

INTRODUCTION

Volume XII, the last one in the structure of this *Opera Omnia*, includes articles and books dealing with science that were published in the early years of my production. Even though their contents and style may now sound quite outdated, I nonetheless decided to insert them here as a reminder of that period and the issues in which I was then interested. In particular the prologue, “A Synthetic Vision of the Universe,” is remarkably outdated, but it presents some insights that I still consider meaningful.

The theme of this book starts with the conception of time linked to a scientific vision of reality.

*Omnia tempus habent*¹
[All things have a time of their own]

This time is not something that envelops the being externally, but an integral and specific dimension of each being that *is*, in the sense that it *has a duration*, and its duration consists precisely in the fact that it *is* this particular being and not another.

The time of the technological civilization has caused a profound conflict within Man by altering his life rhythm. Should Man refuse technology or, on the contrary, reinforce it and be integrated in progress? This is an inescapable conflict.

At this point it should be noted that technology has an ontonomic nature, and therefore an intrinsic relationship both with the world and with Man. In fact, the relationship between Man and technology is as deep and intimate as that between technology and nature. Man generates technology by starting from nature. Technology is originally produced by Man’s interest in the earth and matter.

*Et tempus non erit amplius*²
[And time will be no longer]

The Running-Out of Time

Every cosmivision based on the idea of creation implies a belief in the finiteness of time and space. This finiteness leads us to imagine a beginning of time, and also an end. Now, time is not infinite—not because it all gets used up, like a sort of path along which Man is traveling, but because Man too is not infinite. The end of time does not mean, therefore, that the path suddenly vanishes, leaving things unfinished. The finiteness of time means that time runs out because things reach a fullness of existence. Time finishes because beings reach their end. The end of time means the end of Being inasmuch as Being is temporal.

We have spoken of the running-out of time because the temporal dimension is the one closest to our way of conceiving the human situation; but we could equally well have

¹ Qo 3:1 as it was translated in the Vulgate Bible.

² Rev 10:6.

considered the coming to an end, or the contraction, of space. We speak of the conquest of space, but we should not forget that this mastery of space means a diminution of space as distance, and therefore a diminution of space as such.

In this perspective, we try to see how, by a paradoxical somersault, technology can serve, on the one hand, to reconcile Man with nature, and on the other to humanize the cosmos.

The Reintegration of Man into Nature

Technology allows a new relationship between Man and Nature—that is, a relationship of *ontonomy*.

Almost all civilizations lead Man to self-awareness. If “primitive” Man considered himself as an object among objects, and felt lost within the cosmos that he was part of, civilized Man is becoming increasingly self-aware and no longer considers himself as part of “nature,” or as an “object,” but as a “spectator” of the world. It is the age of knowledge, and above all reflexive knowledge.

Technology cuts the ground away from under Man’s feet and removes his support; it breaks both its natural and rational rhythm and turns Man into a thing once more, but in a very particular way. Through technology, Man loses his rhythm and imposes vertiginous rhythms on nature; through technology, Man ceases to be a passive spectator of the universe and becomes an actor. Activism is one of the illnesses of our century because it has found favorable conditions as a reaction to an essentialist immobility.

So, technology reduces the distance between Man and nature, and perhaps also matter, to its true proportions. (This distance had led Man to believe that he was the king of nature, the center of the universe, and belonged to a different “class” from the rest of creation.) Technology helps us rediscover our kinship with matter, and our common destiny with the universe.

Technology can kill Man, but it can also help him to achieve his being. One should not forget that Man, a temporal being and a pilgrim, is not isolated, but forms a whole with the world and with others, and is part of a universe that is also transitory and in a state of gestation.

Nature’s Entry into Man

A preliminary consideration is necessary: this “nature” that Man is reentering by means of technology is no longer the pure and simple nature of a subjugated world, as it might seem in the age of heteronomy, but a different nature, transformed by Man’s very entry into it.

This is a field to be approached with great prudence. Technology also wounds the cosmic rhythms and transforms nature in a way complementary to that in which it transforms Man. Today we talk of an “anthropization” of nature. In any case, it is a fact that nature is elevated insofar as it is, so to speak, taken on by technology. Thanks to technology, matter imitates Man more closely; and a machine is nothing more than an imitation of Man. All machines are anthropomorphic. We are told that machines are to replace human beings in their activities, their work and tasks, and this is true, but they do so precisely by imitating Man. Nature thus acquires a human aspect and arouses within itself latent possibilities; one could say that it undergoes a process of spiritualization. The phenomenology of technology reveals a certain convergence: Man and nature are traveling toward a common goal in one and the same movement. All the works of Teilhard de Chardin, in particular *L’Avenir de l’Homme*, develop this theme in full.

This dynamic process is still happening, and will continue, and we think we can detect a participation of the machine in this dynamism. In fact, the machine transmits something

human to matter; human orders are obeyed and carried out by nature; human structures are copied and followed by machines. A machine may be a poor imitation of Man from our point of view, but from nature's point of view, the machine represents an important achievement of matter.

Of course a machine is not a living organism, but it should be added that the organism of which the machine aspires to be a part is not its pure mechanical structure, but a more complex structure, of which Man is also a part. The complete organism of the machine is supramaterial. In the same way that a finger, or a stomach, when it is cut off from its vital function and from its connection with the totality of the organism is dead and no longer has any vital function, so a machine, when removed from its "vital" link with Man and society, is dead and no longer organically related to the technological supra-organism. It has no life or meaning in or for itself, but this is also true of any part of a living organism. Since Man, as such, has believed over these last centuries that he is the outcome and perfect achievement of creation, one can understand his resistance toward allowing his primacy to be taken from him by an organism in which he would be no more than an organ. It is evident that in this symbiosis between Man and machine the individual loses his autarchy.

And so, it is no longer a question of rediscovering Man's place in the cosmos, nor of reviving the old discussion on anthropomorphism and cosmocentrism. Since its first beginnings, science has believed it could destroy the anthropocentric idea of the world, but the universe without Man is lost, just as Man is lost without the universe.

Man and Science

We must bear in mind the antinomy between modern cosmology and traditional cosmologies.

What we are trying to say is very simple. We have relativized all the past conceptions of the world; we speak about the Aztec universe, Hindū cosmology, and so on, and anthropologists explain how every culture constructs its own vision of the world in which it lives. It seems however that modern Man does not wish to apply that vision to himself and, when it comes to present-day science, he makes it into an absolute, converting it into the model through which he judges all the other cosmovisions, considering it to be a definitive acquisition of the human spirit. For some, the Moon is a Goddess, for others it is a living being, for others the home of their ancestors, and for others still it is the symbol of certain rhythms; but "we know perfectly well" that it is an inert mass orbiting at a certain distance from the Earth, with craters we can see. Furthermore, we believe that we have a deep knowledge of it because we have gathered specimens from its soil and our feet have stepped on it. In short, we believe we have demythologized and demystified the moon.

We started by saying that what we want to say is very simple, but it is also serious, difficult, and dangerous. It is *serious* insofar as it delineates the destiny of the world, the meaning of human experience over the last six thousand years. It is *difficult* because it implies a synthetic vision, on the one hand, and a selective one, on the other, in order to catch the global meaning of the situation that has been arrived at not only by Man but also by the life of our universe. It is *dangerous* in that it conditions our actions. We may be wrong in our judgment or run the risk of falling prey to facile simplifications, but this is no excuse for not taking sides, because even to abstain is in itself a decision. And practice is always dangerous.

Over the last centuries of Western tradition there has been such fear of looking obscurantist toward the success of modern science that no one has dared to actually state out loud the radical incompatibility between a scientific vision of the universe and

the Christian tradition. Where are the “heavens” in Newtonian space? What does the Ascension of Mary in body and soul imply? *What* is present in the Eucharist? What is the meaning of Angels and Archangels, of Thrones and Cherubs, who sing to the glory of God? The very resurrection of Christ is mere nonsense if one accepts the scientific conception of the human body. It is true that Christianity scorned reason and identified faith with a series of more or less superstitious beliefs, and abused its power: hence its sense of guilt (of which it is arguably aware) that it then attempts to redeem by going in completely the opposite direction and embracing the scientific cosmovision uncritically. Here, however, we restrict ourselves to only one point: *neither science nor modern technology represent a cultural invariant; they are neither neutral nor universal and thus “universalizable” without destroying other cultures.*

It is not by chance that modern science and technology were born in the bosom of Western culture of a Mediterranean, Christian, and Atlantic origin. In fact they are not only bound de facto to Western culture but they are also bound de jure: they have a common destiny. So-called modernization, a problem reflected in two-thirds of the world, is the equivalent of Westernization. De facto, despite the efforts to reap the “benefits” of science and technology, experience demonstrates that it is not possible to avoid introducing the lifestyle and thought of the West. De facto, moreover, technology cannot establish itself without planting its roots in the soil and subsoil. To simplify, one could say that the roots correspond to the Christian desire to save the world, the soil to the Hellenic desire for knowledge, and the subsoil to the pragmatic vision of reality.

Introducing modern scientific ideology into two-thirds of the world, when it is not something that has been generated in the bosom of their own culture, is like the strategy of the Trojan horse. Within the bowels of technology there lies hidden a whole host of basic notions that, when transplanted from their natural environment, unbalance and destroy the basic intuitions of other cultures—with the obvious risk of reactions, rebellions, and catastrophes.

My thesis is not that some, or all, or almost all the cultures, if the march of humanity so demanded, need to die. Nor does it say that Western culture is evil or that other cultures are sublime. Instead, it suggests that science and technology (not Western culture tout court) only represent one aspect of the human spirit. Of course, this does not mean that all scientists and technocrats are perverse. Not all of those who enforced slavery in the past were human monsters, nor were all the crusaders criminals or all the colonialists oppressors. However it has taken us several centuries to realize this. What we lack nowadays is not only a judgment of the past or a *Generalreformation der ganzen Welt*, as the *Rosicrucians* (Johannes Valentinus Andreae) have been preaching since the seventeenth century; we do not merely need a reform but rather a fundamental transformation, a radical *metanoia*, but this does not mean that we must go back to a romantic or unreal kind of primitivism.

The thesis does not affirm but does suggest that technology can become dehumanizing and consequently very negative, even though individually one can make good use of it: from the point of view of an individualistic mentality, this is quite evident despite the danger of despotism of every sort (there is something artificial about wanting to restrict the possession of atomic weapons just to some countries, considered to be morally superior to others). This reasoning does not, however, bear in mind the intrinsic dynamism of the proliferation, that is, cancer, of the technological system, which surfaces not only in phenomena like the arms race, but in general all throughout the industrial world linked to the market economy. This is why we are moved to advocate not the destruction of technology but rather our emancipation from it.

Let us now consider universality: *neither science nor technology is universal*. On the contrary, they derive from premises that are bound to a certain type of culture.

What has caused confusion, even among the greatest scientists, is the almost magical power of words. Today we still call “science” the continuation and perfecting of Galileo’s “new science,” which is so “new” that it is no longer science in the traditional sense. Traditionally, science meant knowledge, and knowledge was understood to be that faculty of the human spirit by which Man could come into contact with reality so as to participate and commune with it for a spiritual rebirth, thanks to a natural communion with reality: *similia similibus cognoscuntur*.³

The field of philosophy has also been invaded by the scientific mentality. The influence of the new science on illustrious minds such as those of Descartes, Kant, Hume, Berkeley, and others is well known. In a subtle way, this influence is still there today. For example, it has actually been possible to write that knowing is interpreting. In that case, philosophy would be pure *hermeneutics*. Certainly there is an interpretative dimension to every cognitive process, but knowing is far more than simply interpreting; knowing is more than “decoding” a written work, reducing the distance between a subject and an object. Knowing is more than deciphering a message. To know is to identify with the known thing, to be part of it, albeit at the necessary critical distance. One cannot really know if one is not convinced of the truth of that which one knows. To know is a process of conversion. It implies communion, a loving embrace that places us in communion with reality; the interpretative aspect is merely one element. *Hermeneutics requires nothing more than reflection; not so does knowledge*. Reflective knowledge, as such, is aware and interprets but, as a form of knowledge, possesses something that hermeneutics cannot grasp.

Modern culture has created a “fourth world” to replace the world of Gods, Men, and Things because, as it feels insecure in itself, it has attempted to escape to the realm of a fourth world that it is able to control. It is important to underline the need of modern Man to create a world that he can control, a world where life can be lived in peace and without fear. But he is beginning to regret the loss of cosmic trust (in *rta*, *dharmā*, *ordo*, *kosmos*); in other words, the trust that Reality is something we have been given and with which we can identify; that Reality is to be experienced, first of all, and then known, and thirdly transformed by living it.

Modern Man has lost this basic trust, this attitude of respect for Reality. Nowadays it is has become necessary to examine everything, to discover all the secrets, to split the atom, to have everything one has not yet, and ensure that everything one needs is available by relying only on one’s own power, one’s own intelligence, and what one can directly control.

Perhaps this is what the *novum* of modernity consists in. Life in the three worlds implied a certain trust in reality, in what we had been given. Things worked well enough, so to speak, but thanks to an intrinsic dynamism and not because of an extrinsic *chiquenaude* (Descartes), a mechanical impulse. Nature is wise. It must be watched over, listened to, and also improved on—because these are natural impulses too. The classical purpose of alchemy consisted in completing the work of creation that the Creator himself urged us to finish. Here the dignity of Man was quite clear: he was called on to participate in a *synergieia* with the Divine.

All this changed with the technological complex that Man has created for his own benefit. Today he no longer needs to fear the Gods (by virtue of Science), live in dread of nature (Technology), or be terrorized by other people (Democracy). But he does need to be constantly vigilant in order to prevent energy running out, or the System collapsing. It is not by chance that so-called terrorism is becoming the obsession of the technocrats.

³ Shared likeness is the ground of knowledge.

This fourth world is not able to recycle itself, but it *can* fall apart, resources could run out, and it could self-destruct together with the whole of humanity, including life itself on the planet. The temptation of mass suicide (“cosmicide”) is a *novum* in the history of human consciousness.

Simple trust in Reality has been lost. The world, the planet, and even Being, in a sense, could cease to be. Nothing guarantees its permanence. If time had a beginning, it can also have an end. Non-Being could prevail over Being. The human adventure is expanding and turning into a cosmic destiny. An external God does not seem inclined to intervene—considering His silence in the face of the worst human disasters.

The fact that both science and technology were born in Western Europe is not just a historical accident: science and technology cannot even be understood except in their cultural context. One could say that at least mathematics is universal, but we cannot be sure about this either: without going back as far as Pythagoras, we could cite Cassiodorus who in the sixth century defined *music* as “the science of numbers.” But there is more. The very concept of universality implies a notion of objectivity, that is, a possibility of abstraction from any form of subjectivity, which is certainly not a cultural invariant that could be defined as universal.

Finally, *neither science nor technology is “universalizable”* without steamrolling all the other cultures and reducing them to just relatively exotic folklore or tourist industries for the benefit of the “first world,” as we are already witnessing.

There is a basic assumption behind our thesis: the legitimacy of cultural pluralism and the overcoming of a monodirectional evolutionism. Let us suppose that the evolution of humanity has no reason to go in a single, linear direction. Evidently one could think that up to now humanity has proceeded virtually in darkness, but at last *Homo technologicus* can bring together the whole heritage of humanity within himself, so that everything converges in a single type of Man, the representative of the technocratic civilization of today and forged upon the scientific model. If such analyses were valid, the consequence would be that this is the only path for humanity to follow. The other cultures would be destined to being absorbed by scientific civilization.

This ideology is far more widespread today than we might think. One frequently hears the statement that 90 percent of the great “inventors” of humanity have lived in the last fifty years, and that, before technological progress, Man’s life on earth was not much more than a desperate, savage fight for survival. Other cultures are tolerated like accidental, perhaps exotic, extras, and other religions as a *praeparatio technologica* for the new superman. There is a great difference between Nietzsche, Aurobindo, Teilhard, and the modern technocrats, but they all share a certain centripetal vision of reality. Our thesis states, instead, that Reality is multicolored, and denies the universal validity of the “monochrome” vision of modern science.

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The volume is made up of two sections, although the contents are constantly interwoven.

The first section concerns time and space, which is a subject that forms the basis of a vision of reality, not only from a philosophical point of view but also from a scientific one. Because the subject of time is perceived differently from Western and Eastern viewpoints, the section has been divided into two visions: the Eastern vision underlines the aspect that is more closely linked to Being, while the Western one is more linear, with a beginning and an end, an alpha and an omega.

The second section deals with a more Western conception of science. It begins with an article dedicated to Max Planck, the founder of quantum physics with philosophical repercussions, which is followed by an outline of my doctoral thesis in science, *The Ontonomy of Science* (1961). The section concludes with a leap of almost half a century with an essay on modern science leading on to technology, "The Narrow Door of Knowledge." Two articles underline the importance of becoming emancipated from science and technology, not so much as a rejection of their value but more as an overcoming of their conditioning.