will serve as an analogy to better visualize the solution to your problem... Do you see the stream flowing continuously? This movement represents the course of events. Now, look at those rocks over there.

- The narrator: Heavily eroded rocks of various shapes are scattered along the river.

- The Philosopher: You see, these rocks represent the souls of ordinary men. Continuous erosion has given each rock a particular shape. Do these eroded stones have an impact on the movement of water?

- Student: Almost not.

- The philosopher: Certainly. Let's keep moving forward.

- The narrator: Continuing to walk, our two walkers arrive at a place from which an imposing rock emerges in the river bed.

- The philosopher: Do you see this rock?

- The narrator: Unlike the stones below, the rock has resisted erosion and is significantly disrupting the flow of the water. All around it, the waters are continually agitated. Local turbulence forms, which

evolves into smaller eddies that can be seen extending for dozens of meters downstream.

- The philosopher: Who intrinsically possesses movement? This stone or the river?

- The student: the river.

- The philosopher: Indeed, the stone is perfectly still and yet who imposes his law on the movement of the water in this place?

- The student: The stone disturbs the flow of the water.

- The philosopher: So what is the property that allows us to act freely? Do you still believe it's movement, or is it something else?

- Student: Resistance to flow!

- The philosopher: Yes, the hardness of the soul. As opposed to the false sense of freedom that comes only from ignorance of the external causes that agitate us, “**the true freedom of man relates to the strength of soul**,”²¹⁷ explained Spinoza. The analogy of the stone in the river shows that the capacity of a thing to be the free actor of events, in other words its capacity to constrain the bodies around it, without itself being constrained by them, does not require, in the first place, an intrinsic faculty of movement, but depends first of all on the rigidity of its internal constitution. The freedom of a thing can come from its sole capacity to resist and oppose that which seeks to conform it to the general movement. Here, the shape and hardness of the stone impose a particular movement on the water molecules that bounce off it without itself having any capacity to move. So you can now begin to glimpse how freedom is possible, even in a physical universe where the soul is material. In your brain, your sense of self must affect other emotions, choices, desires without itself being transformed by these affects with which it continually interacts. It must be harder than them. You who aspire to philosophy, tell me: from what material do you believe your soul is carved? From a soft paste like the eroded stones below or from an imperishable substance like this thousand-year-old rock?

- Student: Your explanation doesn't work! The hardness and shape of this rock are entirely due to the physical causes that created it. Every physical body always remains determined by prior causes. It therefore never has any free will.

- The Philosopher: We have taken the first step towards the solution, but I grant you that this little analogy is indeed insufficient to

understand the compatibility of determinism and freedom. To answer this question satisfactorily, we will have to clarify other erroneous preconceptions surrounding this problem and finally I could give you a glimpse of the mechanism that allows true freedom to exist in the soul of the wise man.

The Essential Concept of Material Soul. Opponents of the materialist conception of the mind too often omit the concept of “**material soul** , ” ²¹⁸ which was dear to the first materialists and on which Epicurus based “ **causal responsibility in ourselves, independent of the specificities of our species or of the elements of our environment that surround us and penetrate us .** ” ²¹⁹ For us, the soul exists and directs the body, although the soul is also a body. It is a stable physical structure that is not continually remodeled by external movements, but which specifically selects and retains certain elements of the flow that passes through it ²²⁰. My identity exists thanks to a particular material configuration whose stability is guaranteed both by the long lifespan of neurons and by the durability of validated connections. The structure that defines me, in other words my essence, is not continually altered by molecular shocks but only placed in various conditions of existence by the external world. Once the sense of self is established in the brain, during childhood, its individual characteristics are therefore immune to the mechanical Causality resulting from the movement of atoms, because its specificity lies in the relationships that constitute it and which remain fixed in neuronal memory. It is true that when certain groups of atoms constituting my material soul are displaced, I will disappear here. It is possible to destroy me, but see that it is not possible to denature me in what I am. An essence is always itself with its internal properties. Note the parallel with the morality of the wise man. The materialization of an essence can momentarily disappear, but it cannot be violated or changed in its deepest form. It has something indestructible about it.

Singular Essence and Causal Chain. Spinoza explained that there are two possible points of view: the global point of view, which sees man as a part of nature, and the finite point of view, in which the great whole is subdivided into an infinity of singular things, each possessing its own qualities. While both points of view are valid, to

understand true freedom, Spinoza deemed it necessary to adopt the point of view of singular things²²¹.

One of the common errors of those who deny freedom in the name of omnipresent physical determinism comes from their forgetting the essence of singular things (essence = the internal properties of the thing that define it), under the pretext that there is an upstream causal chain that first led to the creation of this thing. For these anti-humanist determinists, only the causal chain matters; it is the only true reality, and according to them any singular value given to the final product is only an illusion. Let us see that in reality, it is quite the opposite! Since there are different causal sequences that lead to the constitution of the same object, the causal chain is in reality less important than the internal properties of the final product, which is what really matters. For example, in chemistry, there are different synthetic routes to arrive at the same molecule. There are therefore many different causal sequences that lead to the same molecular structure; but what matters and then defines the molecule's ability to act (to cure if it is a drug) is its own structure, its essence, not the synthesis route that was used. The synthesis route will eventually change depending on the laboratory. The essential thing is therefore above all the essence of the singular thing. Ultimately, its manufacturing process is a detail that can sometimes be neglected! Therefore, the humanist vision centered on the essence of the finished product is more accurate than the globalizing anti-humanist vision whose inadequacies cannot be used to deny or neglect the essence of singular things.

Because there can be very different causal sequences that result in the creation of absolutely identical bodies, the essence of things lies in the structure of things (in the final products), and not in a particular historical causal series that allowed the materialization of this or that thing in a particular world. The emergent and higher properties of physical bodies are irreducible to their essence and are not in the sequence of causes that generated them. Thus, Spinoza warned that the study of the succession of causes does not allow one to reach “**the inner essence of things**.”²²² and that consequently, we must “**value things according to their quality, not according to the agent who produces them**”²²³.

Free or Constrained Essences? In a strictly deterministic universe, physical bodies have all been entirely determined to be what they are by the chain of causes that preceded their formation. The ability of a stone or a material soul to resist the causes that attempt to crush them depends in fact entirely on the prior physical causes that engendered their internal constitution. Does this prior determinism not, despite everything, necessarily hide a program that controls the final product like a puppet, which in fact never has any freedom? To resolve this difficulty, we must distinguish two types of objects: those whose essence is constrained and those whose essence is free.

Objects whose essence is constrained are bodies that have been entirely determined to exist by a program or will. This is the case, for example, with automatons, robots, and puppets. These objects are entirely programmed to be what they are and have no independent existence. They are, in fact, an emanation of the entity that generated them, which is the true element to be considered, because it is from it that all the meaning of their actions comes.

In contrast, objects whose essence is free are bodies that appeared spontaneously from disorganized atoms that swirled around without conveying any particular meaning. This is, for example, the case of a stone or a cloud. These structures that appeared spontaneously from disorganized atoms have a singular essence. Only bodies that appeared without having been predefined by an external structure and emerged from an encounter between disordered atoms have a meaning of their own that belongs entirely to them and can only then potentially act freely according to their ability to interact meaningfully with their environment.

Even if physical determinism is absolute for the destiny of each atom, chance manifests itself in the constitution of natural things. Indeed, for Democritus, the disordered agitation of atoms in the infinite void produces the infinity of worlds. Thus, everything necessarily appears due to the exhaustion of all the possibilities realized throughout the infinite universe, without necessarily a predetermining process upstream. For Cournot, chance is also explained by the fortuitous encounter of independent causal sequences. If we are indeed in a Democritean cosmos, without an intentional divinity controlling destiny, then the atoms that gathered to form the stones carried no meaning programmed by a prior structure. Matter is therefore not a determining cause of the

essence of a stone but only the support for the existence of this essence. The series of causes that preceded the formation of this type of object does not constitute an overdetermination that programs their essences, but a simple equivalence, that is to say, a sort of hidden pre-existence in matter. We see that all the things currently present in our world actually already existed potentially in the distant past of the universe, through the scattered atoms that would one day be brought together to constitute them. All things have always existed potentially within infinite matter, which in this global vision becomes comparable to a neutral substance containing all dormant essences, which awaken punctually in certain places and at certain ages, when circumstances allow their materialization.

In conclusion, the existence of a deterministic, universal physical Causality prior to the formation of natural bodies does not generally abolish the singularity of their singular essence. What about the material soul of human beings? Is its essence free like a stone or is it programmed like a puppet?

Biological Individualism. The debate between nature and nurture generally overlooks a third essential actor: material chance, as conceived by Democritus ²²⁴. Indeed, within a living being, certain groups of organized atoms carry genetic information (the innate: the memory of the species) or environmental information (the acquired: the memory of individual experience obtained via the senses), however a large number of disordered atoms do not carry this kind of constraints conferring on each individual a singularity of its own (deterministic chaos).

At physiological temperature, water molecules have a kinetic energy that causes them to collide within themselves and impart a random (Brownian) motion to biological macromolecules. All the most fundamental biological molecules of life are thus constantly shaken within this molecular storm that alters the singular state of each biological macromolecule. This agitation is ultimately at the origin of the conformational dynamics and heterogeneity of the folding of RNAs and proteins ²²⁵, of the dissimilarities in their post-transcriptional and post-translational modifications, as well as of somatic mutations of DNA, epigenetic variations or even the activation of transposons ²²⁶.

This random variability present at the molecular level is then found at the cellular level ²²⁷, and influences the final development of tissues and organs. It is particularly evident in the immune system, when it produces antibodies against a pathogen. Indeed, even among genetically identical animals living in the same environment, each individual produces antibodies that differ in their sequence, their therapeutic capacity, their affinity and agonist/antagonist effects on their target ²²⁸. Similarly, even memory, which could appear as one of the best examples of a determined object, is not completely so in detail, because of the process of memory manufacturing which makes the idea of the same object different depending on the individual ²²⁹. This individual biological variability therefore requires us to consider almost every living being as a unique case, even sometimes for aspects strongly constrained by genetics or the environment. This conclusion is regularly highlighted during the study of clones raised in an identical environment, where it is found that each living being possesses, despite everything, an individual singularity in the tests carried out ²³⁰. In all living beings, the combined influence of genetics and the controllable environment does not contain sufficient information to determine the final form of all details of the body and behavior. For example, the fingerprints of identical twins differ sufficiently to make each individual easily identifiable ²³¹. Wherever the combination of genetic determinism and information gathered by the senses is insufficient to impose a complete organizational pattern, atomic, molecular, cellular disorder fills the void and produces random effects.

Is the Sense of Self a Free Object? In search of an explanation for one's personality, it is common to want to satisfy one's desire for Causality, and to invoke explanations such as family, social environment... and to fabricate retrospective illusions from elements that have certainly had an influence, but which probably do not have the power to determine the heart of our being. Indeed, children from the same environment, and having received a similar education, often present very different characters, which betrays the element of randomness that takes place during our development.

The study of twins suggests that genetics is generally more important than the family-educational environment in the constitution of

personality, however these two factors combined seem to explain only about half of the specificity observed in each individual ²³², which suggests the existence of at least a third essential factor: molecular chance.

Humans are distinguished from other animals by their great immaturity at birth and during their early childhood years, which allows us to acquire greater perfectibility secondarily. If the broad outlines of our anatomy are defined by our genetics, the majority of neurons in a baby's brain form the first networks without precise instruction. Similar to segments moving in a disorganized way, and eventually meeting to draw multiple figures with varied geometric properties, the properties of these first structures are totally emergent and could not be fixed by the information contained in other neural maps, as will be the case later, when the connections and exchanges between neural networks have developed sufficiently for these maps to be shaped by significant information received by the senses. Much later, when the human brain reaches a sufficient level of intelligibility between the different concepts elaborated by memory, the idea-feeling of self appears. This feeling is likely organized from various data not yet linked together in a completely coherent manner. It is constituted from a flow of underlying pre-psychological emotions coming from the body (intestinal sensations, perceptions of the hands, etc.), which are assembled into a whole capable of interacting logically with other concepts in the understanding. Given the likely complexity of the feeling of self and the intrinsic variability of synaptic pruning ²³³, the definitive particularities of this feeling necessarily emerge under the significant influence of the biological variability of the individual.

If the sense of self is indeed an emergent property produced by the logical and semantic capacities of Homo sapiens, there has never existed anywhere before any program to define it in advance. Before the appearance of the sense of self, there was in nature no structure or combination of structures, already containing the intelligible information to give it its meaning. Before the formation of this feeling, the pre-psychological elements that would constitute it did not contain the information to define its meaning. For causes to influence a psychology in a significant and organized way, and not only by simple chance encounter, the brain must itself have already developed sufficient

capacities for intelligibility; in the same way that the words of a stranger can at best arouse primary emotions, often erroneous, but cannot reach your thoughts when you do not understand their language. So, even if sophisticated social structures surround and affect the body of the mind in formation, before the constitution of the understanding, these causes produce at best vague effects whose meaning is attenuated or completely distorted.

There cannot be a fully determining causal effect between values hierarchically arranged on different levels, but only a non-significant Causality resembling a chance encounter, having only brought together the conditions of possibility necessary for the emergence of higher values. This materialist principle is in fact re-actualized during the transition of any scale: atomic/molecular, chemical/biological, cellular/tissue, reflexes/primary emotions, unintelligible memory/clear concepts ordered by the understanding. At each stage, it is only after the random encounter between atoms, molecules, neurons, emotions, concepts... that a new structure appears with emergent properties that have meaning only at its level and therefore only in itself. In conclusion, the genesis, here assumed, of the feeling of self from scattered pre-psychological emotions, presents a similarity with the spontaneous appearance of a material body, formed by atoms which swirled in a disorderly manner, and which aggregated at random. The feeling of self thus constituted would therefore respond well to the definition of an object whose essence is free.

The Essence of the Soul and the Meaning of Existence. The profound meaning of things whose essence is free is not to be sought in the physical causes that produced them but in their essence, that is to say in their singular internal properties. Beyond the influence of inherited instincts and acquired memories, the intimate essence of the individual is formed by chance. The meaning of life is therefore not given by the external world, nor even by philosophy, but is something that is experienced only in oneself. The meaning of life is a property internal to the feeling of self that varies according to individuals. Nature does not give meaning to human existence, but only produces various feelings of existing that contain within themselves the meaning that each person, according to their character, will feel about life.

Reason and Freedom. Recognizing the existence of a unique singularity in the material soul of each individual, guaranteed by biological materialism, constitutes the necessary prerequisite for understanding the functioning of true freedom. For the individual to now become effectively free, a mechanism must make possible the passage into meaningful acts of the singularity contained within him. Without such a power, his internal properties would remain fixed.

In the little opening analogy, I went so far as to consider that a stone was “free” to impose its “will” on the watercourse, however a stone is obviously not free. In order to ensure a good understanding, it seems important to me to emphasize that the great limitation of this analogy lies in the fact that the blind mechanical Causality of the stone on the water is not a meaningful psychological Causality. Thus, in a brain lacking the ability to logically elaborate and associate concepts, the animal emotion of the self will remain isolated or produce only insignificant effects. Similarly to the shape of the stone, the influences of such subjectivity convey little or no meaning, and are not strictly speaking the expression of authentic freedom. It is only thanks to the understanding, in other words, thanks to the rational faculties of the mind, that the feeling of self has become an elaborated idea, capable of interacting significantly with the conditions offered by the body, in this historical situation, and of generating intimate reasons, that is to say feelings, choices, and personal actions possibly increasing in return the feeling of existence. It is thanks to human understanding that the feeling of self has become an idea capable of modulating other ideas.

In the humanist tradition (Protagoras, Pico della Mirandola, Erasmus, Rousseau, etc.), only man enjoys freedom, unlike the animal, which remains determined by nature; but here we see that the major difference that gives man his freedom does not only come from a more pronounced biological indeterminism, but above all from the possession of Reason. To date, the human mind is the only known entity capable of truly transforming its individual singularity into significant causes, which want to be engraved in reality. The logical capacity to associate the idea-feeling of self with other ideas and feelings is the faculty that allows the mind to produce intimate reasons and to personally influence the order of the world. Without understanding, human freedom would

therefore not exist, because the feeling of self could not be structured, manifested, and expressed significantly in acts. Thus, even if there is a proto-self and a pre-psychology in certain mammals, freedom is only truly manifest in beings endowed with Reason. Against the impression that Reason would be a constraint opposing our freedom, we see here that Reason is on the contrary the faculty which allows us to bring to life the potential of freedom contained in consciousness. Human Reason (the faculty of intelligibility of the mind) is intrinsically linked to intimate Reason (the experienced sense of existence in the soul), because it is its organizing principle ²³⁴.

The Mechanism of Human Freedom. In our model of the mind, the idea-feeling of self constantly mixes with emotions, calculations, and inclinations during the functioning of consciousness, and transforms part of them into intimate desires. The individual peculiarities of the feeling of existing are thus at the origin of free desires, bringing to life the essence of the individual. Unlike instincts predefined by genes or by social conditioning, intimate desires are free causes, because they come from the internal necessity of the feeling of self, and are that freedom whose presence at least some men experience in their consciousness. The feeling of self containing a uniqueness appeared by chance, the mind is not programmed by an external Causality, like a puppet, but the feeling of existing is the definitive source of intimate psychological Causality.

Although the human soul is totally immersed in Universal Causality, for Spinoza it is nonetheless governed by the “ **laws of its nature** ” ²³⁵. Therefore, it should not be seen as a passive object, totally controlled by external causes, but as a thing that “ **acts** ” when it has “ **adequate ideas** ”, that is, coherent ideas that are self-explanatory and that express “ **the essence of this soul** ” ²³⁶. For us, to be free is simply to act according to one’s nature. When the ideas that come to a mind are in phase with its essence, the subject can be said to be free. In this particular configuration, there is a superposition of Personal Causality with Universal Causality (the underlying Physical Causality), in other words, a compatibility of physical determinism and individual freedom.

At the neurobiological level, acquiring this disposition implies that the individual's freedom manifests itself after the information contained in the neural map of the sense of self has imposed, through

cycles of successive selections, its mark on the maps coding for other feelings. During the awareness of the present, the sense of self is struck by the negative ideas that cross it, which arouses in it a desire to resist, or on the contrary, it approves other ideas and facilitates their development. The stronger and more structured the sense of self, the more it can establish this instance of internal deliberation that suspends judgments while waiting for the flow of selection of connections to fall on a solution that is in accord with its essence.

Freedom exists only by degree. The degree of freedom stems from the relationship between the strength of the neural map of the sense of self and the other neural maps coding for the elements of the environment permanently conceptualized in consciousness and which interact dynamically with the sense of self in decision-making. In moments when the sense of self is very dominant, the being is very free, while when he does not reflect and submits to authority out of stupidity, convenience, conformity, cowardice... then he is alienated. The degree of freedom is thus a dynamic relationship of strength between the neural maps associated with the sense of self and the other maps, under the influence of external elements, which limit or constrain the effect of the self. So see why self-love reinforces and manifests the existence of freedom. In its maximum version, this psychological state would correspond to the situation where the map of the sense of self would completely dominate its environment, and where the individual would truly be psychologically all-powerful. The sage represents the idealized case of consciousness that has completely organized its thinking through its intellect and has achieved complete coherence in its feelings and actions. Its sense of self has become like the immutable rock in the river. It deflects everything around it.

Psychological Rationality and Wisdom. The sense of self is first experienced as a sensible quality, before becoming a more intelligible concept. In the same way that artists did not wait for sensible qualities to be made fully intelligible by science to know how to combine them, a psychology does not need to study its sense of self in order to think, desire, and act. Indeed, the painter and the musician do not need to scientifically understand sound waves and electromagnetic waves to know how to combine sounds and colors harmoniously. Similarly,

Newton did not need to understand what lies behind the mysterious force of universal attraction to discover the future position of the planets with great efficiency. He was content with the empirical concept of universal attraction. A pragmatic intelligence can thus achieve very accurate results without a perfect understanding of the concepts being manipulated.

Thus, from its birth, the mind already has the power to establish intimate reasons. However, unlike our adversaries who believe that the elevation of the soul comes through openness to the irrational, the present doctrine implies that it is on the contrary thanks to a better organized rationality that the soul can perfect itself, that the art of living can be refined and become more just, more precise and wiser.

Conversion to wisdom consists precisely in creating a sense of self that is more intelligible than the primary sense of self. This is what we have called expanded consciousness (level three), established above the consciousness of being conscious (the secondary consciousness of humans), itself based on the non-reflexive consciousness common to higher vertebrates (the primary consciousness). The consciousness of the wise man is a tertiary structure that develops through the love of Reason²³⁷. Level three consciousness establishes understandable desires, that is, ideals of Reason. This moral consciousness of the wise man forms a double bottom in human consciousness, the part of which organized by the higher intellect is less dependent on sensible reality, allowing the balance of the mind to be maintained, even when the external world, which does not depend entirely on oneself, prohibits or abolishes sensible joy. “ *The mind has the privilege of thinking by itself and for itself, and also of rejoicing in itself,* ”²³⁸ explained the Epicureans and the Stoics, after having noted their new capacity to detach themselves from material suffering and to maintain their freedom even in adversity.

The Fallacy of Causal Simplism. Unlike linear causality, which sees each single effect as having a single consequence, the events of human life are not the product of mono-causality, but are created by an imbrication of multiple intertwined causes, and represented in the brain by various neural maps dynamically interacting with each other. In this bundle of causes, the freedom of a being is only the Causality emanating

from the sense of self and the ideas constructed by complete intellectual sincerity that are attached to it.

If I claim to love, some will object that I am not free to desire and that in love I have been programmed without my knowledge by my genes to carry out the functions of the species. Certainly, I agree that survival and reproduction are imperatives common to the living world and areas where the biological determination on our existences is certainly the strongest, but even such biological instincts do not prevent the action, in the brain, of other psychological causes that will go with or against the direction dictated by the most elementary instincts. There are causes that set the scene and sometimes even define the goal, but there remains in consciousness a Causality by freedom that influences the way of interpreting the imposed role, or even that can oppose itself by refusing to play the scene written by another. Thus, it is never ignorance of the causes that determine us that allows freedom, but it is paradoxically when we are aware of the causes that act on us that thought best acquires the possibility of consenting to or rejecting certain orientations, that is to say, exercising our free will.

The degree of freedom is assessed based on the quality of the causal relationship that the subject manages to establish with everything around him. The more the interiority of the self rises to a coherent understanding and thinking of himself and the external world, the more he is able to become the “adequate cause”²³⁹ of his actions and to experience moments of freedom. Being able to objectively measure the quality of the causal relationship between complex entities, however, would require analytical skills that go beyond those of current science.

The Fallacy of Theological Causality. The incompatibility between determinism and freedom is frequently dismissed due to a misconception of Causality. Another widespread error is the preservation of a form of “theological causality” in the reasoning of many thinkers, even atheists, who systematically seek to explain the human order by reducing its meaning to prior structures. This method, which appears to be scientific because it is based on the idea that causes must be found, actually replicates the original error of theologians, when they sought to explain the place where lightning struck by invoking the moral faults committed by men. Everything has a cause, certainly, but not everything

has a cause that is significant for the human order. Given that in the material cosmos there is a scale in the organization of different types of things (matter, life, consciousness), we must also recognize a limit in the sense conveyed by Causality.

Human conceptual thought is the pinnacle of evolution on Earth, and therefore, it is only a tip of the iceberg amidst an ocean of nonsense. Human thought is immersed in an immense physical, biological, pre-psychological unconscious, and is also traversed by truncated or misassociated ideas. The doctrines that postulate that every idea appearing in consciousness necessarily always has a hidden meaning within a fully intelligible unconscious is a presupposition that leads to an abusive extrapolation of Causality and to aberrant and psychologizing pseudo-explanations, frequent in authors like Marx, Nietzsche and Freud

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When I paint a picture and translate a feeling into it, the image I paint expresses a part of my being, and contains partially intelligible information, which will influence the emotions of other minds who come to look at my picture; but in the distant future when this picture has turned to dust and all civilization and intelligence has disappeared, no intelligible effect of my work will still have any effect on the world; even if the impulse of the brushstrokes that I once gave, will have placed many atoms in positions that will still have repercussions on the order of matter. In this example, we clearly see that if there are potentially infinite consequences of my actions on the future configuration of matter, there is on the other hand a limit to the meaning that I can convey. What is true for the future of the influence of my being is also true for its past. In the same way that the meaning of my actions eventually becomes diluted, even though there will always be insignificant causal effects, the mind first appears from insignificant causes, before intelligibility emerges within it. Intelligibility is not initially present in the body from the embryonic stage, but it emerges slowly, parallel to the continual refinement of the conceptual apparatus and the learning of its mother tongue. During this genesis, a passage between the physico-biological world and the human order takes place, and this transition produces an irreducibility of meaning on a human scale. It is therefore an abuse of the search for causes to always want to find a meaningful explanation for human characteristics. To systematically want to account for the essence

of things by an external reason of the same order is the fundamental error of theologians and all those who share this abusive way of invoking Causality.

For decades, scientists have searched for the causes of cancer in humans in human behavior, before finally understanding that tumors are mainly caused by random mutations occurring by mistake during DNA replication ²⁴¹. For millennia, generations of theologians, such as Hegel, have searched for a reason for the number of planets in the solar system, even though there is no meaning greater than this number. Democritus saw that the universe is subject to chance (meaning) and necessity (mechanistic). Everything has a physical cause, but there is no particular reason for the number of planets in the solar system. There could very well be more or fewer. Perhaps certain parameters are indispensable for the existence of advanced life, such as the presence of a giant planet to attract excess meteorites, but the essential remains the result of chance, as illustrated today by the observation of other planetary systems. Physical causality generates objects without any pre-established order, and the properties of things are sometimes constitutive of the things themselves and are not to be sought in any external reason. In many cases, objects have no higher reason for being what they are, and their meaning is reducible only to their internal necessity. It is therefore wrong to imagine a pre-existing completeness in reality, which would reduce them entirely to the causes that produced them.

Part of the desire for Causality cannot be satisfied because it is illegitimate. Three lines do not make a triangle; and yet a triangle is formed of only three lines. Theologians will forever marvel at the conceptual void that separates three lines from the notion of a triangle, because the necessity not understood by them is perceived as a lack that their imagination constantly seeks to fill, and leads them to imagine an external cause instead of marveling at the perfection of internal necessity. This was already well understood by Democritus, who used the analogy between atoms and the alphabet to point out that if words are all composed of the same set of letters, each word nevertheless possesses “ a distinct meaning and harmony . ”²⁴²

The theological conception of Causality contains the implicit idea that the chain of causes carries the meaning of things. This erroneous conception, applied to the materialist conception of the mind,

leads either to denying the possibility of freedom or to rejecting the universality of Causality in a clumsy attempt to save freedom. Unlike theological Causality, since physical determinism does not necessarily carry meaning, this Causality does not systematically fix the meaning of what it touches, and therefore the values of objects often emerge spontaneously as internal properties of things. Once materialist, Democritean, non-finalist Causality has been integrated into one's way of seeing the world, one ceases to transform the necessary conditions of possibility into predestining finalism, and there is no longer any incompatibility between an omnipresent physical Causality and the existence of singular properties in finite beings, forming the basis of an individual freedom which then unfolds thanks to the capacities of the human brain.

Quantum Freedom? We have proposed here a reasonable explanation of freedom using classical, perfectly deterministic physics, without resorting to the fundamental randomness produced by quantum physics. Contrary to the Epicurean school, I believe that a fundamental indeterminacy in the movement of atoms is not necessary for human freedom. The existence of true randomness suggested by quantum physics certainly has a crucial implication for the question of destiny, but this randomness does not change the problem of human freedom. Whether man is formed of atoms with determined movement (classical physics) or partially indeterminate (quantum physics), the uniqueness of each mind is already the result of a chance encounter in the model we have proposed. Therefore, the fact that true randomness exists in nature thanks to quantum physics does not add more freedom to the decisions made by consciousness.

Absolute Freedom? Some will criticize my conception of freedom because it is not absolute freedom, but only the autonomy of the subject. The individual has not chosen who he is, nor his origins, and he does not then have absolute power to determine himself. Indeed, whoever tries to change himself can only do so starting from what he already is. At best, he will transform his personality, but only according to the power granted by his initial determinisms. Some moralists therefore seek a higher freedom, imagining the existence of a sort of

transcendent force that nothing would ever have determined and that would have all power. Thus, following his third antinomy, Kant claims to found human freedom by invoking an uncaused cause coming from beyond space and time. Normally, I should immediately reject such a lucubration in the name of the universality of the principle of Reason and forbid myself from discussing it, otherwise any discourse and any criticism that one can make of it loses its legitimacy, but out of curiosity I agree to put aside my fundamental principle for a while, in order to explore the possible openings offered by such strangeness. Let us therefore try to imagine, beyond nature, an uncaused cause that absolutely nothing has determined and that would penetrate into my mind to make me free. If this cause is an entity, that nothing has ever determined in any way, not even its internal properties, it would therefore be an absolute indeterminism. This freedom is therefore akin to total chance. As far as I have managed to imagine an uncaused cause transcending nature, all I have been able to glimpse in this absurdity is that it would ultimately only introduce a form of chance into the physical world, as does the random movement of atoms imagined by Epicurus and described by quantum physics, and which, moreover, changes nothing in the matter. I therefore do not see how this uncaused cause would bring greater freedom to the individual.

So see that the dignity of the human being gains nothing by fleeing the material world to take refuge in such nonsense. On the contrary, we lose ourselves by sacrificing our Reason to give credibility to such unintelligible fables. Like most of the other ideas defended in this essay, our conclusions have nothing to envy those of the spiritualists, the mystics and the opponents of materialism in general. The greatest freedom imaginable is that whose functioning I have just outlined on strictly rational bases, with concepts compatible with contemporary sciences.

Moral Judgment. Some will object that, despite everything, the dignity of the human being is affected, because without transcendent freedom, we should have no more admiration for a genius than for an ignorant person, who is no more responsible for who he is. According to them, if I were consistent, I should no more blame a criminal than a flood.

Let us already note that even if this conclusion were true, it would not take away from the fact that criminals should be isolated, just as it is necessary to build dikes to protect against floods. Condemnation of the guilty is also justified by the deterrent effect that the punishment has on all those who might be tempted by crime. Then, a naturalistic vision of the human soul where there is no essence of good, nor absolute evil, which is incarnated in individuals, to make them angels or demons, prevents the puritanical excesses inspired by theological moralities. No one has chosen who they are, so the individual is not themselves infinitely responsible for their deep nature; but at the same time, they are also irreducible to this nature. If their essence is free, they carry a value of their own which there would be no sense in trying to explain or excuse completely by the argument of external causes. The heart of each individual is a complete entity without any significant upstream process. The only way to see it is as an autonomous entity. Thus, while disqualifying guilt and infinite repentance, we can look at the world as a naturalist, noting that there are beautiful souls, others less beautiful, and this observation alone justifies a different moral assessment between natural disasters and the most horrible of men.

Indeed, the harm caused by a hurricane or lightning is merely a fortuitous and accidental encounter of this natural phenomenon with the human order. Although also natural, the harm produced by a deadly virus already leads us to a different assessment, because the essence of the virus is to parasitize us, which justifies the hatred it inspires in us. Finally, criminals who are fully aware of their actions deserve the feeling of horror they arouse because they betray the social contract and the rules of the human order to which they belong, unlike viruses. Thus, even if their character is entirely caused by blind nature, they can still be judged as dysfunctional beings from a human perspective.

Nature also produces minds with a powerless sense of self that leads them to resentment and predisposes them to the basest works, regardless of their histories and the punctual relationships they maintain with the external order. Although the conduct of any individual also depends on the socio-historical context in which they are born and evolve, the theory of freedom presented here indicates that our actions and feelings manifest, at least in part, our inner freedom, because the sense of self actively participates in the formation of our choices. It

therefore predicts that even if you were born and raised in a socio-historical context absolutely identical to that of a known hero or tyrant, you would certainly not have achieved the same benefits or misdeeds as him. A deep vice in the nature of certain beings is the source of their surprising desire to take revenge on reality, which is manifested by this gratuitous pleasure of martyring a stranger or mortifying themselves. Thus, the aversion that one can sometimes feel towards certain individuals is not always unjustified. The reverse is also true, and the admiration aroused by greatness of soul is due to something that goes beyond the mere circumstances that contributed to this genius. We feel that it comes viscerally from inner freedom, that is to say, from the deep and singular essence of the individual. Through its self-consciousness, each mind brings to life a nature of its own that everyone else is free to judge according to the manifestations it perceives. Thus, it is legitimate to admire the greatness of soul of those whom one feels to be moral geniuses and to feel aversion for human weakness. Unlike Spinoza, who on this point did not sufficiently break with the Stoic denial of the existence of evil in the world ²⁴³, negative moral judgments seem to me possible and certainly sometimes fully valid. In conclusion, you can see that this materialist freedom does indeed possess the qualities of an authentic freedom, with all its moral consequences for human dignity.

Mitigating or Aggravating Circumstances. Having shown the possibility of moral judgment, let us now specify that in individual cases, the analysis must be completed by taking into account the context before finalizing such judgments. The depths of conscience give rise to intimate reasons that develop thanks to the help of the intellect and acquired experience, consequently the final form that intimate desires take depends largely on the conditions offered by many other faculties of the brain, and by various influences present in the external layers of its psychology. Thus, although the mind is indeed endowed with freedom deep within itself, in real life, this freedom does not in itself summarize all the reasons that determine its feelings, its choices and its actions. Consequently, even if it is legitimate to hold against an individual his ill will and his inability to want sincere efforts, we must also consider that a large number of individuals misguided here could have evolved differently if they had had the chance to live in another context, hence

the will of the wise to build conditions favorable to the flourishing of existence. Thus, without denying the idea of freedom, our moral judgments must be moderated or aggravated by the observation of circumstances. Although it is wrong to systematically invoke the environment to remove the legitimacy of any moral judgment, the environment must be constantly used to refine such judgments. Finally, in certain cases, causes external to the individual can obviously be held solely responsible, for example, when an individual suffering from a dysfunction of his conscience no longer has the capacity to exercise his freedom, that is to say to express choices that come from his heart. Since he no longer knows what he is doing, it is only the blind order of nature that has fallen upon its victims.

The Alienated Soul. The sense of self exists in various forms, the most successful of which is manifested by the glorifying power that is sufficient unto itself and feels equal to the blessed gods; and the opposite by a morbid distress that demands compassion and exhausts itself in self-denial and self-forgetfulness. Faced with the challenge of our human condition, the spirit can evolve in two great opposite directions. Either, in its heart, its inner joy overcomes sadness, dominates injustice and elevates it into a living god imposing itself on the world, wanting to live, taste, realize all the beautiful things inspired by its subjectivity, and act according to the desires born of its inner nature; or its sadness prevails, its ideals decline, and the spirit remains powerless in the face of an order whose reality it will seek to escape. All our desires, choices and deep feelings have their origin in these two fundamental and hostile orientations: glorious Reason which exalts the desires of man liberated from the order of the cosmos, and this same vanquished Reason which hides in ignorance, and degenerates into fatalism, humility or compensatory arrogance, so that “ **he who lowers himself is very close to the proud** ” ²⁴⁴ noted Spinoza, who rejected together humility and vanity as two products of the impotence of the soul.

Either intimate Causality is strong enough to endure in itself, and the individual will be able to resist the external causes that will attempt to enslave him. He will then lead an existence freed from the blind order of the cosmos. Or intimate Reason self-destructs in the face of its fate. Emptied of its substance, the being then loses all true inner reason for

existing and dies while still alive. He is no more than a shadow of himself, agitated by the causes that surround him and sinks into slavery to the outside world. The mind becomes a wreck devoured from within by its own weaknesses. Emptied of the depths of its being, the body then pursues an existence agitated by primal instincts, resentment, and repressed desires. The soul of the fatalist has renounced itself and wanders through existence. Suffering and disoriented, the defeated soul will demand meaning for its life. Lost within itself, it then clings to an order that gives it a place and a meaning. As it is destroyed from within, it will draw its values from external things. The defeated soul will find a vitality that is sometimes fanatical by alienating itself to a substitute cause. It submits to a system that tells it what to be and what to do, and which it then defends with all its strength. The powerless soul melts into religious fundamentalism or another ideology, sometimes political, which replaces the individuality it lacks. It attaches itself excessively to the conventions of its time, to traditions, it gives senseless importance to the views and opinions of others, to the fashion of the moment which then becomes the pillar of what it is; the meaning of what it lives. It reidentifies itself through the feeling of its race. It submits to cosmic destiny, to the order of nature, or even to the so-called will of God. The powerless soul maintains a theological relationship with the world because it needs to understand itself in relation to an external order. Unable to exist on its own, it sees the depths of its secret everywhere in various external things... everywhere except in itself.

To cling to the mental universe that consoles it, the alienated soul must often deny the facts, and quickly comes into conflict with the reality it has fled. It fears this return of the truth that threatens it at every moment. Having become a thing of the world, it fears the outside world, which affects it all the more strongly. However, since psychological comfort now has greater force than the love of truth in its heart, its blindness, its lies, and its bad faith ultimately prevail.

Often divinizing the irrationality into which it has fallen, the alienated soul begins to wander in transcendences that are unclear to itself, which would found the depth of its feelings, the profound value of art, the true meaning of its spirituality... Despite everything that the chimeras of its imagination inspire in it, no one will ever elevate its soul in this way. Outside of its inner rationality, every spirit necessarily

condemns itself to the slavery of external causes that it ignores, that it does not know how to understand, or that it refuses to see because they have conquered it.

The Inversion of Values. Unrealized Desire continues to exist according to two great types of orientation: either sublimated in ideals or dreams that make it reborn and grow in a magnified form, or repressed in an unconscious that swells and overflows with frustrations and resentments. Now, obviously, the first orientation favors freedom, while the second manifests its extinction. From these two types of orientation of Desire have flowed two great forms of morality, religiosity and way of loving: that of ennobled characters, and that of impotent souls who invert values by substituting the arrogance of the philosopher with the humility of the believer ; the pleasure taken in oneself by the hatred of the self ; the demand on oneself through the expectation of others ; heroic love and the gift without return through the need for generalized compassion ; elective friendship through the undifferentiated love of one's neighbor ; the glorification of what is powerful, majestic and triumphant through pity and passion for all that is weak and miserable ; the ideal of a fair, just and united world by the reign of pity, charity and permanent whining ; republican meritocracy by communist egalitarianism ; the cult of virtuous heroes by the cult of the eternally oppressed ; the fight against injustice through victim heroization; the surpassing of tragedy by providentialist optimism or ontological pessimism ; the feeling of superiority which legitimizes its desire for surpassing through conformity and submission to authority ; the strength to preserve oneself by suicidal pacifism ; the power to overcome by the guilt of the strong ; the quest for truth through dogmatic belief or the skeptical nihilism of the ignorant ; the love of Reason through superstitious hatred of rationality ; the internal, self-sufficient coherence that puts its will into things through the psychological insufficiency of faith that demands meaning from things ; the exaltation of the senses through hatred of the body and sensual pleasures ; the marvelous spectacle of nature through the condemnation of the natural and the disenchantment of the world ; the will to build a paradise on Earth through the fable of the afterlife ; the magnificence of existence through the distress of one's mortal condition ; fidelity to the divine in oneself

through submission to an external demiurge ; in short, **Greco-Roman pagan humanist morality** through Christian theological-fatalist morality

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Individual Psychology and the Environment. The more the particularities derived from the sense of self form powerful inner desires, the more these weigh on actions, then are engraved in the world, and the more the individual will be said to be free. I have therefore defined freedom as the individual's capacity to form and then impose the desires associated with the sense of self on the world. The initial degree of freedom is therefore played out in the dynamic relationship between the maps of the sense of self and the other neuronal maps. The final freedom depends first on the inner power of the desire born deep in consciousness, then on various psychological constraints, and finally on the resistance of the outside world. Armed with this definition of freedom, there is no contradiction in maintaining that other causes can favor freedom. These external causes do not act on the first stage of freedom, but only on the later stages by modulating instincts, by destroying psychological barriers or physical obstacles which hindered the full development of desire, and its capacity to assert itself and then to triumph over the world.

Apart from moments of meditation, the self always expresses itself in a specific context with a set of biological, social, historical causes... The sage's quest for independence does not consist in denying his origins or the context, especially since there will always be one. If at first, the desire for freedom produces a desire for detachment from one's body, from the world, from the circumstantial culture of that time and place, it is a matter in a second stage, once the philosophical conversion is complete, of making the best use of one's incarnation in that given context and finding the best opportunities to realize oneself there.

Just as a true philosophy helps self-development, cultural and social norms have a beneficial or harmful influence on the freedom of individuals, depending on whether they encourage individual reflection, the blossoming of the individual being and heroic living or whether they legitimize religious doctrines and moral codes resulting from the inversion of values which hinder the full development of the individual.

From the pleasure of existing naturally flows the desire to preserve life, to transmit it and to perpetuate the beautiful things that we

have been able to taste thanks to the work of past generations. Even if the singularity of the individual is not reducible to the particular conditions that allowed its emergence, all existence has been possible only thanks to a certain favorable environment that the individual can therefore in return want to defend and preserve. Thus, the free man can want to preserve and improve the qualities of a culture, a certain education, a language, a country or even a civilization in relation to others, for the aspects that seem more favorable to the blossoming of his nature, philosophy and a happy life. This is why Einstein's peaceful internationalism is also articulated with feelings of civilizational belonging, and sometimes even of preference and national defense ²⁴⁶. Similarly, the Epicurean message was addressed in the name of love of humanity to all, including passing strangers ²⁴⁷. Ancient humanism knew how to recognize the individual beyond the particularities of his group, and also admitted the existence of universal values, valid for all men, without falling into the negation of the existence of groups, nor of average differences between peoples and cultures ²⁴⁸.

For a pagan, life is a gift, a present that must now be given in turn. You are the fruit of the efforts of past generations, and it is now up to you to pass on what you have received. During your existence, you must bring to the world more than what has been given to you, if you want to rise among the gods ²⁴⁹. Concretely, it is therefore a question of having beautiful children, of trying to enrich one's family and culture with new works and inventions, of preserving one's country, one's civilization, humanity and the environment for future generations.

Reason is the Right Measure of All Things. In the material cosmos, the meaning of things appears progressively with complexity. There is thus a natural hierarchy to the power of generality of each idea. There is a whole stratification of the domain of application of each value corresponding to its order of appearance during the evolution of matter. Some notions have meaning only for physical bodies, others are valid for all living beings, still others only for the human race or only some civilizations and finally some are limited to the singular individual.

Certain contractual moral values, such as the Golden Rule, have a validity that transcends not only cultures but also humankind, and are likely also valid between other forms of extraterrestrial intelligence. On

the contrary, certain behavioral values change with the times and civilizations. Finally, culinary or aesthetic taste varies greatly among individuals. The existence of values at the individual level thus allows opposing statements to be true for different individuals; however, these apparent contradictions do not constitute in this case a violation of the principle of Reason. Moreover, while opposing judgments of taste are certainly entirely possible and valid because they are made by beings with different sensitivities, not every judgment has the same quality as another. Indeed, the opinion of the expert who can blindly recognize a thousand flavors is worth more than that of the ignorant in the matter. Thus, individual tastes are values constructed on conscious or unconscious reasons, and even here relativism is not absolute.

Because a mathematical-materialist vision of reality invites us to understand the origin of the values we feel, it allows, through study, to give things their rightful place, by granting them the right mix of absolute and relative. This avoids both the dogmatic arbitrariness of theologians, and the nihilistic excesses of generalized relativism. These two camps oppose each other, but they actually share the common condition of not understanding the origin of the values they perceive, and are mistaken about their true places. Theologians extend values where they have no meaning, and skeptics reduce them to simple conventions even when they have a much broader scope. Only the effort of understanding, through a theory of nature, allows us to give things their rightful place.

History and Rational Politics. Men are not guided by Reason. They replace the intellectual effort that must necessarily be made in politics with simple general moral principles born from the memory of past excesses. The history of men is thus a repetition of excesses that engender one another. In response to a traumatic historical experience, men establish a morality that then proves inappropriate in another historical configuration and produces the opposite catastrophe. Thus, aggressive imperialism engenders wars whose horror in turn inspires a naive pacifism that facilitates invasions and produces new nationalist reactions. Excessive authoritarianism engenders laxity and chaos that create the conditions for the return of a new authoritarianism. Intolerance of differences goes, in reaction, to produce tolerance of the intolerant

who sow the seeds of future intolerance. Lack of regulation engenders excesses of statism and vice versa...

Only Reason can overcome this infernal dialectic and strive for the rational optimum, the right balance between conservation and progress. Political thought cannot therefore be reduced to fixed recommendations, like biblical commandments. Men cannot free themselves from a rational analysis of the present time, with all its specificities. Politics cannot be based on timeless moral principles, inherited from the memory of traumatic historical experiences. Politics must be based on a rational understanding of the origin of values, which then allows them to be adapted and readjusted. The complexity of reality is such that there are no other principles in politics than those contextually justified by sound Reason in the service of maximizing lasting happiness.

The history of the last three millennia shows that the philosophy of nature initiates the progress of civilizations, and that its decline coincides with their regression, simply because it is our image of the world that structures our ethics and then conditions our policies. Our naturalist vision allows us to give their true place to the notions of good and evil, seeing them neither as transcendent dogmas nor as cultural relativism, but as the logical consequences of the existence of the spirit in the material world. But without a philosophy of nature to precisely interpret, construct, and update each value in each specific case, man does not have a conceptual framework that allows him to resolve the challenges he encounters. Consequently, he does not know how to refine his concepts and, ultimately, all the reflections, debates, and discussions he may well conduct, even within the most perfect democratic rules, are inexorably lost in relativism or arbitrariness. It is only from the current of true Enlightenment, using a philosophy of nature renewed and perfected by the genius of philosopher-scientists, that ethics and politics can then be based on natural principles, universally recognizable by all rational minds, that a legitimate basis then appears, alone capable of serving as the foundation of a true republic ²⁵⁰.

In Praise of Complexity. A final warning against possible extrapolations or misuses of the ideas presented in this essay seems necessary to me. Although I am convinced that this way of seeing things

is often relevant, I invite you to keep in mind that any theoretical model based on empirical categories constitutes only an approximation, and therefore has, at best, only a limited range of validity. This reservation applies to any theory. No idea in this essay is an exception. Consequently, even if the conceptual framework I have proposed has allowed us to propose simple and clear answers to the great moral and metaphysical questions, as well as to describe the force that can make existence triumph and finally to perceive the key to the functioning of authentic freedom, it is not at all certain that this framework will be powerful enough to think about other questions or to deepen the answers that have been outlined here. In some cases, it will be necessary to supplement it with other concepts yet to be discovered, or to refine the categories already present. For example, in the case of a concrete individual, the sense of self is obviously something much more subtle to appreciate than what is suggested by the idealized strong/weak cases presented here, in a binary reductionism to which I have indulged for reasons of simplicity. In concrete cases, the situation is much more nuanced and complex. Like all the other thoughts in this essay, these explanations therefore remain at best dreadful simplifications compared to the extraordinary complexity of reality, which it would nevertheless be essential to be able to take into account, but which we can only approach.

The links between Democritus, Epicurus, Spinoza and Einstein

To speak of a millennial current of integral rationalism is a way of accounting for the proximity between these four thinkers, without wanting to attenuate the originality, nor the particularities specific to each, which have been, for me, an inexhaustible source for refining my reflection. To claim a common base is to claim what unites us, without feeling obliged to deny the differences, nor having to assume the errors, here or there, of any representative of my philosophical tradition. By positioning myself in this way, I therefore affirm that I have not been the disciple of anyone, and I am willing to consider that even my four favorite thinkers would perhaps not have adhered to certain extensions that I propose to many of their ideas. The detailed discussion of our common points and our differences, in my opinion often reducible to nuances after analysis, would in itself merit an in-depth study which goes beyond the scope of this essay; However, I note that this discussion would ultimately be very difficult to conduct given that the understanding of their true position is often limited by the fact that we only have a few fragments of their texts, or that their different writings do not always outline a perfectly coherent doctrine, surely because of clumsiness or because their ideas, or the way in which they defended them, has evolved a little with the circumstances. Also, I note that there is no consensus on the interpretation of their exact position. As a precaution, and to avoid getting bogged down in these problems, I alone assume the words of this essay and I am content with the vague formula of current to define my predecessors, so as not to have to decide in detail. Depending on the idea that you have of this or that point of their thought, you will sometimes judge them more or less close to each other or to me. I have simply noted our strongest points of meeting; This formulation of my doctrine has the advantage of illustrating its coherence, of strengthening its external readability, while increasing the interest and scope of the text. Finally, I know that it will encourage some to take my theses more seriously, at least a close version of which is also defended by these major figures.

After these reservations, which I felt it was essential to express, I would like to quickly recount how I became convinced of a strong closeness between myself and these four thinkers. From my first readings of their respective writings, I had the overwhelming impression of finding my ideas in the overwhelming majority of their thoughts, a very rare sensation, which I have encountered almost nowhere else. Subsequently, this feeling of a sort of unity between myself and each of them was objectively reinforced, when I had the extraordinary surprise of gradually finding in their texts explicit opinions, rather positive, even sometimes very positive, bringing them closer together. In such moments, I experienced the feeling of living extraordinary moments, fascinated to have discovered a hidden treasure which contains, buried, all my truth. Also, I ended up convincing myself that I had correctly perceived the links uniting a thousand-year-old current, to the point of using this underlying impression as a backdrop to present my philosophical doctrine. This feeling is based on my personal reading of their writings, and in conclusion, I offer below the transcription of the opinions they expressed about them, accompanied by brief comments. Thus, in case you still doubt the existence of real links between them, these explicit remarks should help to constrain the various possible interpretations, by showing at the very least that it was not aberrant to have presented them together.

Epicurus on Democritus: Diogenes Laertius reports that “Epicurus devoted himself to philosophy after having read the books of Democritus . ” ²⁵¹Plutarch tells us that “Epicurus himself proclaimed himself a Democritean for a long time, as others say, and even Leonteus, one of the most sublime disciples of Epicurus, in a letter he wrote to Lycophron saying that Epicurus honored Democritus, because he had been the first to attain, somewhat from a distance, the right and sound understanding of the truth, and that generally the whole treatise on natural things was called Democritean, because Democritus was the first to fall upon the principles, and had encountered the foundations of nature. And Metrodorus, openly says of philosophy: if Democritus had not opened and shown the way, Epicurus would never have attained to wisdom . ”²⁵²

Most scholars who have studied and compared the texts of Democritus and Epicurus note that their physics, but also their ethics, share a strong proximity ²⁵³, which leads to the conclusion that Democritus is indeed the main source of Epicurus' thought. In his controversies, Epicurus actually combats the relativistic and fatalistic drifts that Protagoras, the skeptics and the pseudo-Democriteans like Nausiphanes produced from Democritus, and that Democritus had already begun to counter ²⁵⁴, even if these errors were made possible by the inadequacies of Democritus' system that Epicurus therefore undertakes to correct.

After collecting a considerable number of ancient texts which demonstrate that some Stoics invented lies to discredit Epicurus, Pierre Gassendi concluded in the 17th century that Democritus was held in esteem in the Epicurean school ²⁵⁵, even if he was criticized on many points, as indeed the occurrences of Democritus in the poem of Lucretius demonstrate very well. Since Gassendi's work, new texts have been discovered which have come to support this conclusion. In the fragments found at Herculaneum, Epicurus refers to Leucippus and Democritus as “ the first to have given a satisfactory theory of causes far superior to all their predecessors and successors , ” ²⁵⁶while the Epicurean Philodemus of Gadara quotes Democritus, taking care to introduce him: “ Democritus is not only the author who knows nature best among the ancients, but his curiosity is in no way inferior to that of the investigators , ” ²⁵⁷and he tells us that Epicurus's position with regard to Democritus was to “ forgive him for his errors through his criticisms . ” ²⁵⁸The Epicurean Diogenes of Oenoanda also explains that Democritus was the first to discover the true nature of things, but he reproaches him for “ having erred in a way unworthy of him ” ²⁵⁹when he began to doubt the truth of the senses.

Spinoza on Democritus and Epicurus: In 1674, one of Spinoza's contemporaries was surprised that he could deny the existence of ghosts, even though the “great philosophers” Plato and Aristotle believed in them. Recognizing himself as belonging to a millennial current, Spinoza replied: “ The authority of Plato, Aristotle, etc. does not carry much weight for me; I would have been surprised if you had alleged Epicurus, Democritus, Lucretius or someone from the atomists or supporters of atoms. It is not surprising that men who believed in occult

qualities, intentional species, substantial forms and a thousand other nonsense, imagined ghosts and spirits and gave credence to old women to weaken the authority of Democritus. They envied his good name so much that they burned all the books so gloriously published by him . ”

²⁶⁰Epicurus is mentioned twice more in the TTP. Epicurus' morality and materialism are also praised in the "treatise on the three impostors" written by a disciple of Spinoza, while Spinoza's opponents accused him of promoting a kind of Epicureanism ²⁶¹. Thus, at the beginning of the 18th century, the first supporters of what would later be called the Enlightenment were then referred to as " **Epicurei-Spinosisti** " ²⁶².

Scholars generally recognize a proximity between Spinozism and Epicureanism ²⁶³. In summary, at the physical level, Spinoza and Epicurus combat the theological conception of the world and the spiritualist conception of the soul. They share the idea that everything is determined by the morally neutral laws of nature that nothing can ever interrupt ²⁶⁴. They believe in the self-sufficiency of nature and the inherent nature of movement in matter, against the first cause, final causes, and other creationist arguments of Plato, Aristotle, and the Stoics ²⁶⁵. At the moral level, they have a positive conception of desire and pleasure ²⁶⁶ and make the permanence of inner joy an achievement of their wisdom, which leads to tranquility of the soul against the agitation of external causes. As humanists, they glorify the singular individual instead of dissolving him in the greater whole or any other superstructure such as history, the state, the nation... which again distances them from the Stoics, even if like the latter, they find relief in the understanding of necessity ²⁶⁷, but without falling into their fatalism ²⁶⁸. At the political level, they are hostile to the prestige of kings and great conquerors ²⁶⁹ because they want a state that favors above all peace, tolerance and the development of the individual ²⁷⁰. Finally, they see laws not as absolute and indisputable dogmas, but as contracts made between men not to harm each other, and therefore potentially universalizable to the whole of humanity ²⁷¹.

Although less studied , the parallels between Spinoza and Democritus are also quite striking. In particular, they were among the first in their time to propose a morality based on self-love: “ **self-satisfaction** ” in Spinoza and “ **self-pleasure** ” in Democritus. Finally,

they identified rational human thought with divinity, and concluded their philosophy with a unity²⁷².

Einstein on Democritus and Epicurus: Epicurus rejected the Homeric myths and came to philosophy at the age of 14 (or 12), when he realized that literature teachers were unable to explain to him where Hesiod's chaos came from²⁷³. In his autobiographical notes, Einstein recounts abruptly rejecting the Bible at the age of 12, when he realized its incompatibility with science. In 1923, Einstein wrote a preface to Lucretius's poem in which he tells us that “ the firm conviction that Lucretius, a faithful disciple of Democritus and Epicurus, places in the intelligibility, in other words, in the causal connection of everything that happens in the world, must create a strong impression . ”²⁷⁴On Newton's 200th birthday, Einstein wrote: " Newton made reality the dreams of the great materialist philosophers of antiquity, Democritus and Epicurus, that there should be a complete and homogeneous causality of physical events . " ²⁷⁵Einstein corresponded throughout his life with his friend, the philosopher Maurice Solovin, translator of Democritus and Epicurus. In 1947, in their letters, he confided: “ I have experienced a great deal of joy in reading your Epicurus. That this man is generally right with his ethics, one can hardly doubt... he is right on this point that morality must not be based on belief, that is to say, superstition. The eudaemonistic conception is certainly even correct to a first approximation... it seems to me, however, that he does not exhaust the subject... [Einstein discusses the concept of happiness which does not seem clear enough to him, because] the more closely one looks at it, the more nebulous it becomes . ” ²⁷⁶In a completely different letter where Einstein is questioned about the meaning of existence, he replies that, in his opinion, the purpose of life is “ the satisfaction of desires , ” ²⁷⁷while condemning the empty pleasures that men usually seek in luxury and celebrity, which effectively brings him closer to Epicurean ethics. Einstein also said that he “ loved giving more than receiving , ” ²⁷⁸words identical to those of Epicurus. Other similarities bring them together, in particular, materialistic laughter²⁷⁹, the joy of the child perceived as an ideal²⁸⁰, rebellion against social norms²⁸¹, and the absence of fear of death²⁸².

Like the Epicureans, Einstein claimed not to fear death and seemed unaffected by the approach of his own, or that of others. After

the death of his sister, to console his daughter-in-law Margot, he said this enigmatic sentence, which one would think came from the mouth of Epicurus: “ Study nature carefully, very carefully, and you will understand everything much better . ”²⁸³What did Einstein really think? Reading his various texts, it seems difficult to conclude, however he sometimes let slip feelings not far removed from those produced by materialistic immortality. For example, when he had fallen seriously ill and was believed to be on the verge of succumbing, his calm astonished those around him. On this occasion he declared: “ I feel myself so much a part of all that lives, that I am not in the least concerned with the beginning or end of the concrete existence of a particular person in this eternal flux . ”²⁸⁴On the death of his friend Michel Besso, he wrote: “ Now he has preceded me by a little, leaving this strange world. This means nothing. For us, convinced physicists, this separation between past, present and future, retains only the value of an illusion, however tenacious it may be . ”²⁸⁵

After reading the fragments of Democritus, Einstein wrote to Solovin that “ among his moral aphorisms there are a number which are really beautiful . ” and ends this letter with a eulogy for Democritus's confidence in universal Causality: “ Worthy of admiration is the firm belief in physical Causality, a Causality that does not stop before the will of Homo sapiens. As far as I know, it is only Spinoza who has yet been so radical and so consistent . ”²⁸⁶A few months later, Einstein wrote his first text on “ cosmic religiosity , ” in which he invites us to realize that “ men like Democritus, Francis of Assisi, Spinoza are profoundly similar ”²⁸⁷(Einstein had read a work that presented Francis of Assisi as a pantheistic heretic, perhaps influenced by David of Dinant). Einstein identified with heretics and freethinkers, and claimed to be inspired by “ Giordano Bruno, Spinoza, Voltaire ”²⁸⁸when he denounced the Nazis in 1933. On the eve of Hitler's election, Einstein may have remembered Democritus's maxim when, in an anti-nationalist frenzy, he wrote to a little girl: “ The whole Earth will be your homeland . ”²⁸⁹He again quotes a fragment from Democritus in his book “ The Evolution of Ideas in Physics . ”²⁹⁰

After Einstein's death, Solovin wrote in his epitaph: " He will live in the memory of future generations not only as a scientific genius of exceptional greatness, but also as a man who embodied moral elevation

to the highest degree. His image is deeply engraved in my soul and, strangely moved, I murmur these words of Epicurus: Sweet is the memory of the departed friend. "²⁹¹

Einstein on Spinoza: In his autobiographical notes, Einstein recounts the existential torments he experienced in his early adolescence, and then how “ **the contemplation of the universe felt like a liberation , ”** ²⁹²a journey that strongly resembles the one Spinoza tells us about at the beginning of the treatise on the reform of the understanding ²⁹³and which he also mentions in his letter to Oldenburg, where he distances himself from the legendary figure of the laughing Democritus. Maurice Solovine tells us that Spinoza was on the program of their reading club “Olympia Academy” (1903-1905). Einstein resumed reading Spinoza in 1915 and confided then: “ **I believe that the Ethics will have a permanent effect on me , ”** ²⁹⁴thereby fulfilling the prophecy of a disciple of Spinoza who had announced at his death: “ **he will live in the memory of true scholars, and in their minds, which is the temple of immortality . ”** ²⁹⁵From this time on, Einstein began to declare that he felt “ **very close to Spinoza . ”** ²⁹⁶He referred to Spinoza’s “ **Amor dei intellectualis ”** (intellectual love of God) on several occasions, declared that he “ ²⁹⁷**believed in Spinoza’s God , ”** ²⁹⁸and explained that he wanted to know “ **the thoughts of God , ”** ²⁹⁹a poetic formula for his ambition to achieve the most fundamental knowledge of the laws of physics, itself directly inspired by Spinoza’s doctrine, which teaches that “ **the supreme virtue of the mind is to understand, that is, to know, God ”** ³⁰⁰through knowledge of the third kind, that is, to discover the structure of the cosmos through mathematical simplicity, reformulated in Einstein’s language. After the 1919 eclipse confirmed general relativity, Einstein went on a pilgrimage to the former home of the man he revered as “ **our master Spinoza . ”** ³⁰¹On this occasion, he composed a poem for him that opens: “ **How much I love this honest man / More than words can express / Yet fear that he remains alone / He and his radiant halo . ”** ³⁰²He reread Spinoza’s work and correspondence in 1928, wrote a preface to Dagobert’s Runes, and made a statement to the Spinoza Society of America ³⁰³. When asked about his belief in Spinoza’s God, he replied: “ **I am fascinated by Spinoza’s pantheism, but I admire even more his contribution to modern thought, because he is the first philosopher who treats mind and body as**

a unity, not as two separate things . ” ³⁰⁴“ Spinoza was the first to apply with strict consistency the idea of an omnipresent determinism to human thoughts, feelings, and actions . ”³⁰⁵

While some physicists considered that the quantum revolution showed that the universality of the principle of Causality had to be abandoned, Einstein replied that it was only necessary “ to broaden and refine our conception of Causality. [...] Most of the misunderstanding surrounding this question of Causality comes from the fact that the principle of Causality has been formulated in a rather rudimentary way until now [Einstein continues this comment by criticizing Aristotle and Kant]” ³⁰⁶. A year before his death, Einstein reaffirmed that “ a limited Causality is no longer a Causality at all, as our wonderful Spinoza has rightly recognized ” ³⁰⁷.

Conclusion: Finally, the central link that unites these four thinkers and which has been the guiding thread of this essay is cosmic rationalism. Our philosophical systems are characterized by the presence of an ultimate metaphysical principle ³⁰⁸that provides a foundation for human thought by allowing it to no longer spin in a vacuum, drowned in an infinity of arbitrary concepts, but can now gain a foothold and glimpse the totality of reality from within. For us, the ultimate metaphysical principle is not inaccessible to the human mind, but it is right there, within us and before us, which has the effect of producing an atheism with quasi-religious impulses. This is why each of us is seized by cosmic visions [[note II](#)], uses religious vocabulary in a poetic sense [[note I II](#)], and speaks of an immortal good obtained through the rational study of nature [[note I V](#)] .

I. Happiness through Philosophy. “ *Philosophy is an activity which, through discourse and reasoning, procures for us a happy life.* ” “ *We must meditate on what procures happiness, since when it is there, we have everything, and when it is absent, we do everything to obtain it.* ” “ *Once ataraxia (=the plenitude of the soul) is reached, all the storms of the soul disperse, the living being then no longer having to walk towards something it does not have, nor to seek something else which can perfect the happiness of the soul and the body.* ” “ *He no longer has anything in common with mortals, the man who lives in the midst of immortal goods.* ” Epicurus ³⁰⁹. “ *I have finally resolved to investigate whether there exists a true good capable of communicating itself to men, a good*

which alone can fill the entire soul, after it has rejected all other goods; in a word, a good which gives the soul, when it finds and possesses it, eternal and supreme happiness .” “ Love which has for its object something eternal and infinite nourishes our soul with a pure joy without any mixture of sadness, and it is towards this good, so worthy of envy, that all our efforts must tend. ” “ [Philosophy must] lead us as if by the hand to the knowledge of the human spirit and its supreme beatitude ” Spinoza³¹⁰

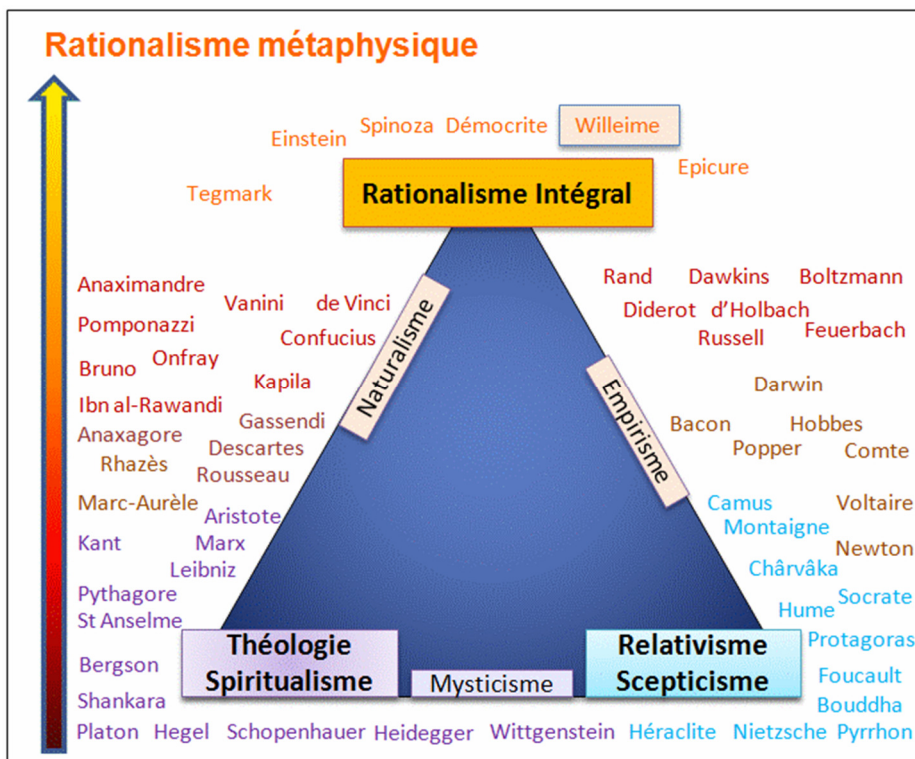
II. Cosmic Visions . “ *[Democritus] believed that vision is an obstacle to the penetration of the mind, while others often do not even see what is beneath their feet, he traveled throughout infinity, without encountering any limits .* ” ³¹¹For Democritus, the senses produce a bastard knowledge, while “ *intellectual vision* ” is legitimate and allows us to perceive the entire universe beyond what our senses teach us. We find these cosmic visions in Epicurus ³¹², a faculty that Homer attributed to the gods. Similarly, Spinoza speaks to us of a rational perception distinct from sensory/memorial perception: “ *the mind, in fact, does not feel less the things it conceives by the understanding than those it has in the memory. The eyes of the mind, these eyes which make it see and observe things, are demonstrations .* ” ³¹³Einstein daydreamed frequently, and the ideas underlying his physical theories came to him during these moments when his wandering mind freely explored the universe.

III. Enlightened Paganism. The Indo-European root dei- “to shine,” expanded into deiwo- and dyew-, serves to designate the luminous sky and produced the Sanskrit devas, the Greek theos, the Latin deus, and the French dieu. The word dei therefore refers both to the universe, nature, the starry cosmos, and also to light, the symbol of Reason opposed to obscurantism. After two millennia of denaturing the word “god” by Abrahamic monotheism, Bruno, Spinoza, and Einstein thus reappropriated the word “god” in a sense closer to its original pagan meaning. In Epicurus and Spinoza, religion is both a hidden atheism ³¹⁴and a reinterpretation of piety in a form compatible with philosophy ³¹⁵. “ *Epicurus observed all forms of worship and enjoined his friends to observe them, not only because of the laws, but for natural causes .* ” ³¹⁶He frequently spoke of the gods, especially Apollo. Democritus also spoke metaphorically of “ *the works of divinity* .” ³¹⁷to designate animals. “ *Ionian rationalism is pleased to use religious terms as long as they can be adapted to the requirements of naturalistic logic, and as long as they do not prohibit the rationalist critique of magic. Call “divine,” if you please, the “sacred” disease, the Hippocratic treatise essentially declares, but understand its natural causes and see to it that religious symbolism does not put you in the hands of purifiers and other charlatans who all practice under the auspices of religion .* ” ³¹⁸Lucretius, who himself began his poem with a hymn to Venus, explains to us that “ *if one wants*

to call the sea Neptune, and the harvests Ceres, if one likes to use the name Bacchus abusively instead of the proper term which designates wine, one is also master of giving to the earth the title of Mother of the gods, provided that in reality one preserves its spirit from the shameful stain of superstition ” ³¹⁹. Let us recall that ancient polytheism was in fact a pantheism with a naturalist tendency which already admitted that the great God is nature ³²⁰, that the gods are only various names for the forces of nature (Zeus for lightning; Minerva for the air...) ³²¹, forces which also manifested themselves through great men, whose memory was mythologized, explained Euhemere. “ *[The ancient Romans] did not worship Jupiter as if he were the divinity, but they worshipped the divinity as it was in Jupiter ,* ” wrote Giordano Bruno (The Expulsion of the Triumphant Beast, III, II). “ *God is in the part as much as in the whole .* ” ³²²continued Spinoza. This natural religiosity reconquers the idea of the absolute, of celebration, of morality, of beatitude and even the words “soul”, “miracle” and “god”; and it leaves to our adversaries only the inversion of values (the satanic trinity: hatred of nature, hatred of self, hatred of Reason). Cosmic religiosity deifies everything that manifests the sublime, and worships the ultimate principle that is embodied in the true, the just and sometimes also the beautiful. This enlightened paganism has the power of religion, while being conceptually an atheism. Epicuro-Spinozism is an antireligion, a counter-religion. It is the firmest condemnation of belief in the irrational and the supernatural, while also being a religion, but in the noble sense of the term. The conception of reality that, according to you, describes the truth, or at least defines your relationship to the truth, is your religion. In this sense, we all have a religion, which allows us to connect with those who adhere to the same conception of reality (the word religion comes from the Latin religare=to connect), which is why each person's religion dictates their civilizational affiliation.

IV. An Immortal Good Obtained by Rational Knowledge. “ *Democritus made happiness reside in the knowledge of things* ” ³²³, because according to him, “ *to achieve happiness one must not make pleasures reside in mortal things* ” ³²⁴. Epicurus continues: “ *I recommend the constant study of nature, thanks to which I enjoy perfect serenity in my life* ” ³²⁵. Lucretius elaborates: “ *man is a sick man who does not know the cause of his illness. If he could find it, he would apply himself first of all, leaving everything else there, to studying nature; for it is a question of eternity, not of a single hour; It is about knowing what awaits mortals in this endless duration which extends beyond death .* ” ³²⁶Spinoza explains that the “ *sovereign good* ” comes from “ *the knowledge of the union of the human soul with all of nature .* ” ³²⁷Einstein said: “ *Equations are more*

*important than politics in my opinion, because politics is for the present while equations are something for eternity . ”*³²⁸



Classification of philosophers around three main poles, facilitating the visualization of our position in relation to the great names of philosophy.

The Corruption of Philosophy by Spiritualism and Theology

In this fifth commentary, I review the main representatives of Western philosophy and show that the heart of their thoughts is irrational, completely contaminated by spiritualist and/or theological a priori. Moreover, I show that historically, they are often reactions against the advances of rationality and science. Similar reactions also dominate Persian, Arab, Indian, Chinese history, etc.,³²⁹ and have regularly caused the decline of civilizations, illustrating the universal and eternal struggle of obscurantism against the Enlightenment.

As a confrontation with adversaries sometimes allows one to clarify and refine one's thoughts, this brief presentation of these influential authors is an opportunity to invite you to reflect on your own position, and to encourage you to free yourself from the weight of these authorities who mislead truly philosophical souls from the noble quest for truth.

Plato. At the end of the 5th century BC, the philosophy of nature reached its peak in Greece with Democritus, however the profound implications of this new conception of reality for existing religious beliefs provoked a theological-spiritualist reaction from a distant student of Socrates. Plato promoted attempts to justify religious beliefs through a new discipline he called “theo-logy”³³⁰, which in fact dissociated Theos (god) from Logos (underlying coherence, reason, logic, meaningful discourse/statement, demonstration, intellect), unlike true philosophy in which Theos = Logos = the principle ordering the Cosmos. Throughout his work, Plato defended the entire conceptual framework on which theistic religions were based. Plato believed in the immortality of the immaterial soul, a recurring theme in his dialogues and also in a good, quasi-transcendent god and architect of the world³³¹. At the same time, Plato fought against the materialists³³² and relies on the intelligibility of reality, noted by natural philosophers before him, to try

to turn this argument against them, and defend his spiritualist views. Faced with the disbelief of atheist materialists, Plato is at first scandalized to have to justify the existence of his good god ³³³, but to persuade his adversaries, he resorts to the argument of the uncaused first cause ³³⁴. However, Plato quickly loses patience with those who are not convinced by this false concept, since he demands their condemnation to death by a tribunal that prefigures the inquisition ³³⁵. Over the years and his dialogues, Plato moved away from Socratic questioning to become radicalized into a totalitarian fundamentalist close to the biblical god ³³⁶. He proclaims that: “[the good] God [transcendent] is the measure of all things... [that] man is only a puppet invented by God... [and that] independence will be eradicated from the whole life of every man . ” ³³⁷ It is therefore hardly surprising to learn that he also wanted to burn all the works of Democritus ³³⁸. Sharing the same hatred of the world as the religious fanatics who forbid earthly pleasures, Plato denounces art and music as imitations that distract from the contemplation of his heaven of ideas.

The harmful influences of Platonism were contained for seven centuries, but in the third century, Neoplatonism became the exclusive form of philosophy in the Roman Empire and paved the way for Abrahamic monotheism. The proximity of the early Christians to Plato was immediately noted by the crypto-Epicurean Celsus ³³⁹, and this view was generally held by the Enlightenment. “ I do not see that theologians have ever taught anything other than the speculations of Plato or Aristotle , ” ³⁴⁰ observed Spinoza. “ Plato’s philosophy made Christianity, ” ³⁴¹ concluded Voltaire. “ Christianity is Platonism for the people , ” ³⁴² wrote Nietzsche. Even more convincingly, this view was also held by the Christian theologians Justin of Nablus and Augustine of Hippo, who wrote: “ What need is there to examine other philosophers? None of them is closer to us than the Platonists . ” ³⁴³

Aristotle. In the first book of his *Metaphysics*, Aristotle displays his contempt for natural philosophers, whom he compares to “ inexperienced soldiers , ” and judges their explanations using “ material cause alone ” as insufficient , like his master Plato. However, noting the failure of Plato’s spiritualism to refute Democritean materialism, Aristotle embarks on a rewriting of physical theories by introducing the

action of divine providence, in the form of his famous Final Causality, an addition that Francis Bacon would hold responsible for having delayed the progress of science for 20 centuries³⁴⁴. Aristotle criticizes his predecessors throughout his work on this precise point: “Democritus omits to deal with the final cause, and reduces all the ways of nature to necessity.”³⁴⁵

By depicting Aristotle pointing to the Earth, as opposed to Plato pointing to the sky, Raphael's famous painting distances us from the true opposition. Even if Aristotle is often more enlightened than his master, Aristotle essentially works to reconcile science with religious belief. The medieval scholastics were not mistaken. Aristotle and Plato are compatible with theology, and the thinker who truly opposed them was Democritus.

For Aristotle, not only does God exist but he is necessarily a pure immaterial spirit: “[God] has no matter [...] The principle of beings, the first being, imprints the first movement, eternal and unique movement. [...] [In addition to this] first and immobile essence, we see that there still exist other eternal movements, those of the planets [...] The goal of all movement is therefore one of these divine bodies which move in the sky. [...] A tradition coming from the most remote antiquity, and transmitted to posterity under the veil of fable, teaches us that the stars are gods.”³⁴⁶ We will note the speed with which Aristotle himself makes the link between his metaphysical reflection and the astrological and religious fables of his time, to the point of asking whether it was really an honest intellectual approach that guided him towards these erroneous ideas, or whether philosophy was not, for him, already demoted to being only the servant of theology.

The Stoics. Although pantheistic, materialistic, and considering themselves fragments of Universal Reason, the Stoics subscribe to Plato's and Aristotle's view of the first cause³⁴⁷, and defend a creationist view that asserts that nature is “the product of a skilled craftsman and that it was not made by chance,”³⁴⁸ contrary to the naturalistic explanations proposed by Democritus and Epicurus at the same time. Stoic morality relies on the authority of this cosmic providence to demand acceptance of one's fate. One must not rebel, nor seek to overthrow the organization of things, because “it is God who put you in

this position .”³⁴⁹ Epictetus tells you. Descartes will take up this fatalistic morality which invites “ always to change my desires rather than the order of the world ” ³⁵⁰ .

Scholasticism. In the 12th century, the Amaurician David of Dinant reestablished a materialist pantheism. After his condemnation, and in order to prevent the resurgence of heresies, Thomas Aquinas rehabilitated natural philosophy within a strictly Aristotelian framework.

Descartes. The Copernican revolution having discredited scholasticism, Descartes proposes to accept its consequences, without questioning the substance. Thus, although it was an important step forward for his time, Descartes cannot be considered the great representative of rationalism. According to Descartes, not only does God exist, but he is “ incomprehensible ” ³⁵¹ . He arbitrarily creates eternal truths, and he could just as easily have made $2 + 2$ not equal 4, an assertion that scandalized even Leibniz ³⁵² . In Descartes, as in the Christian theologians, God is not himself subject to the principle of Reason. This illustrates the weakness of Descartes’ rationalism and explains how, despite his practice of doubt, Descartes can set aside the “ truths of faith ” ³⁵³ .

Descartes also maintains that the soul is immaterial, eternal, and can exist separate from the body ³⁵⁴ . He dogmatically believes in the possibility of bodiless spirits and is unable to consider the materialist conception of the mind, as illustrated in particular by his exchanges with the semi-Epicurean Pierre Gassendi. If Descartes had truly followed the method he had proposed, he would have had to break, or at least have had to take a critical distance from, the spiritual-religious dogmas of his time, but he did not do so.

Locke. Despite his empiricist theory, John Locke defends the existence of miracles in the service of religious revelation (Discourse on Miracles), and refuses to tolerate atheists (Letter on Tolerance).

Leibniz. Frightened by the materialist and atheistic consequences of Spinoza's philosophy, Gottfried Leibniz initiated the spiritual-theological reaction against the Enlightenment ³⁵⁵ . Leibniz saw

himself as the transcendent "advocate of God ." He restored finality and providence (theodicy) and opposed materialism with a spiritualist idealism (monadology). He thus laid the foundations for Hegel and Kant, whose efforts would consist of subverting Reason in an attempt to make it compatible with theology again.

Kant. At the end of the 18th century, it became clear that science was leading to atheistic materialism and destroying religious belief. For all those who were unable to accept this truth and wanted to preserve their faith, a way out had to be found. Kant then came up with his Critique of Pure Reason, in which he declared that he had discovered limits to Reason that would allow one to “ cut the roots of materialism, determinism, atheism, and the unbelief of free-thinkers . ” ³⁵⁶In this, Kant was no different from Bishop Berkeley, who had already written: “ If these principles are accepted and regarded as true, it follows that atheism and skepticism are at once completely destroyed . ” ³⁵⁷Kant reveals his intentions even more clearly when he explains that he had to “ suppress knowledge in order to substitute belief for it , ” ³⁵⁸because “ a reasonable faith, the only one possible to us, will be deemed sufficient (perhaps even more salutary than knowledge) for our needs . ” ³⁵⁹Thus, Kant concludes his major work by affirming that he has established a “ bulwark ” , so that human Reason is “ bridled ” and that the world be preserved “ devastations which otherwise a speculative reason would cause in religion . ” ³⁶⁰He emphasizes that “ Nor is it a service of little importance that [his work] renders to theology, since it frees it from the judgment of dogmatic speculation, and places it in perfect security against all attacks from these kinds of adversaries . ” ³⁶¹“ The belief in a God and in another world is so closely linked to my moral disposition that just as little am I exposed to losing this disposition, just as little have I to fear that this belief could ever be taken from me [...] There remains enough resources for [man] to fear a divine being and a future. For all that is required for this is that he cannot in any case put forward the certainty that there is no God, nor any future life . ” ³⁶²

We can therefore understand why Nietzsche exclaimed: “ **Kant's success is only a theologian's success .** ” ³⁶³Kant was the inventor of a “ **back door philosophy** ” ³⁶⁴in order to be able to “ **return to God** ” ³⁶⁵. He will have been only a delayer . Alain Boyer also notes that “ **Kant is not**

quite the Aufklärer that we often imagine, the precursor of republican secularism, the most modern of all classical philosophers, ahead of his time... The recurrence of the religious theme and the question of the relationship between science and faith is so flagrant in him that I will perhaps be allowed to see him more as a spirit of the Grand Siècle, that of Louis XIV, than as a citizen of that of the Enlightenment... Thus comparing him to a Blaise Pascal does not seem to me to be so incongruous as that ” ³⁶⁶.

Kant states that “ the concepts of reality, substance, causality, and even necessity are empty labels when one ventures to leave the field that corresponds to the senses ³⁶⁷.” “The principle of causality applies to things only in the first sense, that is, insofar as they are objects of experience, while in the second sense (reality not perceived by our senses), these same things are not subject to it . ” ³⁶⁸To support such assertions, Kant’s great argument is the so-called contradictions of pure Reason. Like the sophists, Kant claims to be able to prove a thesis and its opposite, in order to illustrate the limits of Reason. In his first antinomy, he asserts that one can demonstrate both that the universe is eternal and that it had a beginning. Except that when he wants to prove that the universe cannot have existed forever, he only tells us that an eternal universe would imply an infinite series in the past which he declares impossible to complete, like the Thomists. ³⁶⁹. Yes, it is impossible to traverse an infinite series in a finite time, but this does not pose a problem if time is infinite! Kant’s argument in fact amounts to denying the notion of a half-line (bounded like a segment at one end, but infinite on the other side), an elementary geometric concept, perfectly valid, which can represent time in an eternal universe. Kantian pseudo-demonstration of the so-called limits of Pure Reason therefore rests solely on theologian’s sophisms. The logician Bertrand Russell analyzed and denounced the numerous errors and inadequacies of Kantian antinomies ³⁷⁰, and also remarkably pointed out that by putting the observer back at the center, Kant in no way brings about a Copernican revolution, but on the contrary realizes a “ **Ptolemaic counter-revolution** . ” ³⁷¹Indeed, Kant is also famous for having given nobility to the integral spiritualism initiated by Berkeley and Leibniz, which he perfected to protect himself from what he called “ the materialist danger ” ³⁷²and declared: “if I suppress the thinking subject, the whole world of bodies

must disappear ” ³⁷³. However, rather than claiming to be part of the old spiritualism, the word “idealism” is now used instead, but this conception “ from whatever point of view one considers it, is nothing other than spiritualism itself ” ³⁷⁴.

Having rejected Universal Reason, Kant is now free to do what he himself calls “ philosophical theology ” ³⁷⁵ to restore a “ moral theology ” ³⁷⁶. Against the tradition that bases the desire to do good on the development of self-love (Democritus, Marcus Aurelius, Rousseau), in Kant morality is based on a secularized form of submission to the god of the Bible: “ respect for the moral law is the representation of a value that is detrimental to my self-love. Consequently, it is something that [presents an analogy with an object of inclination and fear] ” ³⁷⁷. Kant introduces a forceful return of the commandment of God through the concept of the categorical imperative, which is intended to be an absolute and incomprehensible order. Kant affirms in fact that the only thing we can understand about the categorical imperative is its “ incomprehensibility ” ³⁷⁸. He concludes under the starry sky, rejoicing that “ the spectacle of an innumerable multitude of worlds annihilates, so to speak, my importance ” ³⁷⁹, a feeling of humility inverse to the feeling of inner glory which founds the virtue of the wise man in Spinoza.

Nietzsche wrote: “ How could anyone not feel to what extent Kant’s categorical imperative endangers life? It was the theological instinct, and it alone, that took up its defense.... An action to which the instinct of life compels us finds in the pleasure it gives the proof that it is a right action; and this nihilist with dogmatically Christian entrails made pleasure an objection... What destroys more quickly than working, thinking, feeling without inner necessity, without a deeply personal choice, without pleasure, like an automaton driven by “duty”? It is quite simply the recipe for decadence, and even for idiocy... Kant became an idiot from it. And he was Goethe’s contemporary! And this fatal spider passed – and still passes! – for the German philosopher par excellence ! ”³⁸⁰

After having re-established morality on religious belief and blind obedience to the law, Kant re-establishes the theological-political: “ the origin of supreme power is unfathomable for the people who are subject to it... all authority comes from God ” ³⁸¹ and justifies biblical sacrifices: “ crime cannot remain unpunished; if punishment does not strike the

criminal, it is his descendants who will have to pay... the debt of sin must be paid, even if a perfectly innocent person had to offer himself as an expiatory victim for this . ”³⁸²

Hegel. Following the political failure of the French Revolution, theologians took advantage of the situation to rebuild themselves. After religious training , Georg Hegel entered philosophy with an esoteric thesis in which he claimed to justify with numerology why the solar system must, according to him, have precisely 7 planets... except that we know of 8 today. Hegel's philosophy of nature is riddled with aberrations of this kind. Also, when Hegel tells us that " the real is rational " ³⁸³, we must on the contrary understand that he wants to inculcate in us that it is not, while removing from us the words ³⁸⁴that would allow us to oppose his substitution of logical Causality by theological Causality. Hegel similarly imposed a fallacious interpretation of Spinoza (and also of Democritus), which seeks to spiritualize him and to erase the importance of singular things in favor of the sole totality ³⁸⁵.

Hegel conceives of his system as a “ theodicy ,” ³⁸⁶that is, an attempt to explain evil despite the existence of the good, all-powerful God. By giving evil a necessary function in the divine plan, theodicy results in a truly diabolical doctrine that sanctifies all the criminals of history and justifies the works of the devil as having always been, at bottom, only the will of God ³⁸⁷. On the contrary, our romantic-heroic idealism overcomes suffering to obtain a greater good (Epicurus, Bruno), and generates an inflexible determination capable at times of conceding a heavy sacrifice to obtain victory (ancient Rome; J. Moulin; W. Churchill). We fight evil, without granting it a necessary function, and therefore reject the theological-fatalistic Satanism conveyed by theodicies that serves to justify all atrocities and the worst forms of slavery ³⁸⁸.

To impose his views, Hegel's great coup was to transpose God's will into history (" the cunning of Reason "), in fact only reintroducing the old belief that the good god manipulates the inner thoughts of men, hides behind all events and guides destiny ³⁸⁹. I leave the conclusion to Ludwig Feuerbach, one of his disciples, who later became very critical: " unless one abandons Hegel's philosophy, one does not abandon

theology " (Provisional Theses with a View to a Reform of Philosophy).

Marx, the false materialist. In his doctoral thesis on Democritus and Epicurus, Karl Marx rejects Democritus's " absolute matter " for a so-called " world of appearances " (II,3). in Epicurus, a false interpretation of Epicureanism, in fact only motivated by a desire to distort authentic materialism to transform it into spiritualism. Marx concludes in fact that “ the atom is nothing other than the natural form of abstract, singular self-consciousness ” (II, IV) . This bias towards absurdities of Hegelian inspiration and the spiritualist impasse to which they lead reappears when Marx addresses the question of the origins of man:

“ To the question: who engendered the first man and nature in general? I can only answer you: your question is itself a product of abstraction. Ask yourself how you arrive at this question; ask yourself if your question is not posed from a point of view to which I cannot answer because it is absurd? Ask yourself if this progression exists as such for reasonable thought? If you pose the question of the creation of nature and man, then you are abstracting from man and nature. You pose them as not existing and yet you want me to demonstrate to you that they exist. I say to you then: abandon your abstraction and you will also abandon your question, or if you want to stick to your abstraction, be consistent, and if, although you think of man and nature as not existing you still think, then think of yourself as not existing, since you are also nature and Man. Do not think, do not question me, because as soon as you think and question me, your way of abstracting from the being of nature and man makes no sense. Or are you so selfish that you posit everything as nothing and want to be yourself?

You can reply to me: I do not want to posit the nothingness of nature, etc.; I ask you the question of the act of its birth as I question the anatomist about bone formations, etc. But, for the socialist man, all that is called universal history is nothing other than the generation of man by human work, the becoming of nature for man; he therefore has the evident and irrefutable proof of his generation by himself, of the process of his birth ³⁹⁰.

Although they claimed to be materialists, Marx, Engels and many Marxists in fact remained locked into Hegelian spiritualism ³⁹¹and its “

philosophy of history which is nothing other than the theology of secularized history ”³⁹². Their rejection of the biological origin of human beings later led to the rejection of the existence of genes in chromosomes (Lysenko affair in the Soviet Union). This denial of nature led them to an anti-humanism which opened the way to totalitarianism. Indeed, Marx rejected Feuerbach ’s naturalist materialism because it recognized an essence in “ the isolated human individual ”. On the contrary, Marx asserted that “ the human essence is not [...] inherent in the singular individual, but that it is the totality of social relations ”³⁹³ and concluded that “ it is not the consciousness of men which determines their existence, it is on the contrary their social existence which determines their consciousness ”³⁹⁴.

Schopenhauer. Explicitly rejecting universal Reason, Arthur Schopenhauer, on the contrary, bases his doctrine on the principle of limited Reason: “ My dissertation on the principle of Reason has precisely the aim of establishing that... the object perpetually presupposes the subject as its necessary correlative: the latter therefore always remains outside the jurisdiction of the principle of Reason... It is necessary above all to have understood, with the help of this writing, what the principle of Sufficient Reason is, what it signifies, to what it extends and to what it does not apply, and finally that it does not pre-exist before all things, in such a way that the whole world would exist only as a consequence of this principle and in conformity with it . ”³⁹⁵

Schopenhauer sees himself as the successor to Kant's spiritualism. However, aware of the problems engendered by this conception, he attempts to achieve a transcendence by admitting that “ the knowing subject is a product of matter ”, while continuing to deny the existence of a material world external to consciousness: “ no object without a subject ” “the hypothesis of an external world existing outside of consciousness and independently of it, is profoundly absurd ”³⁹⁶. He thus offers us a supposedly subtle synthesis between spiritualism and materialism, but which, in the absence of a decisive element to support the coherence of such an unintelligible curiosity, is only a hidden contradiction. Assuming the consequences of his spiritualist idealism, he excludes the possibility of geological events having preceded all life on Earth³⁹⁷.

For Schopenhauer, reality is governed by a mysterious vitalist force that he calls “ will ” . He tells us about it: “ will will never be understood. It will never be reduced to anything else, it can never be explained by anything else. Indeed, it alone is the inexplicable motive of all things ” ³⁹⁸. This pseudo-god is therefore only a new variant of the uncaused cause. In the same vein, Schopenhauer asserts the inability of science to grasp the bottom of things. According to him, phenomena are irreducible and cannot be reduced to more general laws, here joining the positivism of Auguste Comte. In the 20th century, science nevertheless achieved the concrete overcoming of practically all the impossibilities exposed by these pseudo-philosophers of the 19th century. At the same time, Schopenhauer strongly believed in magic, spiritualism, animal magnetism , the apparitions of ghosts... and saw in these superstitions “ confirmations ” of his doctrine (Memoirs on the occult sciences; Essay on apparitions and the facts related to them).

Despite these strong whiffs of obscurantism, Schopenhauer shows a certain lucidity towards what his contemporaries, whom he quite rightly describes as “ philosophers ” , are hiding, noting that “ theological motives exercise a secret influence on a good number of them , ” ³⁹⁹and denounces the fact that “ The philosophical effort has consisted, for nearly fifty years, of all sorts of attempts to gently introduce theology . ” ⁴⁰⁰In this, he announces Nietzsche...

The condemnation of Nietzsche. “ The Germans will understand me without difficulty if I say that philosophy is corrupted by the blood of a theologian... German philosophy is basically a hidden theology... Kant, just like Luther, just like Leibniz, was an obstacle to German probity, which was already uncertain . ” “ ⁴⁰¹The Germans have only inscribed in intellectual history dubious names, they have never produced anything but unconscious forgers (this word applies to Fichte, Schelling, Schopenhauer, Hegel, Schleiermacher, just as much as to Kant and Leibniz) . ” ⁴⁰²

“ I have encountered the theological instinct of arrogance wherever one claims to be an “idealist” (“idealist” here means spiritualist) , wherever in the name of a higher origin one claims to have the right to consider reality from above and from afar... The idealist, just like the priest, has in his hands all the great ideas, and he plays with them

with condescending contempt against “intelligence,” the “senses,” “honors,” “well-being,” “science”: he feels all this beneath him, like harmful and tempting forces, above which “the spirit” hovers like a pure solipsism of the for-itself... I have brought this theological instinct to light almost everywhere: it is the most widespread, the most properly subterranean form of falsehood in the world. What a theologian feels to be true must necessarily be false: this is an almost infallible criterion of truth. ”⁴⁰³

“ To separate the world into a 'real' world and a world of 'appearances,' either in the manner of Christianity or in the manner of Kant (a perfidious Christian, in the end), is only a suggestion of decadence, a symptom of declining life. ”⁴⁰⁴

“ Plato has deviated from all the fundamental instincts of the Hellenes, I find him so imbued with morality, so Christian before the letter... I am tempted to use with regard to the whole Plato phenomenon, rather than any other epithet, that of "high humbug" or, if you prefer, idealism... Plato is cowardly in the face of reality, consequently he takes refuge in the ideal ("ideal" in fact means spiritualism here) ”⁴⁰⁵.

“ Since Plato, all theologians and philosophers have followed the same path . ” “⁴⁰⁶I am of the opinion that all the masters and leaders of humanity, all theologians, were all equally decadent... Zarathustra is more sincere than any other thinker. His doctrine, and his doctrine alone, has sincerity as its supreme virtue, that is to say, the opposite of the cowardice of the “idealists” who flee before reality . ”⁴⁰⁷

Thus, Friedrich Nietzsche is certainly the author who most clearly denounced that what is usually presented to us as the "great philosophers" is in fact nothing more than a bunch of theologians. Nietzsche's name has now become famous. Has his criticism been heard and heeded? Let us examine the great names in philosophy after him, and see if the corruption of philosophy by spiritualism and theology has finally ceased...

Bergson. Rather than attempting to resist the advances of scientific materialism, Bergson is one of the adversaries who pretend to accept the new balance of power in order to better reconstitute themselves within the enemy. Thus, Bergson will never cease to try to find spiritual qualities in matter. Instead of foolishly passing for a

reactionary, he wants to appear as the one who reveals “ the vital impulse ,” but the highest intensity of this impulse would be, according to him, reached by “ Christian mysticism ” ⁴⁰⁸! Bergson will finally admit the conclusion of his journey: “ my reflections have brought me closer and closer to Catholicism ” (1937 will). He also distinguished himself with a work against Einstein’s relativity (Duration and Simultaneity).

his pamphlet, George Politzer concludes : “Bergsonism was produced by that 19th-century movement which, in the face of the definitive perfection of materialism, represents the offensive return of idealism... [Bergson] is one of those who wanted to liquidate materialism in favor of Christianity... the army of priests could only reconstitute itself in complete safety. Neo-Kantianism was its first line of defense, Bergsonism the second . ”⁴⁰⁹

Wittgenstein. Ludwig Wittgenstein's goal is quite similar to Kant's. Wittgenstein asserts that there are limits to language to silence any critical discussion of religious belief. This does not, however, prevent him from asserting: “ Ethics cannot be stated. Ethics is transcendental ” “ There is certainly something unspeakable. It shows itself, it is the mystical ” “ What is mystical is not how the world is, but the fact that it is ” “The meaning of the world must be found outside the world ” ⁴¹⁰. Logical positivism and the linguistic turn in analytical philosophy have not always been a springboard towards greater rationality, but too often a way of suggesting mystical-religious ideas, with only an appearance of scientificity.

Phenomenology. At the beginning of the 20th century, Edmond Husserl created a new variant of spiritualism called phenomenology: “ the existence of nature cannot be the condition of the existence of consciousness, since nature itself is a correlate of consciousness ” ⁴¹¹. The spiritualist arbitrariness of the phenomenologists was responsible for a lowering of thought that delighted Jean-Paul Sartre, who found on the contrary that “ modern thought has made considerable progress in reducing the existent to the series of appearances that manifest it ” ⁴¹², illustrating again that spiritualism is not only the prerogative of crypto-theologians, but often also of Marxist ideologues. With Levinas, Ricœur, Henry, Marion... we then witnessed the “ theological turn of

phenomenology ” ⁴¹³, which in fact rejoins the initial anti-rationalist inspiration. When asked what the fundamental problem of philosophy was, Husserl had already replied: “ But the problem of God, of course!” “ A man’s life is nothing other than a path to God. I tried to reach the goal without the idea of theology, its proofs, its methods; in other words, I wanted to reach God without God. I had to eliminate God from my scientific thinking in order to open the way for those who did not know the sure road to faith through the Church. I am aware of the danger involved in such a procedure and of the risk I myself would have run if I had not felt deeply connected to God and a Christian from the bottom of my heart . ”⁴¹⁴

For the most important representative of this school, the biography is particularly instructive. Martin Heidegger studied Catholic theology and was destined for a chair in “Catholic philosophy.” He considered himself a “ Christian theologian ” ⁴¹⁵and admitted that “ without this theological background, I would never have arrived on my path of thought . ” ⁴¹⁶The culmination of the anti-enlightenment that led to Nazism ⁴¹⁷, with it we find all the fundamentals of the theological reaction against modernity: condemnation of Cartesian rationalism, progress, science, materialist thinkers and even humanism.

The recipe of the enemies of Reason has almost always been the same: it is necessary to break the unity of rationality that gives it its universality. Rather than attacking head-on, it is more effective to proceed in a sneaky manner by pretending to reveal a subtlety that was previously ignored. To escape Democritean rationalism, Plato distinguished two types of supposedly totally independent causes (the intellectual cause and the material cause) and Aristotle invented four ⁴¹⁸. Similarly, to escape Cartesian and Spinozist rationalism, Jacobi affirmed the existence of a fundamental distinction between intuitive Reason (vernunft) and understanding (verstand), while Leibniz, Wolf and Schopenhauer absolutely distinguished the cause of reason ⁴¹⁹. Heidegger's separation of being and beings was only yet another way of opposing the universality of Reason. Indeed, according to Heidegger, “ only being has a reason [...] being, on the contrary, remains without reason, that is to say, now without why ” ⁴²⁰. Heidegger thus wages a “ knife-drawn war on rationalism ” ⁴²¹, and convinces himself that “ science does not think ” ⁴²².

Deconstructive Relativism. Destabilized by their failures, Judeo-Christians and neo-Marxists found in relativism the space for survival and a new way to free themselves from Reason. In the 1920s, Einstein's theory of relativity was so often invoked to promote cultural relativism that this misuse almost made Einstein regret not having called it the theory of invariants ⁴²³. In order to destroy classical values, the Frankfurt School attacked Reason, which it deemed “ dictatorial, totalitarian , ” ⁴²⁴ while postmodernists also rejected its primacy and saw it as a macho norm to be overcome. The relativist ideology, which had already spread in artistic circles and abolished beauty in art (Picasso, Duchamp, Dali, etc.), took power in the West around 1960-1970 to destroy truth. This degeneration reaches its climax with Michel Foucault, who joins forces with the theologians in condemning “ Western Reason , ” ⁴²⁵ rehabilitating madness and reopening the ball of intellectual impostures ⁴²⁶. There, the Judeo-Christians and the neo-Marxists reconcile themselves with the human rights they previously condemned ⁴²⁷, and pervert the legacy of the Enlightenment.

The legal equality proclaimed by Article I ^{of} the Rights of Man of 1789 does not admit social distinctions between citizens other than those justified by real differences linked to common utility; but this conception inspired by cosmic materialism and Roman meritocracy ⁴²⁸ is therefore not an absolute egalitarianism of individuals in every respect which, if it could be accomplished, would be a generalized standardization, which would produce an uninteresting world. However, the spiritual-Christian-neo-Marxist reinterpretation of the rights of man has propagated the lie of an absolute equality between beings, and this new religion rejects, against science, the existence of races, the role of genetics in sexual orientation, proclaims the equality of all civilizations in history, relativizes all truth to culture, and abolishes the preeminence of Reason leading to the indifferentiation of man and animal. To achieve its egalitarian utopias, societal Marxism denies the existence of average statistical gaps between sexes, races, social classes, or any other type of human group. And in the face of the differences that are nonetheless observed, the egalitarian lie now fuels a delusion of persecution, instead of explaining that certain differences are partly due to natural biological variations and that we must seek to progress, including as groups,

through family policies that slightly favor the birth rate of the best, in order to gently pursue the progressive improvement of the different components of humanity.

Similarly, the universalism of Reason is first and foremost a universalism of the philosopher who discovers what is true in nature and in humanity, beyond his or her culture of origin. This creates a community of understanding and moral values between philosopher-scientists from diverse backgrounds, and promotes understanding between different peoples; but this philosophical universalism therefore has no meaning applied to non-philosophers, who have not elevated themselves to the cult of Reason, but remain essentially structured by their cultural particularities and their religion of origin. Consequently, relativistic universalism, with its multiculturalist chaos, is a distortion of philosophical universalism and a renunciation of the Enlightenment struggle to free men from the grip of religions.

Since Kant, Christianity has become secularized. Having become invisible, it nevertheless remains omnipresent in the West. In the absence of a true pagan renaissance to refound a religion of intelligence, Judeo-Christian values persist and fuel unreason. After the political failure of the anti-Enlightenment reactionaries, who provoked the first two world wars, the right wing of Christianity certainly collapsed, but without the true Enlightenment taking power, it is mechanically the entire left wing of Christianity that found itself favored. The old authoritarian right-wing values of the church (blind faith, belief, obedience, intolerance of other gods, theocracy, dogmatic absolutism, anti-progress Platonism, castes, proselytism via birth rate) give way to the evangelical leftist madness of the hippies and the wokes (suicidal pacifism, hatred of power and wealth, communist egalitarianism, monastic antinatalism, immigrationism, inversion of values, victim heroism, eternal guilt, cultural Marxism extending the class struggle to races, sexes, genders...) ⁴²⁹.

In the 21st century, hatred of Reason has caused, for a second time, the decline of the West. The situation recalls that described by Celsus in the 2nd century, who was aware that the Roman Empire derived its ancient power from the superiority of “ **Greek Reason** ” ⁴³⁰ over barbaric irrationalism, but who feared the future fall of his civilization if an end was not quickly put to the spread of Christianity. The West of the Renaissance and the Enlightenment, previously a beacon

of progress in rationality in the world, has allowed itself to be gangrened from within by the poison of generalized relativism and is heading towards decadence or dissolution, before perhaps a rebound or somewhere, one day, another renaissance...

The deplorable state of philosophy. Hatred of Reason, religions, and spiritualism have been rotting philosophy for millennia, and I'm realistic, none of this is going to disappear anytime soon. I only hope that we can gain maturity by dissociating philosophy from theology. For centuries, chemistry was under the influence of alchemists. For millennia, astronomy was contaminated by astrology, until the 17th century, when we finally managed to dissociate them, allowing these disciplines to exist separately, despite the presence of common points. As long as theologians are considered philosophers, it is because we do not know how to differentiate between wise men and charlatans. As long as the enemies of Reason continue to be considered great minds, there will be no possible renaissance for true philosophy. I hope that more rigor will come into our way of viewing philosophy. The worst danger that threatens an ideal is not so much that it is fought against, nor even that it is defeated at some point in history, because even in that case, it at least continues to exist as an ideal. The worst that can happen to the philosophical ideal is to continue to make people believe that it is magnificently represented by figures like Plato or Kant, when in fact it was precisely defeated, long ago, by those theologians disguised as philosophers who skillfully pretended to embody this ideal in order to seize it, distance it from the honest quest for truth, and repurpose it to support their religious beliefs.

In addition to this age-old problem of denaturation by the irrational, the general lowering of the ambitions of the new intellectuals has led to the erasure of philosophy. Since our moderns have given up thinking about the substance of things, their works are at best psychology, sociology, political economy... Plato and Kant are clearly counter-enlightenment, but they at least had the interest of provoking our reflection on the big questions, even if they were only able to bring clarification from their religious prejudices.

Collection of Quotations

Sources of Inspiration

Poems, novels, music, films... have inspired the writing of this essay. Also, I have sometimes integrated various formulas into the main text, either in their original version, or after having more or less rewritten them, because of their own quality, but also sometimes as a mark of gratitude, for the beautiful moments that these works have given me.

“ Honor what is most powerful in the world: it is what governs all things and penetrates them all. Likewise, honor also what is most powerful in you because this is of the same order as the universal principle ” “ This Genius, [the inner god] is the understanding and reason of each one ” ⁴³¹Emperor Marcus Aurelius. Star Wars offers one of the best representations of this pagan wisdom in popular culture. The Jedi Knights are very inspired by the Stoics. The Jedi is both a sage and a hero, both a fighter and a philosopher, who unites action and contemplation. Yoda speaks like the ancient Romans. He ends all his sentences with the verb at the end. The religion of the “Force” is a vitalist pantheism. It is a power that permeates the entire universe, but which we also have within ourselves and which allows us to fulfill ourselves. Substitute “Force” for Reason and you arrive at my philosophy.

“ If one recognizes the supremacy of Reason and applies it consistently, all else follows ” ⁴³²Ayn Rand.

“ I spread my wings confidently in the air and fearing no obstacle, neither crystal nor glass, I split the heavens and rise to infinity. And while from my globe I spring forth toward other worlds and penetrate ever deeper through the ethereal fields, I leave behind me what men see from afar. ” ⁴³³Giordano Bruno.

“ By the power of truth, in my lifetime, I conquered the universe ” motto of Faust, taken up in “V for Vendetta” .

“ What I offer you is a piece of paradise ” Theater of Salvation, Edguy.

“ Natural is miraculous ”, we must know how to look at it “ with infinite gratitude towards life which has created so much perfect beauty ” René Barjavel, The Night of Time , Païkan and Eléa at the edge of the lake before the end of the world .

“ All sects must merge themselves into the universal religion of nature .” “ The true priest of the supreme being is nature, its temple, the universe, its cult, virtue .” ⁴³⁴Maximilien Robespierre.

“ To replace religion, philosophy must, as philosophy, become religion .” ⁴³⁵Ludwig Feuerbach.

“ Seize the day ” ⁴³⁶[Carpe Diem] Horace, poet influenced by Epicureanism. This formula was taken up by Pierre de Ronsard in his Sonnets for Helen: “ Pick today the roses of life ,” but its meaning has since often been distorted into an anxious hedonism, fleeing reality, because of the fear of death. In Epicurean philosophy, on the contrary, it was an invitation to magnify one’s present joys after having rightly become aware of one’s finitude and the mortality of the world, as it is correctly used in the apocalyptic film “The Army of the 12 Monkeys”: “ You who will no longer have tomorrow, you postpone joy, but life perishes by delay . ”⁴³⁷

“ It is my quest to follow this star... to reach the unreachable star ” ⁴³⁸lyrics from “The Quest”.

“ I feed on my high enterprise; and although the soul does not reach the desired end and is consumed by so much zeal, it is enough that it burns in such a noble fire ” ⁴³⁹Giordano Bruno. At the end of the Ethics, Spinoza admits the immense difficulty of achieving wisdom, but retorts that “ it is enough that it is not impossible to find it ” and certainly “ everything that is beautiful is as difficult as it is rare ”.

“ It is ultimately one's desire that one loves ” ⁴⁴⁰Friedrich Nietzsche. We find this idealized internalization of desire in Epicurus, of whom Lucian of Samosata said that he was ultimately “ a man who took pleasure in pleasure itself ” ⁴⁴¹. The soul of the wise Epicurean knows how to retain pleasure; it preserves it, amplifies it internally to the point of becoming less dependent on external sources of pleasure and can now rely on little to maintain itself continuously in pleasure.

“ Among all the passions that relate to the soul, insofar as it acts, there is none that does not relate to desire or joy . ” ⁴⁴²Spinoza rehabilitates desire and joy. On the contrary, for the Stoic Epictetus “ freedom is not obtained by the satisfaction of desire, but by the destruction of desire ”; “ happiness and desire cannot be found together . ” ⁴⁴³Similarly, Buddha condemns desire and the pursuit of pleasures and finds liberation in the extinction of the self (nirvana).

“ Be happy for a moment, this moment is your life ” ⁴⁴⁴Omar Khayyâm, poet-scientist influenced, like al-Razi, by the epicureanism transmitted by the last pagans who had fled the Christian West to take refuge in Harran (Carrhae) and Gundishapur, in Persia.

“ I think that in another time, someone will remember us ” Sappho, Greek lyric poet (I, 147) .

“ There has never been a time in the past when we did not exist, and there will never be a future when we cease to be. ” ⁴⁴⁵Krishna, presenting himself as an avatar of the god Vishnu and the Indian philosopher Kapila: “ My appearance in this world is for the purpose of explaining the philosophy of Sankhya.... This path of self-realization, which is difficult to understand, has been lost in the course of time. Understand that I have taken this body of Kapila to present and explain this philosophy again to human society . ”⁴⁴⁶

“ No one knows, but a god lives there .” To become aware of and honor one's inner Genius is to remain heroically faithful to the eternal and immutably true idea within oneself, which makes one “ happy in adversity, calm in the midst of storms; [and elevates one to the point] of seeing men from above and gods at one's level ” ⁴⁴⁷Seneca.

“ It is a prejudice that I am a human being. But I have often lived among human beings. ” “ The world is transfigured, for God is on earth. The heavens rejoice in my presence. ” ⁴⁴⁸Nietzsche.

“ Everything in you resonates happiness ” Muse lyrics of “Bliss”.

“ It is only to the individual that a soul has been given ” Einstein, Science and Religion (IO p43) .

“ I always start by composing the melody first ” ⁴⁴⁹Nobuo Uematsu. A melody conveys a feeling, without being anything other than a “geometric” relationship between notes that can be played by different instruments, and be accompanied by more or less harmonious arrangements. The astonishing ease with which music interacts with the soul is an observation once used by the Pythagorean school to suppose the existence of structural similarities between musical scores and our cerebral architecture.

“ Gentle and affectionate passions are born from self-love ” Jean-Jacques Rousseau, Emile or On Education, IV.

“ You have no respect for yourself, for you place your happiness in the souls of others. ” “ Nothing is advantageous that makes you lose

respect for yourself. ” “ Be like a promontory against which the waves continually break. ” ⁴⁵⁰Emperor Marcus Aurelius.

“ In psychotherapy, we prefer the shock that cleanses to the lie that poisons .” Barjavel, *The Night of Time*, Simon at the awakening of Elea .

“ If what you wanted were honest or good, and if your tongue did not move to say something bad, shame would not cover your eyes, but you would speak without beating around the bush ” Sappho to Alcaeus (II, 137) .

“ Vices come from weakness; they perish with it and are not corrected.” “I left all these weaknesses behind me; I saw only the truth in the universe, and I spoke it. ” ⁴⁵¹Louis Saint-Just.

“ Only he who possesses complete sincerity will fully develop his nature... Now capable of giving full development to everything, he cooperates in the work of transformation and life of heaven and earth ” Confucius, *Tchoung young*, *Zhongyong*, 22 .

“ He who does not believe in himself always lies ” ⁴⁵²Nietzsche.

“ Become what you are ” ⁴⁵³Pindar.

“ My heart will not submit to any mortal ” ⁴⁵⁴Giordano Bruno.

“ Act as if it were impossible to fail ” statement by Dorothea Brande, echoed by Winston Churchill.

“ No destiny but what we do ” maxim from James Cameron's film “Terminator 2”.

“ I will take fate by the throat. It will not make me bend, it will not get the better of me. ” Ludwig van Beethoven (to Franz Wegeler) .

“ Do you hear Zeus? I challenge you and all the gods .” ⁴⁵⁵Heracles.

“ If you do not want to be destinies, inexorable: how could you one day win with me? ” ⁴⁵⁶Nietzsche.

“ The man who is just and firm in his resolutions, neither the violence of the street, nor the threatening face of a tyrant, nor the great thundering hand of Jupiter will shake or damage his spirit. The world may break and collapse, its debris will strike him without frightening him ” ⁴⁵⁷Horace.

“ You can destroy everything around us, the stars and the planets, but you will never destroy me .” ⁴⁵⁸Goku. I see in this passage of this Japanese manga a representation of the indestructible pagan god who rules over the elements, causes lightning, sweeps away the clouds, makes

the earth and the oceans tremble... his clothes flutter carried by the wind, but his body remains inflexible. A similar expression of this feeling of invincibility is found in the poem *Invictus*, by William Ernest Henley, dear to Nelson Mandela.

“ I despise the dust that composes me and that speaks to you; one can persecute it and make this dust die! But I defy that one tear from me this independent life that I have given myself in the centuries and in the heavens ” ⁴⁵⁹Louis Saint-Just.

“ Just like the heroic lover, by rising on the wings of the intellect, I transform myself into a divinity from a lower creature .” Giordano Bruno here expounds what Spinoza would call “the intellectual love of God,” and what I call the Love of Universal Reason. Bruno identified the impulse of contemplative and speculative philosophy with an amorous impulse that pushes one to unite with the immanent divinity and saw the “ ultimate happiness of man ” in this “ completely heroic and divine ” intellectual love. According to him, this “ rational impulse ” metamorphoses “ to the point of no longer feeling the fear of death, nor suffering from bodily pain, nor feeling the obstacles to pleasure; for hope, joy, and the delights of the higher spirit gather such strength that they abolish all the passions that can engender doubt, pain, and sadness .” Now, “ even the sun shines with less brilliance than the one who makes me the most glorious god in the great creation of the worlds . ”⁴⁶⁰

We have become “ equal to the blessed gods ” ⁴⁶¹Sappho and Epicurus.

“ He who knows his nature becomes god ,” is the inscription on the door knocker of the meeting place of the Sabaeen sect of Harran, the last remnant of Greco-Roman paganism in the 11th century. This formula is a response to the “know thyself” inscription engraved on the pediment of the temple of the oracle at Delphi. It comes from Orphism, which imagines man as a fallen god who has forgotten who he was, but who, through initiation, can regain awareness of his lost divinity.

Einstein, God and Cosmic Religiosity

Many claim that Einstein believed in God. With the help of a few quotations, I first show that Einstein did not believe in God, rejected spiritualism, mysticism, providence, sacred books, religious institutions, and condemned attempts to base morality on belief. Second, I show what he called his “cosmic religiosity.”

“The word God is for me nothing more than the expression and product of human weaknesses, the Bible a collection of legends, certainly honorable but primitive which are nevertheless rather childish. No interpretation, however subtle, can in my opinion change that.”⁴⁶²

“What you have read about my religious beliefs is a lie, a lie that is systematically repeated. I do not believe in a personal God and have never said otherwise, but have made it clear ⁴⁶³.” “Religious truth means nothing to me ⁴⁶⁴.” “From the priest’s point of view, I am, of course, and always have been an atheist.”⁴⁶⁵

“The answer to your questions would fill books. I can only say in a few words that I have exactly the same opinion as Spinoza and that, as a convinced determinist, I have no sympathy for the monotheistic conception.”⁴⁶⁶

“Anyone who is convinced of the causal law governing all events cannot possibly contemplate the idea of a being intervening in the cosmic process.” “I cannot imagine a God who rewards and punishes the object of his creation. I cannot imagine a God who would regulate his will according to the experience of mine. I will not and cannot conceive of a being who would survive the death of his body. If such ideas develop in a mind, I judge it weak, fearful, and stupidly selfish.”⁴⁶⁷

“Why do you write to me that God should punish the English? I have no particular connection with either of them. I only see with great regret that God is punishing many of his children because of their countless stupidities, for which he alone can be held responsible; from my point of view, only his non-existence could excuse him.”⁴⁶⁸

“Through reading popular science books, I quickly came to the conviction that most of the stories in the Bible could not be true. The result was a fanatical orgy of freethinking combined with the impression that young people were being intentionally deceived by the state through lies; it was a crushing feeling. A distrust of any kind of authority resulted from this

experience, a skeptical attitude toward beliefs present in any social environment—an attitude that has never left me since...”⁴⁶⁹

“The mystical tendency of our time, which is particularly evident in the galloping growth of so-called theosophy and spiritualism, is for me nothing more than a symptom of weakness and confusion. Since our inner experience consists of reproductions and combinations of sense impressions, the concept of a soul without a body seems to me to be empty and meaningless.”⁴⁷⁰

“The Jewish God [...] is the temptation to base morality on fear, a deplorable and derisory attitude” ⁴⁷¹“The condition of men would prove pitiful if they were to be subdued by the fear of punishment or by the hope of reward after death”. “The moral behavior of man is effectively based on sympathy and social commitments, it in no way implies a religious basis”.⁴⁷²

“It is quite possible that we can do better things than Jesus, because what is written about him in the Bible is poetically embellished.”⁴⁷³

“As for God, I cannot accept any concept based on the authority of the Church. As I recall, I felt a mass indoctrination there. I do not believe in fear of life, fear of death, or blind faith”⁴⁷⁴. ”

“I am convinced that certain political practices and activities of Catholic organizations are harmful and even dangerous for the community as a whole, here and throughout the world. I mention here only the fight against birth control at a time when overpopulation in various countries has become a serious threat to the health of the populations and a serious obstacle to any attempt to organize peace on this planet.”⁴⁷⁵

“In their struggle for the moral good, those who teach religion must have the stature to renounce the doctrine of a personal God, that is, to renounce that source of fear and hope which in the past placed such vast power in the hands of priests. In their labors, they must make use of those forces which are capable of cultivating the good, the true, and the beautiful in humanity itself. This is, of course, a far more difficult but incomparably nobler task. After teachers of religion have accomplished this indicated process of refinement, they will not fail to acknowledge with joy that true religion has been ennobled and made more profound through scientific knowledge.” [...] “The more the spiritual evolution of humanity advances, the more it seems to me that the path to authentic religiosity lies not in the fear of life, the fear of death, or blind faith, but in the striving for rational knowledge. In this sense, I believe that the priest must become a teacher if he wishes to do justice to its noble educational mission”⁴⁷⁶.

Einstein's God = “necessity arising from logical simplicity”

“What really interests me is whether God had any choice in creating the world, that is, whether the requirement of logical simplicity leaves any degree of freedom or not.”⁴⁷⁷

“It seems to me that the idea of a God in human form is a concept I cannot take seriously. Nor do I feel capable of imagining a will or purpose outside the human sphere. My views are close to Spinoza: admiration for beauty and belief in the logical simplicity of order and harmony, which we can grasp only humbly and imperfectly. I think we must be content with our imperfect knowledge and understanding, and treat moral values and obligations as a purely human problem, the most important human problem.”⁴⁷⁸ “I believe in Spinoza’s God who reveals himself in the harmonious order of what exists, and not in a God who is concerned with the fate and actions of human beings.”⁴⁷⁹

Vocabulary note: as a reminder, there is no moral harmony in nature for Spinoza, nor even aesthetic harmony (Ethics, I, appendix), the word harmony is here to be understood in the particular sense of theoretical physicists. This harmony that Einstein speaks of is just another word to designate mathematical beauty (example Euler’s identity), that is to say logical simplicity. Finally, when Einstein says “I believe in God” we must not see a belief, in the sense of blind faith. His “I believe” only means “I think that”.

the mind/intellect of God = the intelligible order of nature

“The misunderstanding is due to a poor translation of the German text, especially the use of the word ‘mystical’. I have never attributed to Nature a purpose or objective, or anything that could be understood as anthropomorphic. What I see in Nature is a magnificent structure that can be understood only very imperfectly, and which must fill a thinker with the feeling of ‘humility’. This is a true religious feeling that has nothing to do with mysticism.”⁴⁸⁰

Note: The choice of the word humility is clumsy because it introduces a philosophical misinterpretation; but the young Einstein, who wanted to understand God’s thoughts, was not humble. Humility is not a virtue for Spinoza either.

“My understanding of God stems from a deep conviction of a higher rationality that reveals itself in the knowable world. In common parlance, it can be described as 'pantheistic' (Spinoza).”⁴⁸¹

Note: In several other texts addressed to the general public, Einstein begins by recalling that he does not believe in the existence of a “supernatural Being” who intervenes in nature but that he perceives the manifestation of a “Geist”⁴⁸² infinitely superior to that of man who manifests himself through the laws of nature and whom we understand only imperfectly. The term Geist is the source of misleading misinterpretations when it is translated as “spirit” and the meaning is truncated. The expression “higher intelligence” sometimes also used is a vocabulary derived from “the intellect of god” in Spinoza to designate the intelligible order of nature, but strictly speaking there is no intellect of god (there is no will of god, nor goal or end in nature, god is not a consciousness and even less a person or a judge), so these expressions are just metaphors in Spinoza and Einstein to speak of the intelligible order of nature (see, Ethics, I, XVII).

Einstein was criticized for these metaphors, which encouraged his use by believers. When Maurice Solovine discovered these statements, he told him that he did not share his opinions, and Einstein's reaction is interesting. Einstein replied: “I am curious to know to what extent our opinions on religion differ. I cannot imagine that our opinions could fundamentally differ in any way from each other. If so, I probably expressed myself badly.”⁴⁸³ “The fact that the world is intelligible is a miracle [...] we must be content to recognize the “miracle” without there being a legitimate way to go beyond it. I am forced to add this expressly, so that you do not believe that - weakened by age - I have fallen prey to the scourges⁴⁸⁴. ”

Einstein's religion = “Faith in the rational nature of reality”

“I can understand your aversion to the word 'religious' to describe the emotional and psychological attitude most clearly revealed in Spinoza. I have found no better word than 'religious' for faith in the rational nature of reality, which is at least partially accessible to human reason. Once this feeling is lost, science degenerates into uninspired empiricism. I don't give a damn if priests mint it. There is no cure for it.”⁴⁸⁵

“Science can only be created by those who are thoroughly imbued with the aspiration for truth and understanding. The source of this feeling, however, comes from the religious sphere. From it comes the faith in the possibility that the laws valid for the world of existence are rational, that is, comprehensible to reason. I cannot imagine a true scientist without this profound faith. The situation can be expressed by an image: science without religion is lame, religion without science is blind.”⁴⁸⁶

[During his conversation with Tagore, the latter states that beauty and truth are relative]

Einstein: I agree with this conception of beauty but not of truth. I cannot prove to you that I am right, it is my religion... if there is a reality independent of man, there is also a truth dependent on this reality, and in the same way, the negation of the first engenders a negation of the second.

Tagore: If there were to be a truth which has no sensory or rational relation to the mind, then it would remain a nothingness as long as we remain human beings

Einstein: Well, I'm more religious than you!

Note: Similarly, for Spinoza, the religious spirit consists in recognizing the immutable truth of the laws of the physical world, on the contrary "belief in miracles should lead to universal doubt and atheism"⁴⁸⁷.

Einstein's "cosmic religiosity" = "a feeling of awe for the order manifested in the material universe"

"The joy of contemplating and understanding, that is the language that nature speaks to me"⁴⁸⁸. "If there is anything in me that can be called "religious," it would be my boundless admiration for the structures of the universe"⁴⁸⁹. "The religious feeling engendered by the experience of the logical understanding of profound interrelationships is something different from the feeling that is generally called religious. It is more a feeling of admiration for the order that manifests itself in the material universe"⁴⁹⁰.

"The knowledge of the existence of something we cannot penetrate, the manifestation of the deepest rationality and the most radiant beauty, which are accessible to us by our reason only in their most primitive forms - it is this knowledge and this emotion that constitute the truly religious attitude, in this sense, and only in this sense, I am a deeply religious man"⁴⁹¹. "I am a deeply religious non-believer, this is in some way a new form of religion."⁴⁹²

Minds animated by Einstein's "cosmic religiosity" = scientist-philosophers

"The scholar is imbued with the sense of universal Causality"⁴⁹³ "The religious geniuses of every age have distinguished themselves by

this kind of religious feeling (cosmic religiosity), which knows no dogmas, nor God conceived in the image of man, so that there can be no church whose teachings are based on it. Therefore, it is precisely among the heretics of every age that we find men who were filled with the deepest religious feeling and were in many cases regarded by their contemporaries as atheists, sometimes also as saints. From this point of view, men like Democritus, Francis of Assisi and Spinoza are very close to each other. [...] Seriously working scientists are the only deeply religious people⁴⁹⁴.” “As long as you pray to God or ask him for a reward, you are not religious.”⁴⁹⁵

Plato versus Democritus

Through a few quotations, I illustrate how Plato, whom Western culture wrongly presents as the greatest of philosophers, was in fact reacting first against the rationalist and humanist thought of Democritus.

On God and the Origin of the Cosmos

Democritus is an atheist : “The universe is infinite because it is not the work of any demiurge.” DK A-XXXIX

Plato is a believer who wants the establishment of an inquisition tribunal against atheists : “This world [...] was formed by the providence of God, [...] the author made neither two nor an infinite number; only this unique heaven was born and no other will be born” *Timaeus*, 30c-31b “This is the law we will lay down regarding impiety. If anyone is impious, either in word or deed, whoever witnesses it will oppose it and report him to the magistrates. The first among them to be informed will bring him before the court appointed to judge such crimes in accordance with the laws. If a magistrate, after receiving the report, does not act on it, he himself may be prosecuted for impiety by anyone who wishes to avenge the law... the judges will condemn, according to the law, those who are impious by default of judgment, but without bad inclinations or bad morals, to spend at least five years in the house of correction. During this time, no citizen will associate with them, except the magistrates of the night council, who will maintain him for his instruction and the salvation of his soul. When his time in prison is over, if he appears to have become compliant, he will go and live with the virtuous citizens; if he is not, and he is convicted again, he will be punished with death.” *Laws*, Book X

On the Nature of the Soul

Democritus is a materialist : “The body is moved by the soul, but the soul is something corporeal.” DK A-CIVa

Plato is a spiritualist : “God made the soul before the body and superior to the body in age and virtue.” *Timaeus*, 34c. Plato, however, concedes that in his time,

materialism is “a doctrine which most people regard as the most ingenious of all” Laws, X, 888e .

On the nature of reality

Democritus is a materialist realist : “At the origin of all things, there are atoms and the void” DK A1

Plato was a spiritualist who believed that the material world was an illusion : “[Men] take the shadows they see for real objects.” Republic, VII, 515b (allegory of the cave)

Atoms were also called "ideas" by Democritus DK A-LVII, A-CII, A- LXVII.
So Plato reversed Democritus. He replaced material atoms/ideas with the theory of spiritual intelligible forms.

On the sensible-intelligible relationship

“The followers of **Plato** and **Democritus** assumed that only intelligibles are true. But for Democritus, this is because nothing sensible exists by nature, given that atoms, the combination of which forms all things, are by nature devoid of any sensible quality. For Plato, on the other hand, this is because sensible things experience a perpetual becoming, and never truly are.” Sextus Empiricus, Against the Mathematicians VIII, 6 (DK A-LIX).

On life after death

Democritus does not believe in life after death : “Although they are ignorant of the decay of our mortal nature, some men, conscious of the evil deeds with which their lives are filled, miserably spend the time that remains to them in troubles and fear, inventing lying fables about the time that follows death.” DK B-CCXCVII

Plato dreams of life after death : “Death is a shortcut that leads us to the goal (separating the soul from the body)” “If I did not believe that I would find in the other world, first other wise and good gods, then men better than those here, I would be wrong not to be sorry to die” Phaedo, 66b, 63b. & Theaetetus, 176.

On Suicide

Democritus voluntarily ended his life : “Democritus, when the weight of age warned him that the springs of memory were weakening in him, went of his own accord to offer his head to death.” Lucretius, III; DK AI

Plato forbids suicide : “We must not kill ourselves before God imposes the necessity on us.” Phaedo, 62c

On humanism

Democritus is a humanist : “The wise and learned man is the measure of all things.” DK B-CCCIX. Protagoras, a student of Democritus, took up this formula in a relativistic sense: “(any) man is the measure of all things” and Plato replied: “God (transcendent) is the measure of all things” Laws, IV, 716c

Plato speaks and thinks like a theologian : “if God wills” Laws, I, 632nd “let us go to the grace of God” Laws, I, 625c “No one knows except God.” Apology of Socrates, 42a “Submission is just when it is addressed to God, excessive when it is addressed to men. For the wise, God is the law, and for fools it is pleasure.” Letter VIII, 354e-355a “Each living being is an ingenious toy, created by the gods, whether they made it for amusement or had some serious purpose” Laws, I, 644d “Man, as I said above, is only a puppet invented by God” Laws, VII, 803c. Plato uses this theological view as a justification for his political ideas. As a theocrat, he wants men to be subject to the will of God, and to “spend their lives as befits beings who are little more than automatons.” However, as he anticipates the reader’s disapproval, he makes his other character, Megillos, react: “You degrade human nature very low,” but Plato does not withdraw his conclusion: “If I spoke as I did, it was under the impression that the sight of the divinity caused me. I therefore allow you to admit that the human race is not contemptible, if that pleases you, and that it deserves some attention.” Laws, VII, 804b-c.

On pleasure

Democritus calls for measured pleasures : “The happy disposition of the soul is born from the moderation of pleasure and the measure of life.” DK B-CXCI “Moderation increases pleasure, and makes voluptuousness even greater” DK B-CCXI

Plato despises bodily pleasures : “The body is the tomb of the soul.” Gorgias 493a, Cratylus 400c, Phaedrus 250c “True philosophers guard themselves against all

bodily passions, resist them and do not give in to them.” Phaedo, 82b “The soul of the philosopher deeply despises the body, flees from it and seeks to isolate itself within itself” Phaedo, 65c “[It is] to this end that true philosophers, and they alone, ardently and constantly aspire... [the philosopher] trains himself to live in a state as close as possible to death.” Phaedo, 67d.

On Art

Democritus wrote many works on art and music : “On Rhythms and Harmony, On Poetry, On Epic Beauty, On Consonance and Dissonance of the Letters of Homer or On the Accuracy of Verses and Terms, On Song, On Diction” DK AI

Plato wants to exclude artists from his ideal city : “[The artist] is devoid of knowledge or correct opinion as to the beauty and quality of the things he imitates” Republic, X, 602a

On the origin of laws

Democritus considers the law as a contract between men : “Law is an invention of men” DK AI “Laws would not prohibit everyone from living according to their inclinations if people did not wrong each other.” DK B-CCXLV

Plato wants the laws to be seen as a letter from God : “Is it a god, strangers, or a man to whom you refer the establishment of your laws? It is a god, stranger, yes, a god” Laws, I, 624a.

On education

Democritus wants to convince of the good: “The better guide in matters of virtue appears to be the one who uses verbal encouragement and persuasion rather than the compulsion of the law. For he who is turned away from injustice by convention alone is in all probability acting wrongfully in secret, while he who is persuaded by persuasion is in all probability committing nothing reprehensible either in secret or openly” DK B-CLXXXI. & DK B-XLI and B-CCXXXIX.

Plato wants to impose his law by theological-political authority : “Among your laws, so well established, one of the most beautiful is that which forbids young people to seek in them what is good and what is defective; they must agree to say with one voice and with the same heart that they have been

perfectly conceived, since the gods are their authors, and they must in no way tolerate that one speaks otherwise of them before them” Laws, I, 634e “one must boast less of having commanded well than of having obeyed well, first of all the laws, because that is obeying the gods” Laws, VI, 762e

On virtue

Democritus invites us to do justice out of love for what is good, and not out of fear of punishment : “Even when you are alone, do not say or do anything blameworthy. Learn to respect yourself much more before your own conscience than before others.” DK B-CCXLIV “Do not allow yourself, because no one will know your conduct, to act worse than if your action were known to all. It is to yourself that you must show the greatest respect, and you must establish this principle in your heart: do not allow anything dishonest to penetrate there.” DK B-CCLXIV “It is not fear but duty that should turn away from faults.” Maxim 7 “Vile natures do not keep oaths extracted under duress when the danger has disappeared” DK B-CCXXXIX

Plato renounces the idea that men can do good without constant supervision : Although Plato's early dialogues defend the idea that good is to be sought for its own sake (Gorgias and again Republic, II, 358a) , this thesis is subsequently criticized to justify the introduction of authoritarian measures advocated in the Republic and then in the Laws: “No one is just voluntarily, but by constraint” Republic, II, 360c “If anyone were to receive this license of which I have spoken [the power to become invisible and escape justice], and never consented to commit injustice, nor to touch the property of others, he would appear the most miserable of men, and the most foolish, to those who would have knowledge of his conduct.” Republic, II, 360d (the ring of Gyges). For Plato, the individual has no free will: “no one is voluntarily wicked” Timaeus, 86-87 , hence the utopia of preventing injustice by an authoritarian state which will place men in a closed society, constantly monitored by guards.

On slavery

Democritus denounces the inhuman treatment of slaves : “Men are not ashamed to declare themselves happy [in finding gold] because they have dug the depths of the earth by the hands of chained slaves, some of whom perish in landslides and others, subjected for years to this necessity, remain in this punishment as in exile.” pseudo-Hippocrates letter no. 17.

Note: Protagoras and Diagoras "the atheist" of Melos were slaves freed by Democritus. Democritus's position is similar to that of the sophist Alcidama, Epicurus, and Seneca (Letters to Lucilius No. 47).

Plato defends brutal slavery and criticizes the softening of this practice : "When a slave has failed, he must be punished and not be limited to simple reprimands as one would do with a free man, which would make him more insolent. Every word addressed to a slave must be an absolute order and one must not play with one's slaves, whether men or women, as many people do, who thus foolishly make their slaves more delicate." Laws, VI, 777e-778a "There can be no friendship between slaves and masters, nor between people of no means and men of merit." Laws, VI, 757a "There is nothing healthy in a slave's soul." Laws, VI, 776e.

Note: Plato's position is similar to the apology for slavery made by his student Aristotle in "Politics".

On the political regime

Democritus is in favor of democracy : "Poverty in a democratic regime prevails over what is wrongly called happiness among sovereigns, as long as freedom prevails over slavery." DK B-CCLI.

Plato, the precursor of communism, abhors democracy and wants to control the people with fascist methods : "What matters most is that there be no one, neither man nor woman, who escapes the authority of a leader and who becomes accustomed, either in serious combat or in games, to acting alone and under his command, but that always, in peace as in war, everyone has their eyes on the leader, follows him and lets themselves be governed by him, even in the smallest things; that, for example, when he commands, people stop, walk, exercise, take a bath or a meal, [...] in a word, that they do not get into the habit of doing anything alone, apart from others, and that they do not seek to know and know absolutely nothing without them, but that they all live, as much as possible, together in a common life" Laws, XII, 942a. "[It is necessary] to eradicate independence from the entire life of every man." Laws, XII, 942c.

Note: Plato is the father of totalitarianism ⁴⁹⁶(theocracy, inquisition, Nazism, communism, etc.)

On opening up to the world

Democritus is open to the world : "I am certainly the one who has traveled the most of all my fellow citizens, all over the Earth to learn, I have seen many skies and countries, I have listened to many learned men, and no one has

surpassed me in the art of composing writings accompanied by demonstrations, not even the Egyptian geometers.” DK B-CCXCIX.

Plato wants a closed society : “That no citizen under the age of forty be permitted to travel abroad anywhere, and that no one be allowed to travel privately, but only in the name of the state, as a herald, ambassador, or delegate to the festivals of Greece.” Laws, XII, 950d-e.

and finally...

“Aristoxenus (Historical Memories) says that Plato wanted to burn all the works of Democritus that he could find, but that he was prevented from doing so by Amyclas and Clinias, disciples of Pythagoras, who told him that it would be a useless act, since many people already possessed these books. This tradition is correct, because Plato, who cited all the ancient philosophers, nowhere spoke of Democritus, even where he would have had occasion to contradict him, because he knew well that he would then be attacking the best of all philosophers.” DK A1

Note: Democritus' students, Protagoras and Diagoras "the atheist" of Melos, as well as Anaxagoras, suffered persecution for impiety: arrest, burning of books, exile, death sentence...

Notes

Symbols and reference system used : The symbol & means "in addition, see also" and indicates other references where the same author, or a follower, expresses a similar idea. The symbol § identifies references to studies, articles or books. Underlined titles within the notes indicate additional comments.

DK: Numbering of the fragments of Leucippus and Democritus from the collection "The Fragments of the Pre-Socratics" by Diels-Kranz, "The Pre-Socratic Schools" (Jean-Paul Dumont, Folio Gallimard, 1991) in French. The translation has sometimes been revised.

Luria : Numbering of fragments according to the collection Demokrit by S. Luria (Leningrad, 1970).

Us : Numbering according to the collection "Epicurea" by Hermann Usener (Lipsiae, 1887). Lucretius's poem is often preferred in Henri Clouard's translation.

EA: Numbering according to the "Albert Einstein Archives". <https://albert-einstein.huji.ac.il/>

Symbols of works used:

AN: Autobiographical notes. Albert Einstein (Open Court Publishing, 1999).

CPAE : Collected papers of Albert Einstein (Princeton University Press, 1987).
<https://einsteinpapers.press.princeton.edu/>

CVM : How I See the World. Albert Einstein (Flammarion, 1979).

ER : Einstein and Religion. Max Jammer (Princeton University Press, 1999).

EPH : Einstein the philosopher. Michel Paty (PUF, 1993).

HS : Albert Einstein, The Human Side. Helen Dukas and Banesh Hoffman (Princeton, 1981)

IO : Ideas and Opinions. Albert Einstein (Three Rivers Press, 1995).

LY : Out of my later years. Albert Einstein (Citadel Press, 1956).

NQ: The New Quotable Einstein. Alice Calaprice (Princeton University Press, 2005).
Letters to Maurice Solovine (Jacques Gabay, 2005)

The Born-Einstein letters (Palgrave Macmillan, 2004)

TTP: Theological-Political Treatise. Spinoza.

TRE: Treatise on the Reform of the Understanding. Spinoza.

1. Confucius, Ta-hio (the great study, 1). **Confucianism was often represented by rationalist, realist, even materialist disciples** (Xun Zi, Wang Chong, Zhu Xi, Wang Fuzhi) . § The dispute over Confucius in the European Enlightenment (1670-1730). J. Israel.
2. Leucippus after Aetius, Opinions, I, XXV, 4 (DK B-II; p400).
3. Democritus after Cicero, First Academics, II, XXIII, 73 (DK B-CLXV; p542).
4. Democritus after Simplicius, Commentary on Aristotle's Physics, 327, 24 (DK B-CLXVII; p543).
5. Democritus after Aristotle, Physics, II, IV (DK A-LXIX; p437). & Leucippus DK AI.
6. Democritus according to Cicero, On the Ends, I, VI, 17 (DB A-LVI; p431).
7. Democritus according to pseudo-Plutarch, Stromates, 7 (DK A-XXXIX; p422).
8. Democritus after Hippolytus, Refutation of All Heresies, I, 13 (DK A-XL; p423).
9. Democritus according to Aetius, Opinions, V, XIX, 6 (DK A-CXXXIX; p475).
10. Democritus after Aristotle, Treatise on the Soul, I, V (DK A-CIVa; p452). & Leucippe DK A-XXVIII.
11. Democritus according to Aetius, Opinions, IV, VII, 4 (DK A-CIX; p454). & DK B-CCXCVII.
12. Aulu-Gelle, Attic Nights, X, 17 (DK A-XXIII). & Cicero, de natura deorum, I, XLIII.
13. Diogenes Laertius, Lives of the Illustrious Philosophers, Democritus (DK AI; p401).
14. Seneca, Natural Questions, VII, 3, 2 (DK A-XCII; p446).
15. Lucretius, On the Nature of Things, Canto V, 622.
16. Lucretius, On the Nature of Things, Canto I, 62-79.
17. Epicurus, letter to Herodotus, [39]. & Lucretius, I, 963, 1001; II, 308-332; III, 806-818; V, 351-364. Us75. Democritus (DK A-XXXIX; p422). Spinoza (Ethics, I, XV; XX, corollary 2; XXI). As special relativity relativizes simultaneity, in an infinite universe time does not seem to flow from the point of view of the whole (block universe). Brian Greene, The Magic of the Cosmos.
18. Epicurus, letter to Herodotus, [45].
19. **Epicurus a prefiguration of Christ. " a holy, divine man, who alone knew the truth and who, by transmitting it to his disciples, became their liberator (messiah)"** (Lucian of Samosata, Alexander or the False Prophet, 61). καθηγηγής (kathēgetēs): a guide; a master (Matthew 23:10), a savior (Sôter), Ἐπικούρειος (Epicouros) means **savior** (Erasmus, the Epicurean, 1533). (Diogenes Laertius, Book X. Lucretius, on the Nature of Things, V, 1-55; 1020 & Plagiarism of Lactantius (inst. 7, 27, 5-6)). A disciple prostrated on his knees to adore him (Plutarch, Against Colotes). On women (Leontion), children (Seneca, Lucilius n°124; Cicero, On the Ends, I, XXI), the rich (Vatican sentence n°43). Compare Epicurus (Vatican sentence n°44 and Plutarch, Philosophandum esse cum principiis, 3, 778c (Us 544)) with Jesus (Acts 20-35; Mat 19-21; Mat 6-19). Idem compare (Diogenes Laertius, Book X, 121b) with (John 15-13).
20. Virgil, The Georgics, II, 490. **Epicurean Virgil: Virgil followed the teachings of garden philosophers, including the famous Siron, and lived among a circle of Epicureans. This philosophy strongly influenced the writing of his poems, even though Virgil was not a true disciple of Epicurus.**
21. **"Revolutionary eloquence is full of Latin reminiscences"** Jean Moulin, speech of July 13, 1938 before the students of the Ferdinand Foch high school in Rodez.
22. Notebooks of Leonardo da Vinci, Philosophical Maxims.
23. Gotthold Lessing after Friedrich Heinrich Jacobi, letters to Moses Mendelssohn.
24. Declaration of Independence of the United States of America, July 4, 1776. **Thomas Jefferson declared himself a disciple of Epicurus in his letter to William Short, October 31, 1819; and in the letter to Charles Thompson, 1816; but he was in fact closer to the materialist deism of Pierre Gassendi. He possessed the works of Spinoza in his library.**
25. Louis Saint-Just, speech delivered before the Convention, 13 Ventôse Year II (March 3, 1794).
26. **Ideas of Lucretius/Epicurus and/or Democritus generally confirmed or considered by science : laws of nature, atoms/molecules, Brownian motion, giant atoms** DK A-XLIII A-XLVII, **no center in infinite**

space, the void, all bodies fall at the same speed in the void, finite variety of atomic forms, quantum indeterminism, unification of the terrestrial and celestial worlds DK A-XXVII , the stars are material bodies DK A-LXXXV LXXXVII , the light of the Milky Way is the light of stars DK A-XXI , the earth lies in the void, additional planets invisible to the naked eye DK A-XXI , primitive nebula, simultaneous creation of the earth and the sun, mortality of the world, other worlds, other suns, extraterrestrial life, possibility of a world within a world (Pythocles, [89]), we are all born from a seed from the sky, spontaneous appearance of life from the mineral world, the female seed DK A-CXLII , natural selection, giant prehistoric animals/dinosaurs, prehistoric men, consciousness in the brain DK A-CV .

27. Einstein calculated the size of chemical atoms/molecules from Brownian motion, just as Leucippus (DK A-XXVIII) , Democritus (Luria 200-203) , Lucretius (II, 114-141) used the image of dust grains in a sunbeam.

28. Einstein said that “ **the hostility of the academics towards atomic theory** (which drove Boltzmann to suicide) **was undoubtedly due to their positivist philosophy** ” (AN p47).

29The exact quote is “*I want to know how God created this world, I am not interested in this or that phenomenon, in the spectrum of this or that element. I want to know his thoughts. Everything else is just details*” Einstein from Esther Salaman, A Talk with Einstein, The Listener, vol54, p370, 1955 (ER p123; NQ p194).

30. Spinoza, Ethics, II, XL, scholia II and Ethics, V, XXV-XXXVI.

31. Einstein to his assistant Ernst Straus (Carl Seelig, Helle Zeit-Dunkle Zeit, p72; ER p124; NQ p209).

32. Spinoza, Ethics, I, XVII, scholia.

33. Spinoza, Ethics, IV, preface. & “ **God is truth** ” (Cour Treatise, II, 5 and 15). **God was also at the same time nature, Reason and truth among the pagans** (Cicero, On the Nature of the Gods, I, XIII-XV. Marcus Aurelius, Thoughts, VII, IX; V, XXVII; XII, XXVI).

34. Spinoza, Ethics, I, XVI.

35. Einstein to a Chicago rabbi, W. Plaut, end of 1939 (HS p69/70).

36. Einstein, letter to Maurice Solovine, January 1, 1951 (EA 21-274).

37. David, an Armenian philosopher of the late 5th century, reports that “ *for Democritus, man is a microcosm... where Reason governs* ,” in his prolegomena to Aristotle, 38, 14 (DK B-XXXIV; p516). & Lucretius, III, 396-401. A work entitled “Mikros Diakosmos” is cited in the list of Democritus’ works established by Diogenes Laertius. This notion also appears in Epicurus (Pythocles, [89]) and Hippocrates, who was subject to Democritean influence.

38. Democritus, according to Cicero, On the Nature of the Gods, I, XLIII, 120 (DK A-LXXIV; p439). & Aetius, Opinions, I, VII, 16 (DK A-LXXIV; p438). DK B CXII; B-CXXIX. “ *our intellect is god in each of us* ” Euripides, frg1018. “ *reason is nothing other than a particle of the divine breath immersed in the body of man [...]* reason is divine ” Seneca, Lucilius n°66. Marcus Aurelius, Thoughts, V, XXVII; XII, XXVI.

39. Democritus according to Sextus Empiricus, Against the Mathematicians, VII, 265 (DK B-CLXV; p541). & (DK B-CXLII; p534).

40. Spinoza, Theological-Political Treatise, chapter XV. & “ **God being the principle of our knowledge and its foundation** ” Ethics, V, XXXVI, scholium. “ *our understanding is a part of the infinite intellect of God, when it truly perceives things* ” Ethics, II, XLIII, scholium. For Spinoza, “the intellect of God ” is a metaphor (Ethics, I, XVII, schol.).

41. Spinoza, Ethics, V, XXIV. & Ethics, II, XLVI and XI and XLV. Ethics, I, XXXVI.

42. Epicurus, Vatican Sentence No. 10, attributed to Metrodorus by Clement of Alexandria (Stromates, V, 138). This is the vision that Homer attributed to the gods.

43. Lucretius, Canto III, 28-30.

44. Democritus according to Albert the Great, Ethics, I, I, 3 (DK B-CCCIX; p583) & For Democritus, the wise man does not need the authority of laws, he follows his own principles and does good naturally. DK A-CLXVI. Luria 84, 592, 725. & Parmenides DK B I. Protagoras in our collection “ Plato against Democritus”.

45. Spinoza, Ethics, V, XXXVI. & Ethics IV, chapter IV. **the meaning of the intellectual love of God:** Spinoza tells us that the intellectual love of God is a feeling identifiable with glory or self-satisfaction (Ethics, V, XXXVI, scholium) . Spinoza refers us to definition XXV of affects (Ethics III) , where he contrasts this feeling with humility (definition XXVI, explanation) . Spinoza also defines self-satisfaction as “a joy accompanied by the idea of oneself as cause” (Ethics, III, LIII, and III, LI, scholium) , and calls it simply “love of self” (explanation of definition XXVIII) .

46. Spinoza, Ethics, IV, LIII & Machiavelli, Discourse on the First Decade of Titus Livius, II,II.

47. Fusion of two sentences of Spinoza on self-satisfaction: Ethics, III, Definition XXV and IV, LII, Scholia.

48. Epicurus, letter to Menoeceus, [135]. **Epicureanism is a moral rationalism** that seeks “the reason for choices (and laws) ” [132] against empty opinions. With all due respect to their opponents, the Epicureans condemn laziness (Lucretius, III, 1046-1048; V, 48) , praise courage and determination (Lucretius, III, 55-58. letter to Menoeceus, [131]) because they already enjoy future goods in the present. The Epicurean finds in the desire for the goals he aims for, a joy already available for the present (Vatican Maxims n°35 and 48. Us 439).

49. Einstein, note to Adrianna Enriques, October 1921 (EA 36-588; HS p83).

50. Einstein, How I See the World, 1931 (CVM p8-10 or IO p9/10).

51. Testimony on Epicurus reported by Plutarch, That it is not even possible to live pleasantly according to the doctrine of Epicurus, XVI. & Virgil, Aeneid, IV, 449. **The existential heroism of the Epicureans.** Not hiding the harshness of the human condition, nor denying suffering, but overcoming it through a joy increased by philosophical practice is an attitude that shines through in Lucretius (II, 7-13) , in the fragment cited by Marcus Aurelius (Us 191) and in the letter to Idomeneo. This is in fact the attitude of Epicurus just before dying (Us 138. Us 122) , fascinated by the pleasure of having triumphed over existence. I invite you to make the connection between this feeling of acquired invincibility (Us 141. Us 601) and the general exaltation of the Epicureans. Plutarch mentions roars of ecstasy, cries of grace, bursts of tumultuous applause, reverential demonstrations, and all the apparatus of worship among the Epicureans (Us 143. Us 419. Us 605. Vatican Sentence 32) . Philodemus speaks of “divine transports” (addressing the...) . § “Nietzsche and Epicurus: The Heroic Idyll” Richard Roos, Readings of Nietzsche.

52. Epicurus to Colotes, after Plutarch, Against the Epicurean Colotes, XVII (Us 141).

53. Spinoza, Treatise on the Reform of the Understanding, II, 14.

54. Epicurus, letter to Herodotus, [75]. **The notion of progress:** Lucretius, V, 1448-1457: “Navigation, cultivation of fields, architecture, laws, weapons, roads, clothing and all other inventions of this kind, and even those which give value and delicate pleasures to life, poems, paintings, perfect statues, all this has been the fruit of need, effort and experience; the mind has taught it little by little to men in a slow march of progress. It is thus that time gives birth step by step to the different discoveries which human industry then brings to light. Men saw in fact the arts illuminated from age to age by new geniuses, to one day reach their highest perfection.”

55. Spinoza, Theological-Political Treatise, chapter IV.

56. Democritus according to pseudo-Synsesios, to Dioscorus, commentaries on Democritus (DK B-CCC17 and 18; p579/80). & (DK B-CLXXII; B-CLXXVI; B-CCLVII and CCLVIII). & Francis Bacon, admirer of Democritus, whom he paraphrases when he speaks of “conquering nature” (Novum Organum, I, III) , an idea taken up by Descartes: “making oneself master and possessor of nature” (Discourse on the Method, VI) . On the contrary, for the anti-enlightenment and anti-humanist Adolf Hitler: “Man must never fall into the error of believing that he has truly attained the dignity of lord and master of nature... By attempting to rebel against the inflexible logic of nature, man comes into conflict with the principles by which he must exist as man. Thus, by acting against the will of nature, he prepares his own ruin. Here, it is true, the specifically Jewish objection, as comical as it is foolish, of the modern pacifist: “Man must conquer nature!” Millions of men ponder without thinking this absurdity of Jewish origin and end up imagining that they embody a kind of victory over nature; but they only bring as an argument a vain idea and, moreover, so absurd that one cannot, to tell the truth, derive a world view from it” (Mein Kampf, I, 10-11).

57. Einstein, society and personality (IO p15; CVM p14). & science and society (LY).

58. Virgil, the Aeneid, IX, 641 (Apollo addressing the son of Aeneas).
59. Epicurus, Vatican Sentence No. 60. & Us 495.
60. Epicurus, Maximus Capital II [= Vatican sentence no. 2]. & letter to Menoeceus, [125].
61. Spinoza, Ethics, IV, LXVII.
62. Democritus according to John Stobaeus, Florilegium, III, IV, 79 (DK B-CCV; p551). Consumed by old age, Democritus is said to have voluntarily ended his days (DK AI. Lucretius, Canto III, 1039-1041).
63. Democritus after John Stobée, Florilège, III, XVIII, 30 (DK B-CCXXXIV; p556). & Epicurus, Vatican sentence n°65.
64. Democritus according to pseudo-Hippocrates, letter no. 23 (DK C-VI; p586). & DK A-II; B-XXXI.
65. Spinoza, Ethics, V, XXII. & from XXI to XXIII, scholium, “*before the body*”.
66. Democritus after Cicero, First Academics, XVII (& XL). Luria 6.
67. Democritus according to pseudo-Hippocrates, letter no. 10. & Brian Greene and Alexander Vilenkin reach the same conclusion using Heisenberg's indeterminacy principle.
68. Lucretius, On the Nature of Things, Canto III, 847-862 & 670-678, 974-977.
69. Einstein according to Max Born, Physics im Wandel Meiner Zeit (NQ p247). & While affirming the existence of an omnipresent physical determinism, **Einstein denounced the crude and inhuman reductionism of scientists** (“Science and Religion” IO p41. Letter to Hedwig Born, August 31, 1919; EA 8-254. Letter to Solovine sent around January-February 1951).
70. Epicurus according to Diogenes Laertius, Lives of the Illustrious Philosophers, X, [6].
71. Epicurus, Vatican Sentence No. 45. & Lucretius, V, 1131-1135.
72. Epicurus, Vatican Sentence No. 29. & Us 219.
73. Epicurus according to Seneca, letter to Lucilius n°29 (Us 187).
74. Epicurus according to Seneca, letter to Lucilius n°7 (Us 208).
75. Epicurus, letter to Menoeceus, [130].
76. Epicurus, Vatican Sentence No. 77.
77. Einstein, How I See the World, 1931 (CVM p8-10; IO p9/10).
78. Einstein, Jewish Ideals, 1934 (CVM p100 or IO p185). & “***Keep in mind that those who are finer and nobler are always alone, and necessarily so; thereby they can enjoy the purity which their own atmosphere gives them***” (letter to a musician, April 5, 1933; HS p115)
79. Democritus, Maxim No. 30 (DK B-LXV; p520). & (DK B-LIII; p518. DK B-CLXXXIII; p546).
80. Einstein, letter to Hedwig Born, August 31, 1919 (EA 8-254; NQ p256).
81. Interview by George Sylvester Viereck, What Life Means to Einstein, The Saturday Evening Post, October 26, 1929 (NQ p9). Einstein is said to have repeated this elsewhere (NQ p19) and adds that he “***believes in intuitions and inspirations***” (NQ p267). The term “imagination” here refers to constructed inner thought, as opposed to the “knowledge” of academic authorities, and has nothing to do with a superiority of mystical instincts over rational knowledge. & science and civilization (LY).
82. Lucretius, On the Nature of Things, Canto III, 55-58.
83. Democritus, Maxim No. 8 [= John Stobaeus, Florilegium, IV, XLIV, 68] (DK B-XLII; p517). & (DK B-CCXCI; p568) and (Us 475).
84. Epicurus, Vatican Sentence No. 74. & sentence n°27 and Us 219. Luria 714.
85. Einstein quotes Gotthold Lessing at the end of the text The Fundamentals of Theoretical Physics, May 24, 1940 (IO p335) and in March 1955 (EA 1-205; NQ p244) . “***the struggle for truth must precede all other efforts***” (EA 34-725; NQ p280). the beginning of his “reply to Soviet scientists” (LY).
86. Democritus, Maxim No. 9 (DK B-XLIII; p517) and Epicurus after Seneca, letter to Lucilius No. 28 (Us 522).

87. Epicurus, capital maxim I [= Vatican sentence no. 1] which is **addressed as much to the wise as to the gods** . & capital maxim XVI. Vatican sentence no. 79.

88. Democritus, Maxim No. 14 [= John Stobaeus, Florilegium, III, XXXVIII, 46] (DK B-XLVIII; p518).

89. Democritus, Maxim No. 12 [=John Stobaeus, Florilegium, IV, XLIV, 69] (DK B-XLVI; p518).

90. Democritus according to Plutarch, Moral Works, on the means of knowing the progress that one makes in virtue, 10, 81 A (DK B-CXLVI; p535). & (DK B-CLXXXI; p546).

91. Spinoza, Ethics, IV, L. Spinoza's attitude in the days preceding his death are reported by Jean Col  rus in "the life of B. de Spinoza". **The golden rule. Spinoza specifies, however, that " if a man is never led, neither by Reason nor by pity, to come to the aid of his neighbor, he certainly deserves the name of inhuman ". "[Philosophy teaches] to come to the aid of one's neighbor, not by vain womanly pity, by partiality or by superstition, but by the command of Reason alone "** (Ethics, II, XLIX, Scholia) , **because " he who lives according to Reason, desires for others what he desires for himself "** (Ethics , IV, LI, other demonstration) . **This moral law, known as the golden rule, was already stated by Confucius** (Discourses)

92. Epicurus, Vatican Sentence No. 66. & Maximus Capitalus XL. Lucretius, V, 1018-1027.

93. Spinoza, Theological-Political Treatise, chapter IV.

94. Einstein, religion and science, The New York Times Magazine, November 9, 1930 (CVM p18 or IO p39). & the religious spirit of science (CJM p19 or IO p40), is there a Jewish conception of the world? (CVM p101 or IO p186), and (EA 48-380; HS p66).

95. Democritus according to John Stobaeus, Florilegium, IV, I, 46 (DK B-CCLV; p560). & "**general misery is more difficult to bear than individual misery, because the hope of mutual aid disappears** " (DK B-CCLXXXVII; p568).

96. Cicero, First Academics, II, XXIII, 73 (DK B-CLXV; p542).

97. Democritus, Maxim No. 50 (DK B-LXXXIV; p522).

98. Democritus after John Stob  e, Floril  ge, III, XXXI, 7 (DK B-CCXLIV; p 558). & "**The wise man who possesses the greatest good of mankind is also wise even if there are no witnesses** " (Us 533).

99. Democritus according to John Stobaeus, Anthology, IV, V, 46 (DK B-CCLXIV; p562). **Pythagorean sources of Democritean morality.** This morality of self-respect appears in the "golden words" of Pythagoras n  11-12: "**Never practice shameful things, neither with another, nor in private; but above all, respect yourself .**" According to Diogenes La  rtius, Democritus "**expressed his admiration for Pythagoras**" and he had dedicated one of his books of morality to him, entitled: "**Pythagoras, or on the state of wisdom** " (DK AI) .

100. Democritus, Maxim n  62 (DK B-XCVI; p524). & (B-LXVIII; p520. B-LXXXIX; p523. B-CCXXI; p553. B-CLXXXI; p546. B-XLI; p517 and B-CCXXXIX; p557).

101. Democritus according to John Stobaeus, Florilegium, III, III, 46 (DK B-CXCIV; p549).

102. Spinoza, Ethics, V, XLII. **The love of good.** Spinoza explains that "**beatitude consists in the love of God**," and refers us to proposition XXXVI, which identifies the love of God with glory, itself identified with satisfaction or love of self. Spinoza speaks of the "**desire to do good** " (Ethics, IV, XXXVII, scholium) , or again of "**doing good for the love of good, and not for fear of evil (fear of a sanction)**" (TTP, chap. IV) . Then, "**the holy spirit is nothing other than this perfect peace which is born in the soul as a result of good works**" (TTP, chap. XV) .

103. Epicurus according to Plutarch, Philosophandum esse cum principiis, 3, 778c (Us 544). **Pleasure and virtue.** Since Kant, it is often simplified by explaining that the Stoics defend the pleasure of virtue, while Epicurus would defend virtue only because it serves to obtain pleasure. In fact, the situation is more complex, because Epicurus also considers that there is a pleasure of virtue. Seneca recognized this: "**Epicurus also is of the opinion that with virtue man is happy** " (letter to Lucilius n  85) , even if he thinks that this is contradictory with the hedonistic doctrine. Cicero acknowledges that the majority of his contemporaries are seduced by Epicureanism because they consider "**that Epicurus teaches that a just and honest action is in itself productive of joy** " (On Ends, I, VII, 25) , and indeed, the Epicurean Torquatus "**applauds**" the Stoics' doctrine of the pleasure of virtue (On Ends, I, XIX, 61) . Regarding

the Epicureans, Cicero admits that “ *the word virtue is on their lips all the time, and they declare that pleasure is only the object of desire at first, and then habit produces a kind of second nature, which provides a motive for many actions not aimed at pleasure at all* ” (On Ends, V, XXV; Us 398). & (On Ends, II, XXV and XXVI).

104. Epicurus, Vatican Sentence No. 44.
105. Spinoza, Ethics, I, XV, scholium. & (HS p67. EPH p349/393) on the beauty of nature revealed by science according to Einstein.
106. Leucippus after Clement of Alexandria, Stromates, II, 129 (DK A-XXXVII; p399).
107. Spinoza, Ethics, IV, LXI.
108. Spinoza, Ethics, IV, LVIII.
109. Spinoza, Ethics, IV, XLV, corollary II, scholium.
110. Democritus on the poets (DK B-XVIA to XXI; p509-510). & DK A-XXXIV.
111. Democritus according to John Stobaeus, Florilegium, III, V, 22 (DK B-CCVII; p551).
112. Spinoza, Ethics, II, XLIV, corollary II.
113. Testimony on the tomb of the Epicureans (Heliodorus, Ethiopics, I, 16).
114. Democritus according to John Stobaeus, Selection of texts, II, XXXIII, 9 (DK B-CLXXXVI; p547).
115. Numenius of Apamea, fragment no. 24. & Us 94.
116. Democritus according to John Stobaeus, Florilegium, III, I, 210 (DK B-CXCI; p548).
117. Democritus, Maxim No. 38 [= John Stobaeus, Florilegium, III, V, 23] (DK B-LXXXIII; p521).
118. Democritus according to John Stobaeus, Florilegium, III, XL, 7 (DK B-CCXLVII; p559). & DK B-CCXCIX; p570.
119. Epicurus, Vatican Sentence No. 9.
120. Epicurus, Vatican Sentence No. 47, attributed to the Epicurean Metrodorus by Cicero (Tusculanae, V, IX, 27) and Plutarch (On the Tranquility of the Soul, 476c).
121. Epicurus, letter to Menoeceus, [133, 135]. & Diogenes of Oenoanda, fragment no. 125. Us 386, 387 and 602. § How can one be God? The sect of Epicurus. Renée Koch.
122. Democritus after John Stobaeus, Florilegium, III, VII, 21 (DK B-CCXIII; p552). & B-CXVIII.
123. Democritus according to John Stobaeus, Selection of texts, II, XXXI, 66 (DK B-CLXXXII; p546). & (B-CCXLIII; p558. B-CCLXIX; p564. B-CVIII; p526). Juvenal, Satyr, X.
124. Quote attributed to Albert Einstein. Exact reference unknown in this form. However, an almost identical sentence is found in his tribute to Pablo Casals, March 30, 1953 (EA 34-347; NQ p75).
125. Einstein, at the end of the texts: “the disarmament conference of 1932” and “the question of disarmament” (CVM p64/70; IO p100/103).
126. Democritus (DK A-CLXVI; A-LXXIV; A-XXXIII; B-II).
127. Descartes, Principles of Philosophy, Part One, Article 7.
128. Democritus DK B-CLVI. & Idea rejected by Parmenides DK B-VI and VIII.
129. Leucippus after Aristotle, Metaphysics, A, IV, 985 (DK A-VI; p385). & (A-VII, VIII, XII) and (Democritus A-XXXVIII; A-XL; A-XLII; A-XLIV; A-XLV; A-XLIX). Lucretius, I, 430-448 and 1008-1011.
130. Democritus after Simplicius, Commentaries on Aristotle's Physics, 28, 15 (DK A-XXXVIII). & B-CLVI.
131. Luria 8 (Aristotle, Meta, III, 5. Alexander of Aphrodisias ad loc. 304.2). Cicero, On the Nature of the Gods, I, XXV). Cicero, by Fato.
132. The first cause. The concept of first cause is developed by Plato (Laws, X, 895) to combat atheism. Aristotle takes up this idea, defining God as “ *something that moves without being moved* ” (Metaphysics,

Λ/XII, VII), and which most commentators have called “ *uncaused cause* ”. Thomas Aquinas - Summa Theologica, question 2. (the cosmological argument of kalam).

133. Denis Diderot, Letter on the Blind for the Use of Those Who See. Against the Uncaused Cause: § Paul Thiry d'Holbach, System of Nature, Chapter II. § Thomas Jefferson, letter to John Adams, April 11, 1823. § Donatien de Sade, Dialogue Between a Priest and a Dying Man.

134. Lucretius, Book V, 196-200

135. § Jean-Robert Argand. Essay on a way of representing imaginary quantities by geometric constructions.

136. § Winning Ways for your Mathematical Plays. Elwyn R. Berlekamp, John H. Conway, and Richard K. Guy. Academic Press, 1982, volume 2. & Halting problem, Turing, 1936.

137. Spinoza, Theological-Political Treatise, Chap. XV.

138. Galileo, Il saggiatore, introduction.

139. Einstein, letter to Cornelius Lanczos, January 24, 1938 (EA 15-267; HS p67; ER p40; EPH p349).

140. Einstein, on method in theoretical physics, the Herbert Spencer lecture, June 10, 1933 (CVM p133/134; IO p274).

141. Einstein, Principles of Research, speech given in 1918 for Max Plank's sixtieth birthday (CVM p123/124 or IO p226).

142. Einstein, letter to Michele Besso, September 10, 1952, and letter to Ilse Rosenthal-Schneider, May 11, 1945 (EA 7-411 and EA 20-274; EPH p482/483). & The same ideas are expressed in his autobiographical notes (AN p59/77).

143. For Democritus, all sensible things are reducible to the geometric properties of atoms (Leucippe DK A-XXXII; p398). For Einstein, Physics and Reality, Stratification of the Scientific System (IO p293; Conceptions Scientifiques p26).

144. § The Dream of an Ultimate Theory. Steven Weinberg. & The film “Einstein’s Dream” with Brian Greene.

145. § A brief history of time. Stephen Hawking (p175).

146. § Principia Mathematica. Alfred North Whitehead and Bertrand Russell.

147. Essence and Existence: Luria 1. Us 244.

148. Lucretius, On the Nature of Things, Canto V, 526-533. & Epicurus, letter to Pythocles.

149. Einstein, letter to Max Born, September 7, 1944.

150. §S Carlson. A double-blind test of astrology. Nature, 1985.

151. Einstein, religion and science, The New York Times Magazine, November 9, 1930 (CVM p17 or IO p39). & Spinoza, Ethics, II, VII.

152. Giordano Bruno, La Cena de le Ceneri, III. From infinity, universe and world, II and III. De la causa, principio et uno, V. & Lucretius, I, 1070; IV, 387. Luria 361.

153. Einstein, Science and Religion, 1941 (IO p49).

154. § Friedrich Heinrich Jacobi. David Hume. § Luc Ferry. Kant, a reading of the three critiques, the question of the thing in itself, p249-250. § Charles Renouvier. Critique of Kant's doctrine. § Arthur Schopenhauer. The world as Will and Representation, Error of going back to the thing in itself by the principle of causality.

155. Schopenhauer, Parerga and Paralipomena, Philosophy and Natural Science.

156. § Haxby et al. Distributed and overlapping representations of faces and objects in ventral temporal cortex. Science. 2001 Sep 28;293(5539):2425-30. §**Mitchell** et al. Predicting human brain activity associated with the meanings of nouns. Science. 2008 May 30;320(5880):1191-5. § Kay et al. Identifying natural images from human brain activity. Nature. 2008 Mar 20;452(7185):352-5.

157. § Descartes' error: the reason for emotions. Antonio Damasio.

158. Sextus Empiricus, Against the Mathematicians, VIII, 6 (Democritus DK A-LIX).

159. § Blanke et al. Stimulating illusory own-body perceptions. Nature. 2002 Sep 19;419(6904):269-70. § Timmermann et al. DMT Models the Near-Death Experience. Front Psychol. 2018 Aug 15;9:1424.

160. Spinoza, Ethics, III, II, scholia.

161. Plato, Apology of Socrates, 21d. Cicero, second academic, II, IV.

162. For Democritus and Epicurus, medicine is the sister of philosophy because medicine heals the body, and philosophy heals the soul (DK B-XXXI. C-VI. Tetrapharmakon. Us 221. Vatican Sentence No. 54) .

163. Expression of Spinoza, letter to Burgh, end of 1675-beginning of 1676. The same in Giordano Bruno and in Epicurus, **"this great man whose nature is truly sacred and divine, alone knew the truth and the good, and brought liberation to his disciples"** Lucian of Samosata, Alexander or the false prophet. We find this idea in Colotes, immediate disciple of Epicurus, who had written a treatise entitled "That it is not possible to live according to the dogmas of other philosophers". Lucretius, VI, 79. Diogenes of Onenda.

164. **Reason and the Passions. Once he had attained wisdom, Confucius observed that “ in following the desires of my heart, I transgressed no rules ” (Dialects II.4) . Similarly, Spinoza does not call for a direct opposition between Reason and the passions. He knows well “ that a passion can only be prevented or destroyed by a contrary and stronger passion.” (Ethics, IV, VII) and recognized at the beginning that “ although I had a clear idea of all that I have just said, I could not, however, completely banish from my heart the love of gold, pleasures and glory”, but after the exercise of meditation “ I saw that wealth, voluptuousness, glory, are only harmful insofar as one seeks them for themselves, and not as simple means; whereas if one seeks them as simple means, they are capable of measure, and no longer cause any harm; far from it, they are of great help in attaining the goal that one sets for oneself” (TRE) . “ All desires are passions properly speaking (that is, influences undergone) only insofar as they arise from inadequate ideas; but insofar as they are excited and produced by adequate ideas, they are virtues” which are in full accord with Reason (Ethics, V, IV, scholium) . To contain harmful passions, one must cultivate a “ love of freedom” which in turn confers the capacity to regulate one’s passions and strive “to know the virtues and their causes, and to fill one’s soul with the contentment that this true knowledge gives rise to... Whoever carefully observes this rule and practices it, will succeed in a very short time in directing most of his actions under the rule of reason” (V, X, scholium) . Spinoza invites has develop the feelings of joy produced by the practice of Reason, and concludes that “ no one enjoys bliss because he has restrained his passions, but the power to restrain his passions has its origin in bliss itself” (V, XLII) .**

165. formula attributed to Hassan ibn al-Sabbah, guru of the sect of assassins, and taken up by Friedrich Nietzsche (Genealogy of Morals, III, 24).

166. Democritus, after Cicero, On the nature of the Gods, I, XLIII, 120 (DK A-LXXIV; p439). & (A-XXXIX. A-XL; B-CLXVII). Leucippus DK AI. Lucretius, II, 569-580; V, 92-96, 302-305.

167. § Linde A. Eternally existing self-reproducing chaotic inflationary universe. Physics Letters B. 1986 August;175(4):395-400.

168. § Many Worlds in One. Alexander Vilenkin § Guth A. Eternal inflation and its implications. J.Phys. 2007;A40:6811-6826. § The Magic of the Cosmos . Brian Greene. § The Cosmic Landscape. Leonard Susskind. § Lee Smolin. The Status of Cosmological Natural Selection.

169. §A Universe From Nothing. Lawrence Krauss. § Marcelo Samuel Berman. On the zero-energy universe. Int.J.Theor. Phys.48:3278,2009. arXiv:gr-qc/0605063.

170. 2 Maccabees 7:28. Tertullian, Apologetics, XLVIII (& Against Hermogenes).

171. § Vilenkin A. Creation of universes from nothing. Physics Letters B. 1982 November;117(1-2):25-28. § The Void. Universe of everything and nothing. Simon Diner, Edgard Gunzig.

172. § Phillip Halper, The Kalam cosmological argument: Critiquing a recent defense. 2021.

173. § Boyle et al. CPT-Symmetric Universe. Physical Review Letters. 2018. 121, 251301.

174. § Aguirre et al. Steady-State Eternal Inflation. Physical Review. 2002; D 65 083507.

175. § Tegmark M. The Mathematical Universe. Foundations of Physics. 2008;38:101-150.

176. Cicero, De Finibus, I, VI, 21.

177. Set theories NFU, NF, NBG... § Jean-Paul Delahaye. The set of all sets (Pour la science, 2010; logic a spur for thought).

178. Einstein. Ether and the Theory of Relativity. 1920. (CPAE vol7 doc38).

179. Hartland S. Snyder. Quantized Space-Time. Phys. Rev. 71, 38. 1 January 1947.
180. § The Elegant Universe. Brian Greene
181. § Sumati Surya. The causal set approach to quantum gravity. 2019.
182. § What is space? What is time? Carlo Rovelli. § The foam of space-time. Jean-Pierre Luminet.
183. Diogenes Laertius, Lives of the Illustrious Philosophers, Pythagoras. § Giordano Bruno. On Cause, Principle and Unity, III, IV, & V.
184. Aristotle, Treatise on Heaven, III, IV, 303 (Leucippe DK A-XV; p391). & All the fragments of Leucippus (from DK A-VI to DK-XV; p385-391) and (Democritus DK A-LIX; p432). **Pythagorean origin of Democritean atomism.** Leucippus would have been a direct pupil of Pythagoras (Leucippus DK AV; p385) before becoming Democritus's master. Even if a certain mystery seems to surround Leucippus, **Diogenes Laertius concludes that the sources agree in recognizing that Democritus “was the pupil of a Pythagorean” and “that it seems that it is from [Pythagoras] that he received everything” (DK AI, p402) . “Geometry is the principle and the homeland of all sciences” (Philolaos DK A-VIIa; p251) .**
185. Aristotle, Metaphysics, A, IV, 985. (Leucippe DK A-VI; p385). & (Leucippus DK A-XIV; A-XXXII) and (Democritus DK A-XXXIII; A-XXXIV; A-XXXVII; A-XXXVIII; A-XLI; A-XLIV). Lucretius, I, 684-689; II, 1013-1022. Luria 826.
186. Democritus (DK A-XLIX; A-XLVII; A-CXXIII; A-CXXV; A-CXXVI; A-CXXX; A-CXXXV). “**Convention that sweet, convention that bitter, convention that hot, convention that cold, in reality there are only atoms and the void**” (B-IX; B-CXVII; B-CXXV). Lucretius, II, 730-884.
187. Aristotle, On generation and corruption, I, VIII, 325 (Leucippe DK A-VII). & A-IX.
188. § JM Lévy-Leblond. One more derivation of the Lorentz transformation. American Journal of Physics, Volume 44, Issue 3, pp. 271-277 (1976).
189. § Alain Connes. Noncommutative Geometry.
190. Lucretius, On the Nature of Things, Canto II, 216-250. **Clinamen, Causality and Logic. For Epicurus, deviation is not a violation of the laws of nature, but only the existence within matter of “another cause of movement than shocks and gravity which produces a slight deviation of atoms, in indeterminate places and times” (284-293). Epicurus in fact describes this chance as a physical “cause”, in the same way as gravity (Us 380), responding in advance to the criticisms that Cicero would later make. (On the Ends, I. On Destiny, X, XI and XX). & (Democritus DK A-LXIX; p437. Us 281. Us 378-379) and Diogenes of Oenoanda who speaks of a “free movement in atoms” (fragment n°54; Democritus DK AL; p429). Finally, let us note that Democritus and Epicurus reject the principle of the excluded middle (Cicero, on the Nature of the Gods, I, XXV).**
191. Lucretius, On the Nature of Things, Canto II, 221-250.
192. § Guth et al. Inflationary cosmology: exploring the universe from the smallest to the largest scales. Science. 2005 Feb 11;307(5711):884-90.
193. Simplicius, Commentary on Aristotle's Physics 934, 23-30 (Us 278). Sextus Empiricus, Against the Mathematicians, X, 142. Epicurus, letter to Herodotus [58-59]. Lucretius, I, 1109; IV, 164, 193, 794-796. Democritus (DK B-CLVa; p538). Luria 254.
194. § Pironio et al. Random Numbers Certified by Bell's Theorem. Nature. 2010.
195. § Yurtsever. Quantum Mechanics and Algorithmic Randomness. 1999. § Bendersky et al., Nonsignaling Deterministic Models for Nonlocal Correlations have to be Uncomputable. 2017
196. § Paterek et al. Logical independence and quantum randomness. 2010. § Castelvechi. Paradox at the heart of mathematics makes physics problem unanswerable. Nature News, 2015.
197. § Catren et al. On the notions of indiscernibility and indeterminacy in the light of the Galois–Grothendieck theory. Synthesis. 191:4377–4408. 2014.
198. § Szangolies, Epistemic Horizons and the Foundations of Quantum Mechanics. 2018. § Gregg Jaeger. Information and the Reconstruction of Quantum Physics. 2019. § Zeilinger A. A Foundational Principle for Quantum Mechanics. Foundations of Physics. 1999 .

199. § ND Mermin. Bringing home the atomic world: Quantum mysteries for anybody. 1981. § The canticle of the quantum. Sven Ortolí, Jean-Pierre Pharabod.
200. § Oreshkov et al. Quantum correlations with no causal order. 2012.
201. § If Einstein were told to me. Thibault Damour (p185).
202. Anaximander (DK AX, XI and XXX; p36/37/46).
203. Lucretius, on the Nature of Things, Canto IV, 820-840 and Canto V, 835-875.
204. § The Selfish Gene. Richard Dawkins .
205. Watson et al. Molecular structure of nucleic acids; a structure for deoxyribose nucleic acid. Nature. 1953 Apr 25;171(4356):737-8.
206. § CC Cowden. Game theory, evolutionary stable strategies and the evolution of biological interactions.
207. § The neuronal man. J.-P. Changeux.
208. § Biology of consciousness. Gerald Edelman.
209. § Northoff et al. Self-referential Processing in Our Brain--A Meta-Analysis of Imaging Studies on the Self. Neuroimage. 2006 May 15;31(1):440-57. § Craik et al. In search of the self: A positron emission tomography study. Psychological Science. 1999 January;10(1):26-34.
210. § Klein et al. Is there something special about the self? A neuropsychological case study. Journal of Research in Personality. 2002; 36:490-506.
211. § The very feeling of self. Antonio Damasio. This author distinguishes the proto-self (animal), the central self (the sense of self), and the autobiographical self.
212. § Tang et al. Infant behavioral inhibition predicts personality and social outcomes three decades later. Proc Natl Acad Sci US A. 2020 Apr 20. 201917376. & amblyopia shows the existence of a critical period in the development of the visual system (myelination).
213. Varro (Marcus Terentius Varro) cited by Augustine of Hippo, The City of God, XXII, 28.
214. Seneca, letter to Lucilius, XLI. Marcus Aurelius, Thoughts, II, XVII; III, V and XVI; V, XXVII; XII, I and XXVI. Augustine of Hippo, City of God, VII, XIII.
215. § Allen et al. Dissociative detachment and memory impairment: reversible amnesia or encoding failure? Compr Psychiatry. 1999 Mar-Apr;40(2):160-71. § Kihlstrom JF. The cognitive unconscious. Science. 1987 Sep 18;237(4821):1445-52.
216. § BL Brand. Separating Fact from Fiction: An Empirical Examination of Six Myths About Dissociative Identity Disorder. Harvard Review of Psychiatry. 24(4): 257-270. 2016.
217. Spinoza, Ethics, IV, LXXIII, scholium. & Democritus DK B-IV.
218. Lucretius (II, 269-280; III, 55-58, 95-105, 136-144, 273-281, 307-332, 396-401). Plutarch, on the atoms constituting Epicurus from childhood according to Neocles (Us 178). Democritus (DK A-CIVa; A-CV; B-LVI). Luria 449.
219. Epicurus, On Nature, Book XXV.
220. Lucretius, On the Nature of Things, Canto IV, 802-815.
221. **The singular individual or dilution in the great whole? Spinoza explains that there are two possible points of view on human nature. It can " be conceived by itself alone " or " as it is part of nature " (Ethics, IV, Chap. I). Of these two ways of seeing, Spinoza chooses to develop the first. Spinoza explains that all the force of his doctrine comes from a proof drawn from " singular things ", which is why, each time he proceeded to an identification with God, he insisted on specifying that this occurred " not as infinite, but as God explains himself by the nature of the human mind, and constitutes the essence of the human mind" , in order to " [draw his final conclusion] from the very essence of a singular thing " (Ethics, II, XI; V, XXXVI, scholium). Spinoza's god is therefore not conceived as destiny or an external force that directs beings like puppets (theological-fatalistic vision) , but for Spinoza the beings of nature are divine, when they have reason within them (humanist/pagan vision). (Political Treatise, Chapter II, 2-8. Ethics, I, XXXVI. & TTP, Chapter XVII "Nature does not create nations, it creates individuals ."**

222. Spinoza, Treatise on the Reform of the Understanding, XIV, 101. & TTP, IV: “ *the chain of causes cannot serve us in any way to form and link our thoughts concerning particular things .*”

223. Spinoza, letter no. 21, to Blyenbergh.

224. Democritus (DK from A-LXVII to LXX). Lucretius (I, 449-450, 478-482; II, 1060; V, 187-194, 419-431). Luria 449.

225. § Lindorff-Larsen et al. Simultaneous determination of protein structure and dynamics. Nature. 2005 Jan 13;433(7022):128-32.

226. § Muotri et al. Somatic mosaicism in neuronal precursor cells mediated by L1 retrotransposition. Nature. 2005 Jun 16;435(7044):903-10.

227. § Spencer et al. Non-genetic origins of cell-to-cell variability in TRAIL-induced apoptosis. Nature. 2009 May 21;459(7245):428-32.

228. § Tonegawa S. Somatic generation of antibody diversity. Nature. 1983 Apr 14;302(5909):575-81.

229. § Fougny D et al. Variability in the quality of visual working memory. Nat Commun. 2012;3:1229.

230. § Wong et al. Phenotypic differences in genetically identical organisms: the epigenetic perspective. Hum Mol Genet. 2005 Apr 15;14 Spec No 1:R11-8.

231. § Srihari et al. Discriminability of fingerprints of twins. Journal of Forensic Identification. 2008;58(1):109-127.

232. § Krueger et al. The Heritability of Personality is not Always 50%. J Pers. 2008 Dec; 76(6): 1485–1521. § Kandler et al. Personality Differences and Development: Genetic and Environmental Contributions. The International Encyclopedia of Social and Behavioral Sciences. April 2015. 884-890. § Tellegen et al. Personality Similarity in Twins Reared Apart and Together. J Pers Soc Psychol. 1988 Jun;54(6):1031-9.

233. § Paolicelli et al. Synaptic pruning by microglia is necessary for normal brain development. Science. 2011 Sep 9;333(6048):1456-8.

234. Lucretius, On the Nature of Things, Canto III, 396-401.

235. Spinoza, Ethics, IV, definitions, VIII. & XVIII, scholia; XIX; XXIV.

236. Spinoza. Ethics, III, definitions and propositions I and III. & Short treatise, II, XXVI.

237. Spinoza, Ethics IV, chapter IV.

238. Lucretius, on the Nature of Things, Canto III, 145. & II, 7-10; III, 106-111. Epicurus after Seneca, letter to Lucilius, XXV and Marcus Aurelius (Us 191).

239. Spinoza, Ethics, III, definitions. & Ethics IV, chapter IV. Seneca, letters to Lucilius, CXXIV.

240. See Freud's pseudo-explanation of " *1 florin 50 kreuzer the three* " (On Dreams, VII, III) or Nietzsche's rejection of the explanatory force of Darwinism for psychologizing and social class reasons (The Gay Science, 349).

241. § Tomasetti et al. Cancer etiology. Variation in cancer risk among tissues can be explained by the number of stem cell divisions. Science. 2015 Jan 2;347(6217):78-81.

242. Lucretius, on the Nature of Things, Canto I, 823-829. & 778-779 and Leucippe (DK A-IX) and Luria 565.

243. Spinoza, Ethics, IV, LXIV and LXXIII, scholia.

244. Spinoza, Ethics, IV, LV-LVII and chap XXII.

245. **The inversion of values.** “ *For judgment I came into this world, that those who do not see may see, and those who see may become blind. ” “ The last shall be first, and the first shall be last .” “ Whoever exalts himself shall be humbled, and whoever humbles himself shall be exalted .” “ Whoever loves his life will lose it, but whoever hates his life in this world will keep it for eternal life. ” Jesus Christ* (Gospel according to John 9:39 and 12:25, Matthew 23:12 and 20:16, Luke 14:11) & Paul (Corinthians, 1 1:18-29, 2 12:10) . *The pagans had denounced this doctrine as “ hatred against the human race .” Tacitus* (Annals) . “ *Let us now hear by what kind of people the Christians invite to their mysteries: 'Whoever is a sinner, whoever is without understanding, whoever is weak in spirit, in a word, whoever is miserable, let him approach, the kingdom of God belongs to him.'* ” *Why does God not sent also for those who do not sin? What*

harm is there in being exempt from sin? Let the unjust, you say, humble himself in the awareness of his

misery and God will welcome him. But what! If the just man, confident in his virtue, raises his eyes to God, will he be rejected? " Celsus (True Discourse, II, 37-38) . " Christianity was born from the spirit of resentment " " Modern men, deaf to all Christian nomenclature, no longer feel the horribly superlative nuance attached to the paradox of the formula "god crucified." This formula promised the overthrow of all ancient values. " " Dante was mistaken when he placed above the door of his hell: "I too was created by eternal love." It would be more legitimate to place above the door of the Christian paradise: "I too was created by eternal hatred. " Nietzsche (Ecce Homo, Genealogy of Morality & Why I Am Fate; Beyond Good and Evil, 46 & 62, 195; The Genealogy of Morality, I, 15). & Giordano Bruno, The Expulsion of the Triumphant Beast (III, III, "Orion").

246. *" Although I try to be universal in thought, I am European by instinct and inclination "*. Einstein, Daily Express, September 11, 1933 (NQ p11). & (EA 49-276. EA 60-594. EA 61-295. EA 59-727; NQ p159-161).

247Diogenes of Oenoanda, fragment 3.

248. Epicurus, Maximus Capital XXXVI and XXXII. Diogenes Laertius, X, [118]. & Democritus (DK B-LXIX). Marcus Aurelius, Thoughts, VI, XLIV.

249. Democritus Maximus 58 (DK B XCII)

250. Emile Chartier, known as Alain. The Cult of Reason as the Foundation of the Republic. Review of Metaphysics and Morality, vol. 9, 1901.

251Diogenes Laertius, Lives of the Illustrious Philosophers, X, [2-3].

252. Plutarch, Against the Epicurean Colotes, VI (Democritus DK A-LIII; p430; Us 234). & **" It would really have taken a Democritus, or even Epicurus himself or Metrodorus, in short, someone of those men whose steely reason resists this kind of astonishment to refuse to believe [in the very clever sleight of hand performed by this charlatan] "** Lucian of Samosata. Alexander or the False Prophet.

253. Luria XCVI, 182, 747. § Epicurus and Democritean Ethics: An Archeology of Ataraxia. James Warren. Indeed, we notice that Epicurean ataraxia resembles Democritus' euthymia much more than Cyrenaic pleasure. The moral fragments of Democritus seem to me to be largely authentic. Several maxims are attested by different sources. Compare DK (B-LV with B-CXLV and AI; B-CLXXXVIII with B-IV; A-CLXX with B-CCLXXVI; B-III; B-CXIX). We also find numerous occurrences in Epicureanism (B-CCXC VII. B-CC. B-CCXC. B-CCXI. B-CCXXXII. B-CLXXVI). § FK Voros. The Ethical Fragments of Democritus: The Problem of the Authenticity. Hellenica 26, 1973, p. 193-206. § Charles H. Khan. Democritus and the Origins of Moral Psychology. The American Journal of Philology, vol 106, n°1, 1985.

254. Plutarch, Against the Epicurean Colotes, VI (Democritus DK A-VIII; A-CXIV; B-LXIX; B-CLVI). & Luria 131.

255. Pierre Gassendi. Life and Morals of Epicurus, Book V.

256. Epicurus, Nature, Book XXV. Luria 36a & CII.

257. Philodemus of Gadara, On Music, IV, 31 (Democritus DK B-CXLIV; p534).

258. Philodemus of Gadara, On Frank Speaking, fragment no. 20 (Us 16).

259. Diogenes of Oenoanda, fragment no. 7. & Democritus DK B-XI.

260. End of Spinoza's last letter to Hugo Boxel, 1674.

261. Isaac Jaquelot. Dissertations on the existence of God... by the refutation of the system of Epicurus and Spinoza (1697). Fénelon. Treatise on the Existence of God (1713).

262. § Radical Enlightenment: Philosophy, Spinoza and the Birth of Modernity. Jonathan Israel (p33, p295, p515, p601, p637, p660, p743).

263. See the analyses of Pierre-François Moreau, Laurent Bove, André Comte-Sponville, Michel Onfray... § Spinoza, Epicure, Gassendi. Proceedings of the Paris-Sorbonne Conference, March 17, 1993. Archives de Philosophie, Paris, 57-3, July-September 1994.

264. Spinoza, Theological-Political Treatise, Chapter VI and Treatise on the Reform of the Understanding, II, 12: **" everything that happens, happens according to the eternal order and the fixed laws of nature "**. Lucretius, I, 150, 584-591; II, 297-302; IV, 592-595; V, 126-133, 669-679, 878.

265. Spinoza, Ethics, I, appendix. Lucretius, II, 133, 167-184; IV, 824-842.
266. “ ***Pleasure is the beginning and the end of the blissful life*** ” Epicurus, letter to Menoeceus [128]. Vatican Maxims n°35 and 48. Us 439. Spinoza, Eth. III, definitions of affects I, and LIX.
267. Epicurus, Vatican Sentence No. 55. Spinoza, Ethics, V, VI.
268. “ ***it is better for the use of life, and it is even indispensable to consider things, not as necessary, but as possible*** ” Spinoza (TTP, chap. IV). Epicurus, letter to Menoeceus, [133-135].
269. Spinoza, Theological-Political Treatise, preface and chapter XVIII. Epicurus (Us 560). Lucretius, II, 1-39; V, 1113-1140, 1422-1435. Diogenes of Oenoanda, fragment no. 54.
270. “ ***The goal of the state is freedom (of the individual)*** ” Spinoza (TTP, chapter XX). Seneca, letter to Lucilius, no. 88.
271. Epicurus, Capital Maxims from XXXI to XXXIX. Spinoza, Ethics, IV, XXXVII and TTP, chapter XVI.
272. **Unity is the end of philosophy** in Spinoza (Ethics, V, XXXVI, scholia), Giordano Bruno and Democritus (DK A-CLXVI; Athena Tritogeneia DK A-XXXIII; B-II).
273. Anecdote reported by Sextus Empiricus (Against the Dogmatists, X). & Diogenes Laërtius (Lives of the Illustrious Philosophers, Epicurus, [2]).
274. Einstein, preface to the German translation by Hermann Diels, volume II. 1923. CPAE, 14, 260.
275. Einstein, anniversary of Newton's death. Published May 1927. CPAE, 15, 506.
276. Einstein, letters to Maurice Solovine of April 9 and August 26, 1947 (EA 21-250 and 21-202) .
277. Einstein, letter dated December 3, 1950 (EA 61-821; HS p27)
278. Einstein, letter to Max and Hedi Born, April 12, 1949 (EA 8-223).
279. Television Einstein Biography, Richard Kroehling, 1991. Epicurus, Vatican sentence no. 41. Democritus according to pseudo-Hippocrates, letters no. 14 and 17.
280. **The reference to childhood.** Einstein invokes the wonder of a child on several occasions: “ ***[Ernst Mach] looked at the world with the eyes of a child until a ripe old age*** ” (CPAE vol6 doc29; NQ p90). “ ***Bohr is there and I am in love with him. He is like an extremely sensitive child who moves through this world, as if in a kind of trance*** ” (letter to P. Ehrenfest, May 4, 1920; NQ p73). “ ***We never cease to remain like curious children before the great mystery into which we were born*** ” (letter to O. Juliusburger, September 29, 1947; HS p82). & the quote in “***Heroic Idealism***” (EA 36-588). **Finally, the joy of the child was also a model among the Epicureans** (Seneca, letter to Lucilius no. 124. Cicero, on the Ends, I, XXI). **The child is also the third metamorphosis in Nietzsche.**
281. § Albert Einstein, creator and rebel. Banesh Hoffmann and Helen Dukas. For Epicurus, review his quotes in the chapter “The Radical Independence of Liberated Man”.
282. § Kuznetsov B. Einstein and Epicurus. Diogenes. 1973;21(44):44-69. & (EA 45-751 and EA 60-684; NQ p60).
283. Einstein to Margot Einstein, after Hanna Loewy, Television Einstein Biography, Richard Kroehling, 1991 (NQ p61). & Epicurus, letter to Herodotus, [37]. Maximus Capital XII. Vatican Sentence 49. Lucretius, I, 146-148; II, 59-61; III, 91-93; VI, 39-41.
284. Einstein according to Max Born, Physics im Wandel Meiner Zeit, p240 (NQ p61).
285. Einstein, letter to the Besso family, March 21, 1955 (EA 7-245; NQ p73). & his last words as he died: “ ***I have finished my task here*** ” (NQ p20; EA 39-095).
286. Einstein, letter to Maurice Solovine, March 4, 1930 (EA 21-202). Einstein makes a criticism of one of Democritus's maxims, but I don't see which one he is referring to.
287. Einstein, religion and science, The New York Times Magazine, November 9, 1930 (CVM p18 or IO p39).
288. Einstein, letter to Max von Laue, May 26, 1933 (EA 16-089; Einstein on Politics, D. Rowe and R. Shulmann, p. 278)
289. Einstein to a neighbor's daughter, in Caputh (HS p30). Compare with the quote from Democritus in “The Kingdom of Reason ” .

290. The Evolution of Ideas in Physics. Einstein and Infeld. (Chapter 1, The Philosophical Background).
291. Maurice Solovine, letters to Maurice Solovine, epitaph.
292. Einstein, Autobiographical-Notes (Paul Arthur Schilpp, Albert Einstein Philosopher-Scientist)
293. § Paty M. Einstein and Spinoza . Association of Friends of Spinoza, March 19, 1983.
294. Einstein, letter to his cousin Elsa, September 3, 1915 (EA 73-50; Einstein's Third Paradise, Gerald Holton, p33) .
295. Jean Maximilien Lucas, The life of the late Mr. de Spinoza by one of his disciples.
296. Einstein, letter to Willy Aron , January 14, 1943 (EA 33-296; ER p46). & letter to Murray W. Gross, April 26, 1947 (EA 33-321; ER p138/139) .
297. Latin formula of Spinoza (Ethics, V, XXXVI) that Einstein quotes as early as 1916 in his note on Ernst Mach (CPAE vol6 doc29) and again in 1948 (Religion and science: irreconcilable?; IO p52).
298. Einstein, telegram to Rabbi Herbert Goldstein in 1929 (EA 33-272; ER p49; NQ p197) . *The expression “ God of Spinoza ”* is frequently found in his letters to Maurice Solovine and Michel Besso. & On Scientific Truth, Interview for Kaizo (IO p262).
299. Einstein according to Esther Salaman, A Talk with Einstein, The Listener, vol 54, p370,1955 (ER p123; NQ p194).
300. Spinoza, Ethics, IV, XXVIII, demonstration. & II, XLVII.
301. Einstein, letter to Willy Aron, October 17, 1946 (EA 33-301; note 195). Einstein visited Spinoza's house in Rijnsburg on November 2, 1920.
302. Einstein, (EA 31-18; ER p43).
303. Einstein, (EA 33-291; NQ p200).
304. Einstein after George Sylvester Viereck, Glimpses of the Great (ER p48, or NQ p99).
305. Einstein, letter to Dagobert Runes, September 8, 1932 (EA 33-286; ER p45).
306. Where is science going? Max Planck. Epilogue, Socratic dialogue between Einstein and Murphy James (EPH p481).
307. Einstein, letter to Eric Gutkind, January 3, 1954 (EA 59-897).
308. **The Ultimate Metaphysical Principle is the couple “being/non-being” identified as “atoms/the void” for Democritus and Epicurus, the infinite substance of infinities for Spinoza, the logical simplicity of the laws of nature for Einstein, the principle of Reason expanded and universalized for me.**
309. Epicurus, Us 219 and letter to Menoeceus, [122, 128, 135].
310. Spinoza, Treatise on the Reform of the Understanding, I, 1 and 10. Ethics, II, preface.
311. Democritus after Cicero, Tusculanes, V, XXXIX, 114 (DK A-XXII; p412) & (DK B-XI; p501).
312. Epicurus, Vatican Sentence No. 10. & Lucretius, I, 73-75.
313. Spinoza, Ethics, V, XXIII, scholia.
314. Cicero, on the nature of the gods, I, XXIII & XXX & XLIV. Spinoza. Letter 42 from Velthuysen to Osten.
315. Lucretius, On the Nature of Things, Canto V, 1198. Spinoza, Ethics IV, 37, scholium I.
316. Philodemus of Gadara, Us 13 & Us 143. Us 148.
317. Democritus, pseudo-Hippocrates, letter no. 17.
318. Jean Salem, Democritus: grains of dust in a ray of sunshine. (p327).
319. Lucretius, On the Nature of Things, Canto II, 651-660.
320. Seneca, Natural Questions, II, XLV. Varro after Augustine, City of God, VII, VI-XIII-XVI.
321. Metrodorus of Lampsacus after Tatian the Syrian, Discourse against the Greeks, XXI. Athenagoras of Athens, Apology for the Christians, VI.
322. Spinoza, Ethics, II, XLVI & XI and XLV. Ethics, XXXVI.

323. Democritus according to Cicero, On the Ends, V, XXIX (DK A-CLXIX; p488).
324. Democritus according to John Stobaeus, Florilegium, III, 47 (DK B-CLXXXIX; p547)
325. Epicurus, Letter to Herodotus [37] & Vatican maxim no. 27 and Us 219.
326. Lucretius, On the Nature of Things, Canto III, 1068.
327. Spinoza, Treatise on the Reform of the Understanding.
328. Einstein according to Carl Seelig, Helle Zeit-Dunkle Zeit, p71.
329. **The corruption of ancient Indian philosophy.** Kapila founded the first Indian school (Samkhya) with a rationalist, atheist, though dualist conception of reality. At the same time, Charvaka founded the Lokayata school, which proposed a sensualist, hedonistic, and irreligious materialism, but irrationalist because it denied the universality of causality, logical inference, and reality not perceptible by the senses. Later, Kanada (Vaisheshika) proposed a possibly atheist atomist materialism. An ultra-rationalist synthesis of these early thinkers should have allowed an Indian Democritus to emerge, but the theological reaction (Vedanta) quickly transformed Kanada's doctrine, then that of Kapila, into religious systems dominated by a transcendent God and caused Charvaka's school to disappear. **Among the Persians,** the theological reaction began in the 11th century with Al-Ghazali and was accompanied by the end of the golden age of Arab science.
330. Plato introduces the word “θεολογία” (= theology in Greek). (Republic, II, 379a).
331. Plato, Republic, II, 379. Timaeus 30c-31b.
332. Plato, Sophist, 246. Phaedo, 97b. Timaeus, 46d. Laws, X, 886e-887.
333. Plato, Laws, X, 887c.
334. Plato, Laws, X, 895.
335. Plato, Laws, X, 909a .
336. Flavius Josephus, Against Apion, II, XXXVI.
337. Plato, Laws, IV, 716c and VII, 803c and XII, 942c.
338. Diogenes Laertius, Lives of the Illustrious Philosophers, Democritus (DK A1).
339. Celsus, True Discourse, Against the Christians, III, 66-72, 94.
340. Spinoza, Theological-Political Treatise, preface.
341. Voltaire, History of the Establishment of Christianity , IX.
342. Nietzsche, Beyond Good and Evil, preface.
343. Saint Augustine of Hippo, the city of God against the pagans, 8, 5.
344. Francis Bacon, The Advancement of Learning.
345. Aristotle, On the Generation of Animals, V, VII (Democritus DK A-LXVI).
346. Aristotle, Metaphysics, XII.
347. Seneca, letter to Lucilius no. 65: Opinions of Plato, Aristotle and the Stoics on the first cause.
348. Epictetus, Conversations, VI.
349. Epictetus, Manuel.
350. Descartes, Discourse on Method, 3.
351. Descartes, Metaphysical Meditations, preface and fourth meditation.
352. Descartes, letters to Mersenne of April 15 and May 27, 1630.
353. Descartes, Discourse on Method, 3.
354. Descartes, Discourse on Method, 5.
355. Condorcet Sketch of a historical picture of the progress of the human mind, 9th epoch.
356. Kant, Critique of Pure Reason, preface to the second edition (B XXXIV).
357. Berkeley, Dialogues between Hylas and Philonous, preface

358. Kant, Critique of Pure Reason, preface to the second edition (B XXX).
359. Kant, Prolegomena to Any Future Metaphysics.
360. Kant, Critique of Pure Reason. The architectonics of pure reason. (A849/B877).
361. Kant , Prolegomena to All Future Metaphysics.
362. Kant, Critique of Pure Reason. Canon of Pure Reason. Third section. (A829/B857).
363. Nietzsche, The Antichrist, 10 .
364. Nietzsche, Twilight of the Idols, Untimely Strolls, 16.
365. Nietzsche, The Gay Science, 335.
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Acknowledgments : I would like to thank A. Andriot for the stylistic corrections and for the long evenings spent discussing these ideas. They allowed me to refine and correct some of my designs.

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Version : This revision is dated 14 August 2025(a pre-edition has been available online since April 23, 2009. The work has undergone some improvements since then).

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