

Teilhard de Chardin: Evolution for a believing scientist.

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Pierre Teilhard de Chardin (1885 - 1955) is a major figure in the history of relations between Christian Churches, particularly the Catholic Church, and an evolutionary vision of the world. In the twentieth century, he is the person who contributed most to drawing together the scientific world and the religious world. His influence largely overflows the borders of his country of origin: his work has been translated into numerous languages and still generates a large number of commentaries. All sorts of thinkers are interested in his thought, but it is clear that in general he has been better received by the general public than among specialists, either scientific or theological.

The difficulty of interpreting his thought arises because Teilhard is neither a professional philosopher nor theologian. He never claimed to be one; instead, he sought to “make one see” (*faire voir*), to return to a sort of elementary level of experience from which his thought could be developed.¹ As a result, his concepts do not always have the precision that one could rightly expect from an expert philosopher. His concepts are most often evocative and suggestive images capable of provoking reflection. The Dominican theologian Olivier Rabut speaks of “very accurate ‘mother-intuitions’ (*intuitions-mères*), which are capable of providing new-blood to Christian thinking.”² The absence of rigor in the concepts which he uses (often invented by himself) must not preclude appreciation of the relevance of his fundamental intuitions. Could such an innovative way of thinking flow as easily from the mould of older notions?

In addition, his reflection is underpinned by a desire for a *global vision* of the world. Against the tendency of modern science towards greater specialization, he tries to draw out an overview through a multitude of images. For him, the world is “one”, or at least it tends towards unity: “to be more is to be more united.”³ This unity is the truth of being more than distinctions or definitions. It does not seek to classify organisms in various categories, but to perceive what they have in common, what brings them together. However, for him, this unity is yet to come. It does not yet exist in the current state of the world. But, there does exist in every being a “tendency”, an “aspiration”, a “desire” towards unity: humanity experiences a characteristic of all being. The evolutionary process is nothing other than this tendency, stretched out to the whole of the cosmos.

It is first necessary to look again at Teilhard’s relationship with the scientific approach in general. After that, I will enter into his way of thinking, by reconstructing its movement: a search for the absolute, which motivates his interest in life and above all in the “human phenomenon”. This allows us to see where he situates scientific inquiry in the search for the meaning of life. I will then examine his complex relationship with Darwinism, and proceed by examining the central place of the figure of Christ, who reconciles the advance of the world with the growth of the Kingdom of God.

It is certain that, in the work of Teilhard, theological reflection is not only an appendix, as it seems to be the case in *Le Phénomène Humain* where the “Christian phenomenon” comes at the end as an epilogue. David Grummett helpfully recalls that “Teilhard’s theology provides the hermeneutic for the whole of his thought”.⁴

Nevertheless, Teilhard aims to dialogue with the scientific world. This dialogue is not lacking in consequences for the representation of God.⁵

1. TEILHARD AND THE SCIENTIFIC WORLD

Teilhard's work was received in the scientific world in very different ways. As an example, shortly after the appearance of the English translation of Teilhard's principle work, *Le Phénomène Humain*, Sir Peter Medawar, winner of the Nobel Prize for Medicine, delivered a systematic attack on the work, in an article in the journal *Mind*, which had a great impact in the English-speaking world.⁶ On the other hand, the historian of science, Joseph Needham, judged the *Le Phénomène Humain* "the work of a first-rate evolutionary biologist who knew his facts."⁷

Because of this, there has been a tendency to neglect his scientific work and reflection and concentrate rather on his more spiritual writings. George Murray wrote in 1967: "Discussion of his evolutionary theory from a more scientific point of view is relatively rare."⁸ This diagnosis was confirmed in 1992 by Ludovico Gallieni, who considers the analysis of his scientific works "a largely neglected perspective".⁹ We must recall some basic facts.¹⁰ His abilities as a researcher are undeniable. He was much appreciated by his first professor, the great French paleontologist Marcellin Boule, who wanted to make him one of his disciples. Teilhard's scientific works are numerous.¹¹ These received recognition by his being elected to the *Académie française des sciences*. His rejection by part of the scientific community is not due to his specialized publications but to texts in which he tried to conduct a fundamental reflection that he also intended as scientific.

It has to be recognized that a large part of Teilhard's texts are disconcerting for minds rigorously formed in the scientific approach. It is particularly true of *Le Phénomène Humain*, which moreover, according to its author, "must not be read as a metaphysical work, still less as some kind of theological essay, but solely and exclusively as a scientific study".¹² This first phrase of the work can be understood as a kind of protection against the sensitivities of Church authorities who had forbidden Teilhard to publish philosophical or theological texts. It can also be understood as the desire to reach a wider public than believers alone. By situating himself on the terrain of the universally shared "phenomenon", the author can speak to all people capable of reason.

What is problematic, therefore, is Teilhard's style. Christian de Duve explains why biologists rejected Teilhard by referring to his "grandiloquent style and his lack of scientific rigor."¹³ He notes however that Teilhard is better received by cosmologists. De Duve refers to John Barrow and Frank Tipler, who affirm that "the fundamental structure of his theory is truly the only structure in which the cosmos in evolution as presented by modern science can be associated with an ultimate meaning of reality".¹⁴

Another difficulty, in my opinion, seems to be linked to the importance which Teilhard gives to the "human phenomenon". For him, scientific research has no other sense than to help humanity reflect on its presence in the Universe. There exists an intimate connection between humanity and the rest of the cosmos, just as there is a connection between all the components of the cosmos. That is the point and purpose of Teilhardian research. One can understand why this central idea enters into conflict with that of Jacques Monod, who aims at denouncing the "Old Alliance" between humanity and nature by showing that "at last man knows that he is alone in the indifferent immensity of the Universe from which he has emerged by chance. Neither

his destiny, nor his duty is written anywhere.”¹⁵ Monod rejects the entire idea of an evolutionary direction. In contrast to this, the thought of Teilhard is in line with the doctrine of those who defend the idea of the progress of humanity. It is in line, for instance, with the thought of his agnostic friend Julian Huxley, who wrote the preface of the English edition of *Le Phénomène Humain*. One must recall, however, that the idea of evolutionary progress, allegedly demonstrated particularly by the development of self-regulation, by the growth of the complexity of organisms or by their autonomy with respect to their external environment, is frequently contested by the majority of paleontologists.

George Murray proposes four reasons why Teilhard is convinced of a directed evolution, of an orthogenesis: first, because “he was not a trained biologist”; secondly, because Lamarckism was dominant during his early studies; thirdly, because his fundamental mentality was “continental”; and fourthly and “perhaps more decisively, his philosophical and theological presuppositions and beliefs were active in his cross-disciplinary judgments.”¹⁶ The first point is fairly widely confirmed. The second one, however, is contested by Ludovico Galleni, especially as regards Teilhard’s Chinese period. The scientific environment in Peking was more notably Darwinian, and Teilhard was influenced by it.¹⁷ As for the fourth point, the accent placed on the interdisciplinary dimension seems correct. It is this dimension that is often snubbed by the “specialists”.

Those who think that no communication can exist between disciplines as apparently diverse as the natural sciences, philosophy and theology, or that the knowledge of the world and the meaning of life are two domains that should remain radically separate, will, by necessity, be offended by the Teilhardian style. However, those who judge that the gulf separating the world of science from the world of life causes detriment to humanity are on the contrary attracted by the ambition of his approach. Thus, Georges Gusdorf criticizes the “technical anthropologists”, who enclose themselves within their discipline “without ever taking into consideration the cosmic scale of the human phenomenon in its totality”. So, the “visionary genius” of Teilhard opens the way for a renewal of anthropology.¹⁸

If Teilhard’s scientific reflection remains relevant it remains so because of its global vision of the world. I already referred to the support he enjoys from cosmologists. One can also think of the ecological sensibility, as expressed in the works of Vladimir Vernadsky or in those of James Lovelock, this latter being another author criticized by many a biologist. In this regard, as suggested by Galleni, Teilhard’s idea of a geo-biology could be considered a sort of anticipation of the Gaia hypothesis.¹⁹ This discipline, which Teilhard tried to launch in the 1940s, consists in taking into account the totality of phenomena constituting the living world: “to study living beings in their totality as a single closed system.”²⁰

2. A SEARCH FOR THE ABSOLUTE IN A WORLD IN GENESIS

Since his youth Teilhard had been interested in natural history. His father introduced him to the discovery of nature. He felt particularly drawn to rocks, because in his eyes the mineral world reflected the consistency of existence. In his autobiography, *Le cœur de la matière*, written towards the end of his life, he insisted on the search for consistency, for the absolute, for the “sense of plenitude.”²¹ Straight away, his scientific interest became combined with a *mystical aspiration*: contact with nature leads him towards the “Spirit”. It was not simple curiosity that made him collect rocks or fossils, but the fact that these different objects reflect something

common from the same world.

An important discovery, which he himself qualified as an upheaval (*renversement*), is that the true consistency he had been seeking is not in the minerals as such. It lies within the development of being, within its evolution. At the outset of his reflection, the living organism has no great value: it is too fragile. Nevertheless, he perceives that this fragility is a strength, because the living organism can be transformed. What interests him is neither stability nor the permanence of being, but *its capacity to become something else*, on condition that the change indicates a *direction*, a goal. Later on, in the 1920s, he will reflect on the central importance of the human organism, the organism that pushes to the extreme this capacity of self-transformation and of transformation of the world.

It is during his years of formation that he discovers the great book of Henri Bergson, *L'évolution créatrice* (1908). This work confirms his intuition of the profoundly dynamic nature of being. In his *Note on Progress*, a text of 1920, Teilhard assumes it is obvious that the world in its present state is the “outcome of movement”. He adds: “Nothing is comprehensible except through its history. ‘Nature’ is the equivalent of ‘becoming’ or self-creation: this is the view to which experience irresistibly leads us.”²² Here, one needs to note the two fundamental elements in his thought: history and experience.²³ In spite of all his admiration, Teilhard thinks nevertheless that Bergson didn’t go far enough. He appreciates Bergson’s capacity to highlight the importance of evolution as such, but he criticizes him for thinking that evolution has no defined goal. For Bergson, it is a pure movement. For Teilhard, the movement “tends towards”. What interests Teilhard is not the process as such, but the design that this process manifests.

This research leads him to want to unearth the laws behind the observed phenomena. The most famous – and most controversial – law is the law of “complexity–conscience”, which he describes in *Le Phénomène humain* in the following terms: “Spiritual perfection (or conscious ‘centricity’) and material synthesis (or complexity) are merely the two connected faces or parts of a single phenomenon.”²⁴

3. THE HUMAN PHENOMENON

Up to now, we have restricted ourselves to the observation of phenomena in an objective way. For Teilhard, this approach alone is not enough, because the key to what is real lies in the “human phenomenon”. His book, *Le Phénomène humain*, demonstrates the value of the human organism, which is that particular living system that is the most complex of all the different organisms in the biosphere.

The first aspect he highlights is the continuity between the human organism, the other living things and the world of matter. The human world constitutes a *noosphere* that is inscribed within the *biosphere*, above the *lithosphere*. Within the entire universe, and particularly on Earth, everything is interconnected. His second aspect marks more clearly how the nature of human beings differs from that of other beings. With the emergence of human beings, a threshold is crossed in the history of life. Before that threshold is breached, one can take the evolutionary process to be mechanical, with individual organisms adapting themselves to their surrounding environment. With the emergence of humanity, we have the eruption of consciousness, in other words, of *freedom*. It is true that some animals can indeed transform their environment. Hence, the tool, in the broad sense of the word, is not a characteristic of the human species. With the advent of *Homo sapiens*, however, we

see something else happening in the history of the cosmos. Moreover, the specific human transformative capacity is not static but increases with the development of humanity.

The importance given to human freedom brought together Teilhard and the philosopher Edouard Le Roy, successor of Henri Bergson at the Collège de France. From 1921 onwards, their relationship developed steadily. Le Roy's lectures at the Collège de France were greatly inspired by Teilhard, but Le Roy made Teilhard aware of the importance of freedom.²⁵ A central notion is that of *invention*, which Le Roy defines as "a becoming, a progress, a perpetual springing up, an incessant genesis, a bursting out of an ever ascending creative tendency".²⁶ He contrasts it to habit. It has three characteristic elements. First, it is *the orientation towards the future* which remains, in part, *unforeseeable*: the goal itself has to be created, out of a call, a desire, or the lack of something. The goal attained may prove itself different from the representation of it previously formed. A second trait is the *tentative character of research*, "the struggle for adaptation between the ideas coming to birth and the body of acquired habits". A third trait links the individual effort (creation is an irreducibly personal process) with the ambient milieu which conditions and amplifies research, a "system of circumstances which prepares, orients or sometimes even launches it; and in every case supports, nourishes, strengthens and generates it."²⁷ For Teilhard, invention is defined as "everything in human activity that in one way or another contributes to the socio-organic construction of the Noosphere and to the development within it of new powers of 'arrangements of Matter'."²⁸

Teilhard willingly celebrates the role and the importance of *technology*. A significant event for him was the domestication of nuclear energy, which the world discovered with the explosion of the first atomic bomb in 1945. It is regrettable that this first manifestation should have been so destructive. What interests Teilhard, however, is that such an event demonstrates the human capacity to transform the world. "[Humanity] has succeeded in seizing and manipulating the sources that govern the very origins of matter."²⁹ Here is an example: "[humanity] not only can, but also must, for the future, collaborate in its own genesis."³⁰ One can understand the serious *moral questions* this raises. The issue is all the more crucial since, in an evolutionary world, a natural determination of human action does not exist. There is no permanent nature to conserve: "biological realities no longer provide a fixed set of conditions within which humanity makes moral decisions."³¹ Humanity becomes capable of self-transformation; but not all transformative action is in itself good. It is profoundly ambivalent. For Teilhard, transformative action manifests either of two spirits. The first he calls a Promethean or a Faustian spirit; the second he calls the Christian spirit. When transformative action is done according to the first spirit, it highlights the force of individuals acting for their own benefit without taking into account that they act with others and in relation with the world. When transformative action is done according to the second spirit, it reflects "the spirit of service and of gift". Humanity has to decide between these two spirits.³²

4. ANALYSIS AND SYNTHESIS

Teilhard is aware that the classical scientific inquiry cannot lead to the understanding of the human phenomenon as such, insofar as it is an analytic approach that breaks down its object into smaller parts, preventing the understanding of it as a whole. During his 1921 lecture "Science and Christ", he proposes his own contrasting approach.³³

In the first section, he highlights the importance of knowledge for humanity. Humanity seeks knowledge more than material well-being. It is this longing for knowledge that motivates humanity to go out exploring the world. This exploration of the surface of things is insufficient. One needs to add exploration of the deep side, so as to penetrate the “inside” of things. The scientist takes over from the explorer. The first kind of research pushes the analysis forward: it breaks down the complex system into simple elements to understand their function. But this quest is indefinite. It never reaches its goal. The more it plunges on towards the simple element, the more it loses sight of the phenomenon which it was supposed to understand. This is why Teilhard suggests doing an about-turn, passing from analysis to synthesis: “the only consistency beings have comes to them from their synthetic element.”³⁴ We have followed the direction of analysis, which breaks down its object, “whereas the absolute, the intelligible, lies at the centre, in the direction in which everything is heightened to the point of being but one.”³⁵ While the analytic path leads us towards the past, the synthetic path unlocks the future. For Teilhard, the two are linked together: “to the informed observer, analysis of matter reveals the priority and primacy of Spirit.”³⁶ Analysis necessarily leads to synthesis.

5. TEILHARD AND DARWIN

Teilhard’s taste for a synthetic vision and his valorizing of the “human phenomenon” as the key for the understanding of evolution situate him in a delicate relationship with Darwinian orthodoxy. While he has no problem with the idea of the evolution of living things, he shows little interest in the mechanisms of evolution. During his scientific formation, the dominant paradigm in France was Lamarckian. It is, therefore, not surprising to find him leaning more in this direction, even if his meetings with English-speaking researchers in China led him to be more interested in the Darwin’s theory.³⁷ In 1926, he wrote: “The specificity of Transformism is not the introduction of some mechanism or other into our explanation of life’s developments. It just is rather the vision of a universe, and especially of an organized world, whose parts are physically linked together in both their appearance and their destiny.”³⁸ The point which interests him is therefore above all the *interconnection* between elements. In the same article, which raises the question of the morality of an evolutionary vision of the world, he denounces the danger of identifying Transformism with “its mechanistic or materialist forms, and especially with Darwinism”.³⁹

It has been seen above that the central point in his reflection was the *question of the human being*. At various points, he recalls how the old anthropocentrism has been dismantled first by Galileo’s rejection of geo-centrism and then by Darwin. Modern science has definitely rejected this naïve form of anthropocentrism. Having avoided one danger, however, one needs to take care not to succumb to the opposite danger. For, after all these efforts, humans could be left thinking of themselves as “definitely submerged and flattened by the ‘temporal’ flow” their intelligence has managed to discover.⁴⁰ It is because of this that the Darwinian vision must be, not rejected, but *completed*. The reason for this is that today, in Teilhard’s view, the human being “now seems to be emerging in the forefront of Nature”. Teilhard further explains: “Far from being swallowed up by Evolution, Man is now engaged in transforming our earlier idea of Evolution in terms of himself, and thereafter plotting its new outline.”⁴¹

Thus, the novelty of humanity is this “transformation of transformism”. It is no longer nature which rules this process, but humanity. The human being is no longer “a simple branch of evolution”. On the contrary, we should say that “the principal shoot

of the tree of earthly life passes through him". Life "shows an absolute direction of progress towards the value of growing consciousness".⁴²

The rejection of anthropocentrism by modern thought has been excessive: "In the space of a few generations man saw, or at least believed, himself reduced to nothing in a universe in which [...] the thinking being now seemed no more than one poor little leaf among tens of thousands on the huge tree of life."⁴³ Between the psyche of humans and the psyche of non-human primates, there is more than a simple "difference of degree".⁴⁴ In the course of evolution, a split is being created: "We are gradually coming to see that anthropogenesis is specifically distinct from the rest of biogenesis."⁴⁵ Humanity is a "life of the second species", no longer at the centre of a static cosmos, but at the forefront of a dynamic cosmos, "that has acquired the faculty of foresight, of invention, and, by deliberate skill, of associating in an ever more marked process of planetary co-adjustment and co-reflection."⁴⁶ In contrast to the former kind of evolution, automatic and mechanical, a *new evolution* reveals itself in humankind, composed of three factors: invention, education (transmission of acquired knowledge), and socialization (convergence on oneself). This new mode of evolution does not pertain only to external observation, but primarily to "introspection".⁴⁷

Teilhard's criticism bears on the reduction of evolution to a mere "Darwinian survival".⁴⁸ As regards the human organism, the issue is not only about surviving by adapting to his environment, but of "super-living" in transforming this environment. Teilhard concedes that the struggle for existence presupposes a "tenacious sense of conservation, of survival".⁴⁹ For humans, however, there exists, more essentially, a "basic polarization" expressed precisely in a "zest for life". In Teilhard's view, Darwin gives too much importance to the competition between beings, while in fact it is biological convergence that wins out in significance over the struggle for life.

Because of this insight we must readjust our conception of matter, to respect the fundamental solidarity between the human being and the rest of the world. Teilhard extrapolates the fundamental human experience of freedom back to matter. Hence, he writes: matter tends, "in virtue of some initial (and, because initial, inexplicable) disposition of the *Weltstoff*" to become organized, to become complex, to become interiorized.⁵⁰ This seems to go in the direction of a Lamarckian biology. Teilhard in fact speaks explicitly of a "new form of speciation", which is demonstrated by the "accumulation and the transmission of something learned."⁵¹ He elaborates this by adding that a "common human foundation" arises, which may even have, in a retro-active manner, a chromosomal influence.⁵² An important text in *Le Phénomène humain* makes his vision of these things clearer. He distinguishes between a Darwinian biology (chance and environmental selection) of "little complexes" and a Lamarckian biology of "large complexes."⁵³ As regards the pre-human zones of life, the neo-Darwinians get things right, with their idea of an "automatic" appearance of life. From the emergence of human beings onwards, however, "it is the neo-Lamarckians who have the better of the argument."⁵⁴ Darwinian evolution puts the accent on the conservation of organisms, while human evolution valorizes transformation. Hence, evolution, "from being passive, tends to become active in the pursuit of its purpose [*en se finalisant*]."⁵⁵ Biological finality, it must be recalled, is not noticeable everywhere. It makes itself felt at certain levels of complexity. In Teilhard's terminology, the forces of choice and of internal direction increasingly prevail over mechanical processes. This aspect, this shift, could still be modest, even un-noticeable, to the scientific view situated at a distance. It is this aspect, however, that constitutes the power to renew the world. Understanding evolution requires a global vision.

6. CHRIST, SOURCE OF EVOLUTION

Up till now, the Christian dimension has not been explicitly dealt with. One needs to recall however that it is difficult to fully understand Teilhard's thought if one disregards this central element of his life. We have already mentioned the role within his research of a mystical aspiration towards the absolute. One may think of this aspiration as primarily a search for meaning.

In the lecture already quoted, "Science and Christ", he says that Christ "fills this empty place which has been distinguished by the expectation of all Nature."⁵⁶ If we understand the progress of the world as a synthesis that tends towards the unity of a common centre, we grasp also that the centre is at the same time internal and external to this progress of the world. Evidently, the difficulty consists in holding together this immanence and this transcendence. Teilhard has been accused frequently by his adversaries of immanentism or of pantheism. He defended himself against this accusation, particularly in a text of 1946, entitled "Outline of the Dialectic of Spirit". He first recalls the rise of the Universe where evolution "assumes a strictly *convergent* form which, towards its peak, produces a *point of maturation* (or of collective reflection)".⁵⁷ But this aspect, seen first as simply immanent to evolution, "presupposes behind it, and deeper than it, a transcendent – a divine – nucleus".⁵⁸ There is indeed a dialectic: the progress of the world does not by itself lead to the effective realization of this desired communion. The combination of the elements of the world does not produce anything more than an element of this world. Humanity, however, aspires to "more". It aspires not just to "survive" but to "super-live". This added aspiration can only be given to humanity from beyond the world, by God.

The God of Teilhard is, of course, a God who enters into the world to be one, to be incorporated, with it. "If the universe is rising progressively higher towards unity, it is therefore not only under the influence of some external force, but because in that unity the transcendent has made itself to some degree immanent."⁵⁹ God comes to inhabit the world and to transform it from the inside. This divine design expresses itself in the form of a universal communion. For Teilhard, every existent aspires to unity. The metaphysical scheme underlying his thought is of a "creative union".⁶⁰ In the beginning, there was multiplicity, but this multiplicity tends towards the one. This aspiration towards unity is at the same time an interior tendency to being and also an attraction towards an ultimate communion, the "Omega point". His metaphysical scheme represents at the same time the necessary outcome of the development of being, which he calls natural, and also a force exterior to the world that operates despite the tendency to dispersion, opposing the tendency to unification. Without doubt, nothing guarantees in advance the victory of the forces of unification. Teilhard's optimism is founded on his meditation on the victory of Christ over death. It is because, after everything has been said and done, life gets the better of death that it is *reasonable to hope* in the future salvation of humanity. So Teilhard does indeed take into account the existence of the forces of disintegration, but he believes that they will not have the last word.

It is true that these views do not result directly from the phenomenological observation of the world. Teilhard's talk of the "irresistible" character of progress must be understood in the sense of an act of faith. Such faith expresses a hope. His concern is to show that this hope is not arbitrary. He invites his readers to look at the unfolding of events in the world to verify the relevance of this hope. The encounter between theological hope and the observation of the world makes Teilhard accord a

central importance to the figure of Christ, God incarnate, dead and risen. The God of Teilhard is not only a creator, seen as a first cause, an abstract principle of being. For Teilhard, God is personal. God moves the world only by participating from the interior in the unfolding of its history.

7. CONCLUSION

Teilhard's contribution to scientific knowledge of the world is not negligible. The question whether his "science of the human being" is relevant remains open. He certainly contributes important elements of reflection regarding human beings and their place in nature.

Classic science is reductionist: it tries to relate complex phenomena, particularly pertaining to the living world, to simple elements, elementary particles and fundamental forces. For several centuries, this approach has shown its effectiveness. There is no serious reason to think that this style of doing science will not continue in the future. Nevertheless, as Alfred North Whitehead has stressed, this mode of explanation misses many elements of our experience. Is it possible to develop a more global science, a hyper-physics, as Teilhard would say – a hyper-physics that re-integrates these elements? This is debatable. It seems that such a new approach does not arise from science itself. At this level, the epistemological reflection of Teilhard remains insufficient. It is helpful to highlight more clearly that, for him, what distinguishes the human phenomenon from other phenomena in the world is not the frontier. It is not the frontier that distinguishes what arises from a scientific explanation and what arises from the interpretation made possible by human freedom.

This distinction allows the critical evaluation of certain suggestions that claim to draw inspiration from Darwinism to justify a vision of the world that Christian Theology can only refute. It is an abuse of Darwinism, for example, to deduce from it an interpretation that denies all specificity to the human person. To make of the human being a mere constituent of the world is to run the risk of instrumentalizing it. It runs the risk of reducing it to the status of a thing, in the same way as totalitarian political systems tried to do. Admittedly, a close comparison between Darwinism and Totalitarianism is clearly inappropriate. One must, however, be aware of the deviations that are possible once the validity of the theory in its own domain is not sufficiently distinguished from the extrapolated interpretation that one draws from it.

In other suggestions that allegedly originate from Darwinism, one may notice aspects that are less extreme: a tendency to fatalism, even to pessimism. John Haught writes: "even though a pessimistic interpretation of the cosmos is more the product of myth than of science, physicists and evolutionary biologists have generally displayed their ideas in such a way that tragedy seems to be their most natural setting."⁶¹ Consider, for instance, Daniel Dennett. In spite of the fact that his reflection is very rich, his vision remains explicitly "mechanical".⁶² One wonders whether, in his system, a novelty is really possible. The great number of components, associated with the game of chance, means that many combinations are possible, many more than we can imagine. All combinations, however, remain enclosed within a determined frame.

Biblical tradition gives a prominent place to the freedom of the human agent. The human person is the only creature created in the image of God, created in the image of a God who is himself a creator. Because of this fact, neither the sense of human existence nor the future of the world is determined beforehand, independently of the freedom of the human agent. The biblical notion of "God's design" expresses the divine will of a universal salvation, without prejudice to the material forms that

this salvation could take. Human freedom, however, is realized within a world. Teilhard has the merit of being the one who recalled the fundamental solidarity that unites humanity to the universe.

The main contribution of Teilhardian thought is not on the level of knowledge of the phenomena of the world. It is more in the sense of a hope breathed into a “world inhabited by anguish.”⁶³ This is in line with the opinion of Theodosius Dobzhansky, one of the fathers of the Synthetic Theory. After critiquing Teilhardian orthogenesis on the scientific plane, Dobzhansky writes in the conclusion of his work on humanity in the light of evolution: “To modern man, so solitary, spiritually imprisoned in the midst of this vast universe apparently denuded of sense, the notion of evolution of Teilhard de Chardin appears like a ray of hope.”⁶⁴ Teilhard shows clearly that there is no opposition in principle between the Christian tradition and an evolutionary vision of the world, on condition that the latter is not understood in a closed way. The knowledge of the mechanisms of evolution does not dispense us from the freedom to give meaning to our presence in the world.

NOTES

- ¹ Teilhard de Chardin, *The Human Phenomenon*, tr. Sarah Appleton-Weber (Brighton-Portland: Sussex Academic Press, 1999), 3.
- ² O. Rabut, *Dialogue avec Teilhard* (Paris: Cerf, 1958), 142.
- ³ *Le Phénomène humain*, (XXX), 25.
- ⁴ David Grumett, *Teilhard de Chardin. Theology, Humanity and Cosmos* (Leuven: Peeters, 2005), 5.
- ⁵ See Gustav Martelet, *Teilhard, prophète d'un Christ toujours plus grand* (Bruxelles: Lessius, 2005).
- ⁶ Peter Medawar, “The Phenomenon of Man,” *Mind*, January 1961; reprinted in: Peter Medawar, *The Strange Case of the Spotted Mice* (Oxford: Oxford University Press, 1996), 1–11.
- ⁷ Quoted in R. Speaight, *Teilhard de Chardin. A Biography* (London: Collins, 1967), 273.
- ⁸ George Murray, “Teilhard and Orthogenetic Evolution,” *Harvard Theological Review*, 60 (1967), 281.
- ⁹ Ludovico Galleni, “Relationships between Scientific Analysis and the World View of Pierre Teilhard de Chardin,” *Zygon*, 27/2 (1992), 153.
- ¹⁰ See J. Piveteau, *Le Père Teilhard de Chardin savant* (Paris: Fayard, 1964). A systematic study of Teilhard’s purely scientific work is still to appear.
- ¹¹ These works have been edited by Karl and Nicole Schmitz-Moormann and published by Walter Verlag (11 volumes).
- ¹² Teilhard de Chardin, *The Human Phenomenon*, 1.
- ¹³ Christian de Duve, *Poussière de vie* (Paris: Fayard, 1996), 476.
- ¹⁴ *Ibid.*, 478.
- ¹⁵ Jacques Monod, *Le hasard et la nécessité* (Paris: Seuil, 1970), 195. Christian de Duve is very critical of Monod: “on the scientific level, I feel much closer to Monod than to Teilhard. But it is true that I have opted in favor of a meaningful Universe and not one emptied of sense” (de Duve, *Poussière de vie*, 494).
- ¹⁶ Murray, “Teilhard and Orthogenetic Evolution”, 289.
- ¹⁷ Galleni, “Relationships between Scientific Analysis and the World View of Pierre Teilhard de Chardin”, 155.
- ¹⁸ Georges Gusdorf, *Introduction aux sciences humaines* (Paris: Belles lettres, 1960), 399.
- ¹⁹ L. Galleni, “How Does the Teilhardian Vision of Evolution Compare with Contemporary Theories?” *Zygon*, 30/1 (1995), 28.
- ²⁰ *Ibid.*, 29.
- ²¹ Teilhard de Chardin, *The Heart of Matter*, tr. Rene Hague (London: Collins, 1978), 16.

- ²² Teilhard de Chardin, “A Note on Progress”, in: *The Future of Man*, tr. Norman Denny (New York, Image Books Doubleday, 2004), 3.
- ²³ These two elements bring together the intuition of Teilhard and that of Alfred North Whitehead. This proximity has been noted several times. Joseph Needham thinks that Teilhard “could have gained much from Whitehead’s organic philosophy” (quoted in R. Speaight, *Teilhard de Chardin. A Biography*, 273). Ian Barbour studied this issue in: “Five Ways of Reading Teilhard”, *Soundings*, II/2 (1968): 115–45; and “Teilhard’s Process Metaphysics”, *The Journal of Religion*, 49 (1969): 136–59, reprinted in: E. Cousins (ed.), *Process Theology. Basic Writings* (New York, 1971), 323–50. See also the special issue of *Process Studies* (35/1, October 2006), partially devoted to Teilhard.
- ²⁴ Teilhard de Chardin, *The Human Phenomenon*, 27.
- ²⁵ See Edouard le Roy’s lecture *L’Exigence idéaliste et le fait de l’évolution* (Paris, 1927).
- ²⁶ In the original French: “devenir, progrès, jaillissement perpétuel, incessante genèse, tendance créatrice épanouie en gerbe toujours montante”, *Ibid.*, 34.
- ²⁷ *Ibid.*, 44.
- ²⁸ “The Human Rebound of Evolution”, in: Teilhard de Chardin, *The Future of Man*, 199.
- ²⁹ “Some Reflections on the Spiritual Repercussions of the Atom Bomb”, in: Teilhard de Chardin, *The Future of Man*, 135.
- ³⁰ *Ibid.*, 138.
- ³¹ David Grumett, “Teilhard de Chardin’s Evolutionary Natural Theology”, *Zygon* 42/2 (2007), 529.
- ³² “Some Reflections on the Spiritual Repercussions of the Atom Bomb”, in: Teilhard de Chardin, *The Future of Man*, 187.
- ³³ Teilhard de Chardin, *Science and Christ*, tr. Rene Hague (London: Collins, 1968), 21–36.
- ³⁴ *Ibid.*, 29.
- ³⁵ *Ibid.*, 30.
- ³⁶ *Ibid.*, 31.
- ³⁷ See Galleni, “Relationships between Scientific Analysis and the World View of Pierre Teilhard de Chardin”, 155.
- ³⁸ Teilhard de Chardin, *The Vision of the Past*, tr. Rene Hague (London: Collins, 1966), 137.
- ³⁹ Teilhard de Chardin, “Les fondements et le fond de l’idée d’évolution,” *Œuvres* III, (XXX), 190.
- ⁴⁰ Teilhard de Chardin, “The New Spirit”, in: *The Future of Man*, 79.
- ⁴¹ *Ibid.*
- ⁴² Teilhard de Chardin, “Evolution of the Idea of Evolution,” in: *The Vision of the Past*, 246.
- ⁴³ Teilhard de Chardin, “Man’s Place in the Universe,” in: *The Vision of the Past*, 216.
- ⁴⁴ Teilhard de Chardin, “Hominization and Speciation,” in: *The Vision of the Past*, 260.
- ⁴⁵ Teilhard de Chardin, “The Energy of Evolution”, in: *Activation of Energy*, tr. Rene Hague (San Diego: Harvest Book, 1978), 363.
- ⁴⁶ *Ibid.*, 363–4.
- ⁴⁷ *Ibid.*, 385.
- ⁴⁸ Teilhard de Chardin, “The Activation of Human Energy,” in: *Activation of Energy*, 391.
- ⁴⁹ Teilhard de Chardin, “The Zest for Living,” in: *Activation of Energy*, 233–4.
- ⁵⁰ Teilhard de Chardin, “The Reflection of Energy,” in: *Activation of Energy*, 324.
- ⁵¹ Lettre à Pierre Leroy, 6 mai 1953, *Lettres familières de Pierre Teilhard de Chardin mon ami. Les dernières années (1948-1955)*. (Paris: Le Centurion, 1976), 191.
- ⁵² *Ibid.*, 192.
- ⁵³ Teilhard de Chardin, *The Human Phenomenon*, 97.
- ⁵⁴ Teilhard de Chardin, *The Human Rebound of Evolution*, (XXX), 196
- ⁵⁵ *Ibid.*, 201.
- ⁵⁶ Teilhard de Chardin, *Science and Christ*, 34.
- ⁵⁷ Teilhard de Chardin, “Outline of a Dialectic of Spirit,” in: *Activation of Energy*, 144.
- ⁵⁸ *Ibid.*, 145.
- ⁵⁹ *Ibid.*, 148.

- ⁶⁰ See Teilhard de Chardin, *Œuvres* XII, 193–224.
- ⁶¹ J. Haught, *God after Darwin* (2nd rev. ed. Westview Press, 2007), 115.
- ⁶² Daniel Dennett, *Darwin's Dangerous Idea* (Simon & Schuster, 1996).
- ⁶³ M. Barthélémy-Madaule, “La problématique teilhardienne,” in: *Teilhard de Chardin, son apport, son actualité* (Paris: Le Centurion, 1982), 99.
- ⁶⁴ T. Dobzhansky, *L'homme en évolution* (Paris: Flammarion, 1966), 393.