Teilard De Chardin: On the Meaning of Consciousness

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THIERRY DE CHARDIN: ON THE MEANING
OF CONSCIOUSNESS

by

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of Loyola University in Partial Fulfillment of
the Requirements for the Degree of
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This one time, Lord, in the steppes of Asia, since I have no bread nor wine, nor altar, I ascend to the pure majesty of the real, and I offer you—my priest, upon the altar of the Earth—all the labor and misery of the world.

The rising sun lightens the darkness, a farmstead is revealed by the eastern light. Under the shifting focus of its rays, the surface of the earth awakes, turns, and begins again its fearful labor. At my Mass I will place upon my paten the expected harvest of this new effort. I will pour out in my chalice the vitality of all the grain which will be ground today. My chalice and my paten, these are the depths of a soul open large to all the forces which, in an instant, ascend from all the points of the globe and converge toward Spirit.

And thus come to me the memory and the mystical presence of those whom the light awakes to a new day.

To all without exception, I call out—those whose anonymous troop forms the innumerable mass of the living, those above all who believe in the progress of things and who today will passionately pursue the light.

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1Pierre Teilhard de Chardin, S.J., "La messe sur la monde d'apres le R. P. Teilhard de Chardin," Unpublished work of one page, framed in wood, and done in China at the request of Mme. Coombe (1923). [Unless another translator is given, all translations are mine.]
All those who will augment the world in the course of this day, all those who will diminish it, and too all those who will die—here, Lord, is the matter of my sacrifice.

Formerly there were found in your temple the first-fruits of the harvest and the first-born of the flocks. The offering for which you really wait is nothing less than the daily flowering of a world swept along by a universal becoming.

Receive, Lord, that total host which a Creation, drawn by your attraction, offers you at the new dawn. This bread, our effort, is, I know, of itself only an immense disaggregation. This wine, our sorrow, is still, alas, only a dissolving drink. But at the bottom of that unformed mass, you have placed— I am sure of it since I feel it—a sanctifying desire which makes us all cry out: "Lord, make us One."

Since you have given me, my God, an irresistible sympathy for divine matter in all its movement, I will rise up this morning in thought upon high places, charged with the hopes and miseries of my mother the earth, and there, strong in the priesthood which you have given me, above all that which, in human flesh, is preparing itself to be born or to perish under the rising sun, I will summon its rays of fire . . .
CHAPTER I

THE PROBLEM OF CONSCIOUSNESS

The appearance of Teilhard de Chardin's works has caused considerable stir in the intellectual world. Opinions as to their value have ranged from the highest praise to the abrupt dismissal of a charlatan. Bernard Towers tells us that "Teilhard's vision ... marks the most significant achievement in synthetic thinking since that of Aquinas. We cannot afford to neglect him, because, quite simply, he seems in so many matters, and those the most important, to be so essentially right. His genius has sown many seeds which, in as far as they fall on receptive and fertile ground, would seem destined to grow and flower according to the pattern of those same laws of development which lie at the heart of his system of thought."¹ But this enthusiasm is not felt by all. One P. B. Hedawar informs us that The Phenomenon of Man is "nonsense, tricked out by a variety of tedious metaphysical conceits, and its author can be excused of dishonesty only on the grounds that before deceiving others he has taken great pains to deceive himself. The Phenomenon of Man cannot be read without a feeling of suffocation, a gasping and flailing around for sense. There is an argument in it, to be sure—a feeble argument, abominably expressed ... but consider first the style, because it is the style that creates the illusion of

content, and which is in some part the cause as well as merely the symptom of Teilhard's alarming apocalyptic seizures.\(^2\)

In order to choose between these two encomiums, it is first necessary to understand Teilhard's doctrine. And, to do this, we must acquire an understanding of his basic terms since these have caused some difficulty. It is the purpose of this paper to come to an understanding of Teilhard's notion of consciousness which is fundamental to his vision. He informs us of this fact himself when he sums up in a simple affirmation the essence of *The Phenomenon of Man*: "that if the universe, regarded sidereally, is in process of spatial expansion (from the infinitesimal to the immense), in the same way and still more clearly it presents itself to us, physico-chemically, as in process of organic involution upon itself (from the extremely simple to the extremely complex)—and moreover this particular involution 'of complexity' is experimentally bound up with a correlative increase in interiorisation, that is to say in the psyche or consciousness."\(^3\) The thesis of this paper states that consciousness does have a meaning and that this meaning is significant. All are not of this opinion. For one, Father D'Arcey tells us that the

Obscurities of the evolutionary hypothesis are apparent in Père Teilhard's gallant work. He goes beyond the territory of the biologists and extends the hypothesis to mind and inorganic matter as well as to living organisms. As a result he finds himself forced to attribute some form of mind to the simplest material elements. It is a desperate measure. It cannot be verified; it is based on no empirical evidence, and it runs counter to


common sense, making meaningless the distinctions on which human inter-
course depends. If the rocket to be fired to the moon, or the table at
which I write or the dust collecting on the window has some form of con-
sciousness, meaning is taken out of what we call consciousness, and we are
as illogical as the Oriental who drinks water filled with micro-organisms
though he refuses to destroy any form of living thing.
Yet to make the general theory of evolution coherent, there is need
to introduce consciousness at the earliest possible stage; otherwise there
is no continuity, no one thing which evolves.
As the paper progresses, the counter-thesis to that of Father D'Arcy will be
proposed.

Our investigation of Teilhard's work will be limited to The Phenomenon of
Man which is considered to be his primary and most important work. Two chap-
ters will be given to an analysis of this work from the viewpoint of the growth
of consciousness. A chapter will then be devoted to an examination of various
critics, both pro and con, who have investigated this notion. Finally, the
last chapter will sum up the various strands of intelligibility which have ap-
peared throughout the paper and will present an explanation of consciousness
that is both meaningful and significant.

4Martin G. D'Arcy, S.J., "The Varieties of Human Love," Adventures of the
Preface and Forward

In the preface Teilhard tells us that his book "deals with man solely as a phenomenon; but it also deals with the whole phenomenon of man" (Ph, 25). And in order to deal with the whole man, he says that there are two basic assumptions which must be present if this theme is to be developed. "The first is the primacy accorded to the psychic and to thought in the stuff of the universe, and the second is the 'biological' value attributed to the social fact around us" (Ph, 30). It is primarily the first of these assumptions that we are interested in, since he reminds us that the very stuff of the universe contains elements of the psychic and of thought. Here at the beginning of his work he makes the statement; the explanation will come later.

In his two assumptions it seems that Teilhard is indicating a relationship between thought and matter. This would be the case since matter is not to be conceived without its relationship to thought, and life governed by thought is not to be considered without its biological aspect. He implies that all too often man views the world either from the standpoint of spirit or from that of matter. Perhaps the actual existential situation will demand that the knowledge acquired by the use of such a dichotomy must be acknowledged as incomplete.

"Seeing. We might say that the whole of life lies in that verb—if not in end, at least in essence. Fuller being is closer union; such is the kernel and
conclusion of this book. But let us emphasize the point: union can only increase through an increase in consciousness, that is to say in vision. . . . To try to see more and better is not a matter of whim or curiosity or self-indulgence. To see or to perish is the very condition laid upon everything that makes up the universe, by reason of the mysterious gift of existence. And this, in superior measure, is man's condition" (PM, 31). It is at this point that consciousness is first mentioned, and it is to be noted that it is not just brought up as something unimportant, but rather as indicating that growth in consciousness is at the heart of all growth, of all development, of all life.

What does it mean to say that the whole of life lies in seeing? that fuller being is closer union? and that union can only increase through an increase in consciousness? To begin with, seeing and consciousness are equated. In so far as a being sees, it is conscious. "After all, do we not judge the perfection of an animal, or the supremacy of a thinking being, by the penetration and synthetic power of their gaze" (PM, 31)? Thus the perfection of a being is also able to be equated with the degree of vision, of consciousness that it possesses. At this point we can not determine what Teilhard means by closer union. Union with what? We are not told. As the book progresses though, the answer to this question will become apparent.

But why is it necessary that everything in the universe see or perish? And in particular, why would this be true of man? Again the answer will be more apparent as the work progresses. But Teilhard does give some indication of the answer that he will give when he considers the work of scientists and says: "Instinctively physicists and naturalists went to work as though they could look down from a great height upon a world which their consciousness
could penetrate without being submitted to it or changing it" (Fl, 32). But they found that they were not separated from the object of their studies and in fact "they realize that because of the return shock of their discoveries, they are committed body and soul to the network of relationships they thought to cast upon things from outside: in fact they are caught in their own net" (Fl, 32). Through vision, through consciousness man cannot help but become aware of himself as he exists concretely, as the center of perspective and the center of construction of the universe. For Teilhard the more deeply we see, the more deeply we exist; thus "deeper vision is really fuller being" (Fl, 33). By examining man, our capacity to live should increase.

But in order to see, it is first necessary to focus one's eyes, and this takes time. The child takes time to focus his eyes upon the world, to discover the wonders that it contains; so it is with man. He must learn to see into the depths that have not yet been discovered. Man, whose sight is extended by the power of his intellect, must acquire new senses which will enable him to penetrate the mystery that he is. These are the senses of spatial immensity, the sense of depth, of number, of proportion, of quality or novelty, of movement, of the organic. Once these have been acquired, new dimensions open for man.

Teilhard is presenting the outcome of his own vision. He by no means intends to give the final word on anything; rather he is interested in communicating what he has seen in so far as it has universal application. "Even reduced to these humble proportions, the views I am attempting to put forward here are, of course, largely tentative and personal. Yet in as much as they are based on arduous investigation and sustained reflection, they give an idea, by means of one example, of the way in which the problem of mankind presents
itself in science today" (FM, 35). Man is envisioned not as an erratic monad having no true home in the universe, but rather "as the axis and leading shoot of evolution, which is something much finer" (FM, 36).

BEFORE LIFE CAME: The Stuff of the Universe

In Teilhard's first basic assumption which he presented in the preface, namely, "the primacy accorded to the psychic and to thought in the stuff of the universe" (FM, 30), we are led to the subject matter of the first chapter, the stuff of the universe. What is the intelligibility in the stuff which appears to extend about us in every direction without end? And what is the relationship between it and consciousness?

Teilhard looks at three characteristics of matter: its plurality, unity, and energy. The plurality refers to the discoveries made by such sciences as atomic physics which find that "the substratum of the tangible universe is in an unending state of disintegration as it goes downward" (FM, 41). On the other hand, there is also found a basic unity, since there is always a basic unit to be found at the depth of microscopic discovery. There is also a collective unity. "We do not get what we call matter as a result of the simple aggregation and juxtaposition of atoms. For that, a mysterious identity must absorb and cement them. . . . in each new phase of anthropogenesis, we shall find ourselves faced by the unimaginable reality of collective bonds, and we shall have to struggle with them without ceasing until we succeed in recognizing and defining their true nature. Here in the beginning it is sufficient to include them all under the empirical name given by science to their common initial principle, namely energy" (FM, 42). It is energy which is the unifying power of matter, and it is also the cause of structure since matter as matter
is this or that, in so far as it is structured in a definite pattern.

After considering matter as existing in a vacuum, as it were, Teilhard immediately wishes to place the whole discussion within the context of the whole. For him individual facts have relevance and meaning only when they are placed in relation to the total picture. And so he says: "The history of consciousness and its place in the world remain incomprehensible to anyone who has not seen first of all that the cosmos in which man finds himself caught up constitutes, by reason of the unimpeachable wholeness of its whole, a system, a totem and a quantum: a system by its plurality, a totem by its unity, a quantum by its energy; all three within a boundless contour" (Fi, 43).

System in the universe is attested by the fact that each part of the universe is composed of elements which form all material things. At the bottom of this system there is a mysterious sort of composition which modern science keeps trying to penetrate. But there is system at more than the microscopic level; the macroscopic level also provides evident proof of this note: one atom, one molecule, one compound, one cell, one organ, one body. It is a totem in so far as the "stuff of the universe, woven in a single piece according to one and the same system, but never repeating itself from one point to another, represents a single figure. Structurally, it forms a Whole" (Fi, 45). In a footnote Teilhard remarks that it is this system which shall later be referred to as the Law of Consciousness and Complexity (Fi, 45). It is this law which he sees governing the evolution of matter from its primordial elements to anthropogenesis, which he sees as the peak of cosmogenesis. More of this later.

There are two aspects to the quantum. The first regards the atom as an infinitesimal center of the world. Its energy radiates far beyond its own
limitations so that in reality it plays a positive part in the construction of the world, and this leads us to the second aspect of the quantum. Seemingly these minute centers are innumerable, yet they are seen to exercise a dynamism on the whole of which they are a part. Thus, there is not only energy in each one of these centers, but the universe itself can be considered a whole on the most inclusive of macroscopic levels, a whole which has a dynamism of its own, a dynamism which has direction. The quantum as static is not significant; it is only in the context of motion that its full meaning can be reached. Consequently the quantum must be viewed in its relation to duration.

With the appearance of the concept of space-time the view of the cosmos has been radically changed. The science of yesterday which regarded things in a static context has been rendered impossible by this new concept which has introduced the notion of development, a notion that cannot be disregarded without vision itself being severely limited. The cosmos is in the process of birth, and it must be so considered if its intelligibility is to be plumbed. "To our opened eyes each element of things is henceforth extended backwards (and tends to be continued forwards) as far as the eye can see in such a way that the entire spatial immensity is no more than a section 'at the time t' of a trunk whose roots plunge down into the abyss of an unfathomable past, and whose branches rise up somewhere to a future that, at first sight, has no limit. In this new perspective the world appears like a mass in process of transformation" (PH, 47).

Teilhard proceeds to explain in very simple fashion the theory of evolution. Historically, matter has ever become more and more organized. And in the process of these transformations there are two principles concerning energy
which concern us here. The first principle states that during any physical or chemical changes there is not any measurable appearance of new energy. That there is no new energy gained would not matter too much if it were not for the second principle which states that in every physical or chemical change a minute amount of energy is lost in the form of heat. If one looks merely at the without of things, that is to say, at the energy that has hitherto been measured by the scientists, it would seem that our universe must at some time far in the future burn itself out. But here it is that Teilhard says that science has up to the present time left out a very important factor since up to now science has failed to look at the world from any viewpoint but that of the without.

**The Within of Things**

It is Teilhard's considered opinion that the internal aspect of things must also be taken into account if a coherent explanation of the totality of the phenomenon of the cosmos is to be given by science. It is the within of things that must now be examined; the without alone cannot give a total explanation since the without does not represent the entire field of data.

In the eyes of the physicist nothing exists legitimately, at least up to now, except the without of things. The same intellectual attitude is still permissible in the bacteriologist, whose cultures are treated as laboratory reagents. But it is still more difficult in the reals of plants. It tends to become a gamble in the case of a biologist studying the behaviour of insects or coelenterates. It seems merely futile with regard to vertebrates. Finally, it breaks down completely with man, in whom the existence of a within can no longer be evaded, because it is the object of a direct intuition and the substance of all knowledge.

The apparent restriction of the phenomenon of consciousness to the higher forms of life has long served science as an excuse for eliminating it from its models of the universe (Ph, 55).

Thus consciousness is equated with the within. Consciousness is an aspect of
the world that science does not wish to take into consideration. While it seems that it can be legitimately asked whether science must take this aspect into consideration, still consciousness does appear to be part of the data as presented to the knower and thus must be included in any total explanation.

Science considers the stuff of the universe, an undoubtedly worthwhile task. And whenever it comes into contact with a phenomenon that appears to be aberrant, it will not rest until it has solved the seeming paradox. Why should not the same reasoning follow when it is a question of consciousness, often considered to be an epiphenomenon not worth the bother of consideration. If consciousness were to be integrated into a world-system, it would necessitate the "consideration of the existence of a new aspect or dimension in the stuff of the universe" (PM, 55). Some would object that consciousness, found completely only in man, is of no interest to science. Teilhard's answer to this affirms the cosmic extension of consciousness in a way that will become clear only as we proceed: "It is impossible to deny that, deep within ourselves, an 'interior' appears at the heart of beings, as it were seen through a rent. This is enough to ensure that, in one degree or another, this 'interior' should obtrude itself as existing everywhere in nature from all time. Since the stuff of the universe has an inner aspect at one point of itself, there is necessarily a double aspect to its structure, that is to say in every region of space and time—in the same way, for instance, as it is granular: coextensive with their Without, there is a Within to things" (PM, 56). Just what the meaning of the within of things is will have to be determined. Is it the same as the within of man which is consciousness as it is ordinarily understood? or is it only an analogical predication of this term?
The within, consciousness and then spontaneity are three expressions for the same thing. In a footnote Teilhard tells us what he means by consciousness: "Here and throughout this book, the term 'consciousness' is taken in its widest sense to indicate every kind of psychism, from the most rudimentary forms of interior perception imaginable to the human phenomenon of reflective thought" (PM, 57). Here it is evident that "the most rudimentary forms of interior perception imaginable" are not equated with "the human phenomenon of reflective thought" although there is certainly some sort of community between them.

In order to "define the rules according to which this second face, for the most part entirely hidden, suddenly shows itself, and then as suddenly bursts through into certain other regions of our experience" (PM, 58), Teilhard makes three observations. The first is that "atomicity is a common property of the Within and the Without of things" (PM, 59). It is at this level that we see the universe tending backwards into a dust of particles in which the internal and the external can be interchanged, since they correspond in every detail. At least, then, on the level of the atom consciousness is not predicated in the same way as it is of man, since, as we shall see, the within and the without of man are not interchangeable. The second observation is stated as follows: "Reflected rearwards along the course of evolution, consciousness displays itself qualitatively as a spectrum of shifting hints whose lower terms are lost in the night" (PM, 60). The statement is poetic; what does it mean? In the beginning, the constituents of consciousness are undifferentiated, but through time they become ever more and more complicated. As time progresses the different units are no longer homogenous but become units which have their
own peculiar complexity, until finally there is reached the complexity known as man. Now, if instead of looking at matter from the point of view of its evolution from the prime unity to man, we turn around and break down the higher unity into the lower, we shall have the second observation. And finally, that "spiritual perfection (or conscious 'centrality') and material synthesis (or complexity) are but the two aspects or connected parts of one and the same phenomenon" (FM, 60-61), is the third observation. In other words, the degree of consciousness varies directly with the degree of unity found in the composite. "A consciousness is that much more perfected according as it lines a richer and better organized material edifice" (FM, 60).

Having made these observations, we are now able to arrive at that basic law about which The Phenomenon of Man concerns itself: the law of complexity and consciousness. This is the qualitative law of development that can explain "first of all the invisibility, then the appearance, and then the gradual dominance of the within in comparison to the without of things" (FM, 61). It is from the viewpoint of development in time that this law takes on stature.

"This law reveals itself once the universe is thought of as passing from State A, characterized by a very large number of very simple material elements (that is to say with a very poor within), to State B defined by a smaller number of very complex groupings (that is to say with a much richer within)" (FM, 61). The first state, State A, reveals centers of consciousness that are very numerous and which show little if any individuality. They obey the laws of mathematics and are the subject matter of physics and chemistry. In State B we find that the centers of consciousness are less numerous and are much more individualized. In obtaining this individuality, they put behind the numerous
multitude that is characteristic of State A. "In sum all the rest of this essay will be nothing but the story of the struggle in the universe between the unified multiple and the unorganised multitude: the full application of the great Law of complexity and consequenseness: a law that itself implies a psychically convergent structure and curvature of the world" (PH, 61).

Immediately the problem of the within brings to mind the concept of spiritual energy. Undoubtedly it exists in the world. It is this very energy that enables science to exist. If there were no power that could give birth to a metaphysics, any physics would be unthinkable. In examining spiritual energy, we turn first to ourselves. To our dismay we find that the concept is far from being crystal clear, since the actions which we call spiritual appear to be both dependent and independent of material conditions. To think, we must eat. The implications of this state immediately impress upon us the dependence that man's spiritual action of thinking has upon food which is material. All other conditions being fulfilled, a man will be the more free to think in so far as he has the bodily strength to do so, and this is acquired through bodily nourishment. But there is an independence too, since the food does not determine the thought. Many men eat the same food, but none think exactly the same thoughts. A genius and an ape can eat at the same table, yet the transformation of energy is remarkably different. We do seem to observe that the transformation of material energy into spiritual is out of proportion, since a relatively small amount of material energy is capable of producing effects in the realm of the spiritual which greatly surpass their material starting point.

How avoid this seemingly fundamental dualism? Teilhard assumes that essentially "all energy is physical in nature" (PH, 64). By this he means that
energy is real, not that it is restricted to matter. Thus "in each particular element this fundamental energy is divided into two distinct components: a **tangential energy** which links the element with all others of the same order (that is to say of the same complexity and the same centricity) as itself in the universe; and a **radical energy** which draws it towards ever greater complexity and centricity—in other words forwards" (TH, 64–65). To this Teilhard adds an interesting footnote: "Let it be noted in passing that the less an element is 'centred' (i.e. the feeblest its radial energy) the more will its tangential energy reveal itself in powerful mechanical effects. Between strongly 'centred' particles (i.e. of high radial energy) the tangential seems to become 'interiorised' and to disappear from the physicist's view" (TH, 65). A particle in its initial state will contain a certain amount of free tangential energy which will enable it to form with other particles and thus it will become a part of a higher unity which will have greater complexity and thus a greater radial energy. The more complex the arrangement, the less work will be needed to keep the arrangement intact, and the more energy that will be free to spiral upwards toward an ever greater complexity.

**The Earth in its Early Stages**

Now Teilhard devotes a short section to the development of the earth up to the appearance of life. The without of the earth developed in two directions, that of crystallization and that of polymerization. Much of the earth has crystallized and has thereby chosen a road that has closed it in upon itself. "By their innate structure the molecules are unfitted for growth. To develop beyond a certain size they have in a way to get out of themselves" (TH, 69); this they cannot do since minerals and silicates "correspond to no properly
centred units; they are an indefinitely extended mosaic of small elements" (McI. 69).

In the phenomenon of polymerization we see the realm in which particles concatenate in an almost endless network. "Only, this time it is molecules with molecules in such a way as to form on each occasion (by closed or at all events limited combination) an ever larger and more complex molecule" (McI, 70). This is the world of the organic compound, formed by the restless and liberated energy not used by matter in the crystalline state. Even though quantitatively the inorganic world is disproportionately larger than the organic, still this new realm of synthesis is most important both in so far as it was pre-contained in the inorganic and in so far as it leads toward a greater and greater complexity in matter.

The within of the earth denotes "the 'psychic' face of that portion of the stuff of the cosmos enclosed from the beginning of time within the narrow scope of the early earth" (McI, 72). By "the very fact of the individualization of our planet, a certain mass of elementary consciousness was originally imprisoned in the matter of the earth" (McI, 72). The energy needed to develop a more complicated organism was already present in the earth even at its earliest stages. Teilhard gives us the following comparison between the development of spiritual energy and material energy:

To form an idea of the first phases of this evolution it will be enough to compare, stage by stage, on the one hand the general laws we have felt able to lay down for the development of spiritual energy, and on the other the physico-chemical conditions we have just acknowledged in the nascent earth. We have said that spiritual energy, by its very nature, increases in 'radial' value positively, absolutely, and without determinable limits; in step with the increasing chemical complexity of the elements of which it represents the inner lining. But the chemical complexity of the earth increases in conformity with the laws of thermodynamics in the particular, superficial zone in which its elements
polymerise. If we put these two propositions side by side we see that they interweave and shed light upon each other without ambiguity. With one accord they tell us that pre-life is no sooner enclosed in the nascent earth than it emerges from the torpor to which it appeared to have been condemned by its diffusion in space. Its activities, hitherto dormant, are now set in motion pari passu with the awakening of the forces of synthesis enclosed in matter. And at one and the same stroke, over the whole surface of the new-formed globe, the tension of internal freedoms begins to rise (FH, 72-73). And so, at the beginning of the earth there was present not only a great multitude of particles with the seeds of life contained within them but also the folding in upon itself which enabled a synthesis of molecules to take place. "Thus, wherever we look on earth, the growth of the 'within' only takes place thanks to a doubly related involution, the coiling up of the molecule upon itself and the coiling up of the planet upon itself" (FH, 73).

LIFE: The Advent of Life

"In every domain, when anything exceeds a certain measurement, it suddenly changes its aspect, condition or nature. The curve doubles back, the surface contracts to a point, the solid disintegrates, the liquid boils, the germ cell divides, intuition suddenly bursts on the piled up facts. . . . Critical points have been reached, rungs on the ladder, involving a change of state—jumps of all sorts in the course of development. Henceforward this is the only way in which science can speak of a 'first instance.' But it is none the less a true way" (FH, 78). When the biosphere was formed upon the earth, when life came into being, a jump, a leap was made; a crisis was reached in which a new order of being came into existence. This new appearance was not the result of a continuous movement and development, but was rather the production of something entirely new, although, of course, it was contained germinally in what went before.
But "in the biologist's space-time, the introduction of a new morphologi-
cal end-form or stage needs immediately to be translated by a correlative pro-
longation of the axis of duration" (PM, 34). These leaps or jumps do not take
place one after the other with no lapse in time; on the contrary, their very
existence necessitates the posing of tremendous time lapses. Morphological
development demands a time correlative; one cannot take place without the other
as the modern physicist points out in his use of the space-time concept. With
the appearance of the cell, which Teilhard takes to be the first appearance of
life upon the earth, we find a single unit of incredible complexity. "In this
cell (at the same time so single, so uniform and so complex) what we have is
really the stuff of the universe reappearing once again with all its charac-
teristics—only this time it has reached a higher rung of complexity and thus,
by the same stroke (if our hypothesis be well founded), advanced still further
in interiority, i.e. in consciousness" (PM, 37-38).

It is with the appearance of the cell that Teilhard states that a decisive
step forward has been taken in the progress of consciousness upon the earth.
But how does this progress take place? "How are we to envisage the change-over
(how are we even to find room for a change-over) from the pre-consciousness
inherent in pre-life to the consciousness, however elementary, of the first
true living creature" (PM, 38)? It is necessary to show that such a change-
over can take place and that it did take place. That it can take place is
shown "since either by arrangement of the parts or by the acquisition of an-
other dimension, the degree of 'interiority' of a cosmic element can undoubted-
ly vary to the point at which it rises suddenly on to another level" (PM, 39).
We see the results of the development that has taken place around us and "the
increase of the synthetic state of matter involves . . . an increase of consciousness for the milieu synthesized. To which we should now add: critical change in the intimate arrangement of the elements induces into fact a change in the nature of the state of consciousness of the particles of the universe" (TM, 89).

The Expansion of Life

In this chapter Teilhard states that he is going to present a vision so homogeneous and coherent that no one will be able to resist its compelling force, but the vision will be one of the surface and hence of the without of the expansion of life. In discussing certain elemental movements of life such as reproduction, multiplication, renovation, conjugation, and association, the without is certainly dominant. But the next characteristic, that of controlled additivity, seems again to introduce the notion of the within even though it is not explicitly mentioned here. Teilhard points out in this connection that the elemental notes mentioned previously give the cell the ability to spread and vary—but always on the same plane, in the same order. These notes enable matter to develop horizontally, but they lack vertical power. Here it is that the phenomenon of additivity comes into play as the vertical component that enables life to become ever more and more complex (TM, 103-108).

Vertical transformations of biological evolution become evident as progressive products of reproduction add something, one to the other, and their sum increases in what appears to be a pre-determined direction. As organisms become more and more complicated, we see a progression from micro-molecule, to mega-molecule, and finally to the cell. This phenomenon is called by biologists orthogenesis. Here Teilhard inserts an interesting footnote about
orthogenesis: "On the pretext of its being used in various questionable or restricted senses, or of its having a metaphysical flavour, some biologists would like to suppress the word 'orthogenesis.' But my considered opinion is that the word is essential and indispensable for singling out and affirming the manifest property of living matter to form a system in which 'terms succeed each other experimentally, following the constantly increasing values of centroceliness.'" (Pp. 108). Teilhard is defending his theory concerning the within against those scientists who would opt for what would be in his opinion only a surface science.

In a corollary to this section different modes of life are considered. Among these is the attitude of profusion which is born of unlimited multiplication which seems to be one of the basic characteristics of life. There were millions and millions of individual cells fighting for survival; there was a struggle for life which we denote by the expression 'survival of the fittest by natural selection.' This phrase is not meant to be either a final ideal or a final explanation, but it is by no means a meaningless expression. The struggle to live is implanted deeply in the whole context of self-reproduction. There is a conflict of chances that takes place, and "on the plane of animate particles we find the fundamental technique of groping, the specific and invincible weapon of all expanding multitudes. This groping strangely combines the blind fantasy of large numbers with the precise orientation of a specific target. It would be a mistake to see it as mere chance. Groping is directed chance. It means pervading everything so as to try everything, and trying everything so as to find everything" (Pp. 110). Even though Teilhard does not bring in the concept of consciousness here, it seems that he intends what he
calls growing or directed chance to be the procedure dictated to matter by the type of consciousness that it possesses. Also, it would be true to say that what appears as chance on a lower level of explanation could be explained in terms of causality on a higher level.

And what is this directed chance leading to? Unity. This is what man must see. Without it there can be no direction to the universe, but only chaos. "To see life properly we must never lose sight of the unity of the biosphere that lies beyond the plurality and essential rivalry of individual beings. This unity was still diffuse in the early stages—a unity in origin, framework and dispersed impetus rather than in ordered grouping; yet a unity which, together with life's ascent, was to grow ever sharper in outline, to fold in upon itself, and, finally, to centre itself under our eyes" (Ph, 112).

In the development of the phylum we see the consciousness of matter in action and are shown that mere chance cannot explain such an ordered development. In fact, the phylum develops in somewhat the same fashion as man-made inventions do. At first an idea takes shape in a provisional model; then a series of modifications follow which smooth out the rough edges of the original product. Qualitatively then the invention is practically finished, even though it still must expand quantitatively. In the same way the naturalist views the growth of the phylum.

At the outset the phylum corresponds to the 'discovery,' by groping, of a new type of organism that is both viable and advantageous. But this new type will not attain its most economical or efficient form all at once. For a certain period of time it devotes all its strength, so to speak, to groping about within itself. Try-out follows try-out, without being finally adopted. Then at last perfection comes within sight, and from that moment the rhythm of change slows down. The new invention, having reached the limit of its potentialities, enters its phase of conquest. ... it multiplies, but without further diversification. It has now entered its fully-grown period ... of stability (Ph, 116).
Let us keep in mind that this development is the result of consciousness and that the comparison which Teilhard uses to explain it—that of human invention—presupposes the application of an idea. Since we have not reached the advent of thought in the universe, it would appear that he presupposes a thinking being outside the universe.

The idea that is evident in the universe is that of evolution. For Teilhard the evolutionary hypothesis is not just an hypothesis; it must be accepted if there is to be intelligibility in the world about us.

As a matter of fact, in view of the impossibility of empirically perceiving any entity, animate or inanimate, otherwise than as engaged in the time-space series, evolutionary theory has long since ceased to be a hypothesis, to become a (dimensional) condition which all hypotheses of physics or biology must henceforth satisfy. Biologists and palaeontologists are still arguing today about the way things happen. . . . But on the general and fundamental fact that organic evolution exists, applicable equally to life as a whole or to any given living creature in particular, all scientists are today in agreement for the very good reason that they couldn't practise science if they thought otherwise. The one regret we might express here (and not without astonishment) is that despite the clearness of the facts, this unanimity does not go so far as to admit that the 'galaxy' of living forms constitutes (as posited in these pages) a vast 'orthogenetic' movement of involution on an ever-greater complexity and consciousness (FH, 140).

Thus, even though scientists accept evolution in general, they do not accept all its implications.

Demeter

It has been observed that there is a continuous accumulation of properties, that life acts like a snowball as it piles characters upon characters. This phenomenon was described as controlled additivity. Again, evolution is not just a disorderly release of energy in all directions, like a blast of dynamite, but rather like the confined, yet powerful explosion of an internal combustion engine (FH, 141). Teilhard states that most scientists accept the fact
of evolution, but that they are in disagreement when it comes to an evolution that is directed. Some say that it is; others deny finality in the universe. In fact, the majority, nine out of ten, passionately deny that life is going anywhere. The science of today in general does not admit any orientation or axis which the development of the universe follows. This position is important, since it is the antithesis of Teilhard's own stand. Because the minds of men fail to recognize the orientation and direction of the earth, they scatter their energy and fail to do their part in building the earth into what it should become under the influence of man. It is Teilhard's purpose to point out this direction which must be taken if life is to progress.

In order to find degrees in matter, it is first necessary to find order in the complexity of matter. There must be some criterion by which we can judge whether there is a hierarchy in evolutionary development. Depending upon the meaning given to complexity, there are given different hierarchies. "According to the point of view adopted, all sorts of distributions are possible. In these multiple combinations, is there really one which can be said to be truer than the others? Is there one, that is to say, which gives to the whole of living things a more satisfying coherence, either in relation to itself, or in relation to the world to which life finds itself committed" (FH, 142-143)? Is there an intelligibility to be found in the real order of things that will enable us to distinguish them, to predicate of them more or less being, and therefore more or less truth?

Teilhard already prepared the answer to this question when he first considered the mutual relations between the without and the within of things.

The essence of the real . . . could well be represented by the 'interiority' contained by the universe at a given moment. In that case
evolution would fundamentally be nothing else than the continual growth of this 'psychic' or 'radial' energy, in the course of duration, beneath and within the mechanical energy . . . called 'tangential,' which is practically constant on the scale of our observations. And what . . . is the particular co-efficient which empirically expresses the relationship between the radial and tangential energies of the world in the course of their respective development? Obviously arrangement, the arrangement whose successive advances are inwardly reinforced, as we can see, by a continual expansion and deepening of consciousness (PM, 143).

In other words, the relationship between the radial and tangential energies of the world is expressed by the law of complexity-consciousness.

But what is to be the criterion inherent in this law? Our question will be answered if, upon observation, we can see in the organic beings which are transformed something which represents the very essence of complexity.

Of course there exists in living organisms a selective mechanism for the play of consciousness. We have merely to look into ourselves to perceive it—the nervous system. We can only really come to grips in a positive way with one single 'interiority' in the world: our own directly, and at the same time that of other men by immediate equivalence, thanks to language. But we have every reason to think that in animals to a certain inwardness exists, approximately proportional to the development of their brains. So let us attempt to classify living beings by their degree of 'cerebralization.' What happens? An order appears—the very order we wanted—and automatically (PM, 143-144).

Thus it is seen that as the brain develops, so does complexity and so does consciousness. This development can be noted in the chordate branch to which we belong. It is in this branch that the nervous system develops by massive leaps from layer to layer. The dinosaurs who were tremendous in size had a brain so small that it was no larger than a narrow string of lobes quite smaller than the spinal chord in the lumbar region; but in the jump to the next layer—the mammals—the average brain is more spacious and convoluted than in any other group of vertebrates (PM, 144).

Once the criterion of evolving creatures is placed in the elaboration of the nervous systems, the entire classification of systematic biology is saved.
and there is added a newness, a sharpness of feature that was not present in the
old morphological classification. The order conferred by the differentiation
of the nervous system provides a direction to the evolutionary phenomenon, and
by its results it proves that evolution has a direction. Among living crea-
tures, then, the brain is the sign and measure of consciousness. But it can
also be noted that "among living creatures, the brain is continually perfecting
itself with time, so much so that a given quality of brain appears essentially
linked with a given phase of duration" (PH, 146).

We have found the criterion by which we can judge the hierarchy of the
products of evolution.

Since, in its totality and throughout the length of each stem, the natural
history of living creatures amounts on the exterior to the gradual estab-
ishment of a vast nervous system, it therefore corresponds on the interior
to the installation of a psychic state on the very dimensions of the earth.
On the surface, we find the nerve fibres and ganglions; deep down, con-
sciousness. We were only looking for a simple rule to sort out the tangle
of appearances. And now (entirely in keeping with our initial anticipa-
tions on the ultimately psychic nature of evolution) we possess a funda-
mental variable capable of following in the past, and perhaps defining in
the future, the true curve of the phenomenon (PH, 146).

This law of complexity-consciousness was sought so that a criterion might be
established to judge the hierarchy of evolutionary creatures. More than that
has been found. Where have we come from? Where is it that we are going? By
examining the phenomenon, not only from the without, but also from the within,
we can tell. It is by such an examination that Teilhard develops his own
doctrine.

Now Teilhard wishes to trace the rise of consciousness again, this time
not in a labyrinth of arrangements which come about by following out the de-
velopments brought about by tangential energy, but rather those whose direct-
ing force was radial energy. The primordial emergence of matter which told a
a critical point on the curve of evolution appears to lose itself in the almost infinite number of ramifications that it underwent. "But now we see it emerging again, on the tide, with the tide (duly recorded by the nervous systems), whose flood carries the living mass ever onward towards consciousness" (Ph, 147).

The homogeneous and almost monotonous series of pulsations of development which palaeontologists have discovered to have taken place are henceforth to be considered as a spiral which springs upward as it turns. There is development that grows in a thrust-like fashion; moreover, it is constantly directed. Geogenesis extends itself to biogenesis which finally becomes psychogenesis. To see the progression which is at the heart of life, we look to the impetus which is the rise of consciousness.

The nature of the impetus of life has been hotly debated by scientists ever since the evolutionary hypothesis became necessary to understand nature. Those who have considered the without of things exclusively have confined their attention to measurement and collective frameworks which do not in themselves, it seems, give an adequate explanation of the radial development of life. This is not in any way to disparage work on the without. It is necessary. In fact, this horizontal combat leads toward development, but it does not give a total explanation of the entire development observed. Granted that mechanical energies partially account for the pulsations driving through the tree of life, still "would the mechanical energies themselves be without some within to feed them? Beneath the 'tangential' we find the 'radial.' The impetus of the world, glimpsed in the great drive of consciousness, can only have its ultimate source in some inner principle, which alone could explain its irreversible advance towards higher psychisms" (Ph, 149). That life is determined from the
without and yet has a certain freedom on the within is a phenomenon too little understood in these days. Perhaps the future will bring a more penetrating analysis.

If the criterion of development is taken as the within, the perspective of judgment receives a reversal. Current thought teaches that an animal develops carnivorous instincts because its molars become cutting and because its claws become sharp. Now the proposition would be turned about. "In other words if the tiger elongates its fangs and sharpens its claws is it not rather because, following its line of descent, it receives, develops, and hands on the 'soul of a carnivore'? It is the same with the timid cursorial types, the same with those that burrow, swim or fly" (FM, 150). There is an inner principle that drives a species to develop in the way that it does. It is not as it is simply because this is the way that it has developed. "To write the true natural history of the world, we should need to be able to follow it from within. It would thus appear no longer as an interlocking succession of structural types replacing one another, but as an ascension of inner sap spreading out in a forest of consolidated instincts. Right at its base, the living world is constituted by consciousness clothed in flesh and bone. From the biosphere to the species is nothing but an immense ramification of psychism seeking for itself by means of different forms" (FM, 151).

Even though it is impossible at present to express precisely the interior development, its significance must be admitted if transformism is to be held since life, in so far as it represents a controlled process, could only continue in its development provided that at given moments it underwent profound and radical developments. A single line of addition will not suffice to
explain the phenomenon that we have before us.

The law is formal. . . . No size in the world can go on increasing without sooner or later reaching a critical point involving some change of state. There is a ceiling limit to speeds and temperatures. If we increase the acceleration of a body until we get near the speed of light, it acquires by excess of mass an infinitely inert nature. If we heat it, it would first melt, then vaporise. And the same applies to all known physical properties. So long as we could regard evolution as a simple advance towards complexity, we could imagine it developing indefinitely in its own likeness; there is no ceiling limit to pure diversification. Now that the historically increasing intricacy of forms and organs has demonstrated the irreversible augmentation of brains (and therefore consciousness) not only in quantity but also in quality, we are forced to realise that an event of another order—a metamorphosis—was inevitably awaited to wind up this long period of synthesis in the course of geological time (P. 151-152).

The law of interiority in the universe demands that radical change takes place.

There cannot be a purely mechanical enlargement of the arrangement of matter with no new dimension entering in. We observe that an increase in quantity brings with it also an increase in quality. Man is more than a magnified atom, cell, or animal. Quantitative change in the complexity of a material being brings in its stead a qualitative change in consciousness. Life is the rise of consciousness.

There are two branches of the tree of life that can be considered in the observation of the rise of consciousness: one of these is the arthropod branch, that of the insects; the other is the vertebrate branch, that of the mammals. The insects are eliminated as being the carriers of the future conscious life, and this for several reasons. First, insects are too small. Once they grow beyond a certain size they become dangerously fragile. On account of this their brains are limited as to their size, and observation shows that superior psychic levels demand physically big brains. Insects demonstrate marvelous precision of movement and construction, but they also exhibit a strange
determination in this very area where they are most adapt. Once formed, their habits of work become so fixed that they cannot change; they are frozen, fixed in a determination that immediately cuts them off from any further psychical development (PM, 154).

On the other hand, when we examine the vertebrates, we find ourselves more and more at home, and this not only from a sense of anthropocentrism. The cat, the dog, the dolphin exhibit an entirely different form of instinct than that of the insects. They are not subject to the limitation imposed upon a tool by the precision that it has attained; there is a certain strain of freedom present that gives hope of development along this line or that. The mammal is not entirely determined as is the insect. Among the mammals it is the primate that retained the freedom to develop. In their case "evolution went straight to work on the brain, neglecting everything else, which accordingly remained malleable. That is why they are at the head of the upward and onward march towards greater consciousness" (PM, 159). It is the primates that represent a phylum of pure and direct cerebralization; and among the primates it is the anthropoids that carry the thrust of life toward the frontiers of intelligence.
CHAPTER III

AN ANALYSIS OF THE PHENOMENON OF MAN: II

THOUGHT: The Birth of Thought

The morphological leap between the last non-human primate and man is extremely slight, but in reality a whole new dimension was added to evolutionary development. Morphology by itself cannot succeed in placing man in the proper perspective. It is necessary to consider the within of man as well as his without.

Not only are biologists not agreed as to whether or not there is direction, a definite axis of evolution, but scientists in general tend to contest any specific difference between man and his predecessors. They wish to say that there is a continual development from one species of animal to another and that man only happens to enjoy the highest degree of development in intelligence yet attained. Teilhard, of course, rejects this position. He does not tarry about the secondary and inconclusive aspects of man's interiority but makes straight for his central phenomenon—reflection.

From our experimental point of view, reflection is, as the word indicates, the power acquired by a consciousness to turn in upon itself, to take possession of itself as of an object endowed with its own particular consistence and value: no longer merely to know, but to know oneself; no longer merely to know, but to know that one knows. By this individualisation of himself in the depths of himself, the living element, which heretofore had been spread out and divided over a diffuse circle of perceptions and activities, was constituted for the first time as a centre in the form of a point at which all the impressions and experiences knit themselves together and fuse into a unity that is conscious of its own organisation (PH, 165).
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It is in this movement to man that consciousness ceases to be only an object and becomes a subject. The hominization of the individual comes about when a leap is made that enables the conscious being not only to know, but to know that he knows. This leap covers the distance between the material and the spiritual; a new dimension has been added to the universe; another world is born. In fact, "abstraction, logic, reasoned choice and inventions, mathematics, art, calculation of space and time, anxieties and dreams of love—all these activities of inner life are nothing else than the effervescence of the newly-formed centre as it explodes onto itself" (PM, 165).

Hence, it is seen that the development of consciousness is not continuous. This is important since those who accuse Teilhard of panpsychism fail to see that he does make the proper distinctions at this juncture. Let us listen to him again:

If, as follows from the foregoing, it is the fact of being 'reflective' which constitutes the strictly 'intelligent' being, can we seriously doubt that intelligence is the evolutionary lot proper to man and to man only? If not, can we, under the influence of some false modesty, hesitate to admit that man's possession of it constitutes a radical advance on all forms of life that have gone before him? Admittedly the animal knows. But it cannot know that it knows; that is quite certain. If it could, it would long ago have multiplied its inventions and developed a system of internal constructions that could not have escaped our observation. In consequence it is denied access to a whole domain of reality in which we can move freely. We are separated by a chasm—or a threshold—which it cannot cross. Because we are reflective we are not only different but quite other. It is not a matter of change of degree, but of a change of nature, resulting from a change of state (PM 165-166).

Consciousness is not synonymous with intelligence; not every being which has consciousness has intelligence, only that being whose consciousness can turn back upon itself and know that it knows. We know this from observation of the phenomenon. No creature but man acts in a way that would warrant attributing human consciousness to it; and if it does not act intelligently, we cannot
predicate intelligence of it.

The intelligibility present within the spiral of evolutionary development has led to intelligent beings. "Life, being an ascent of consciousness, could not continue to advance indefinitely along its line without transforming itself in depth. It had, we said, like all growing magnitudes in the world, to become different so as to remain itself. Here, in the accession to the power of reflection, emerges (more clearly recognisable than in the obscure primordial psychism of the first cells) the particular and critical form of transformation in which this surcreation or rebirth consisted for it. And at the same moment we find the whole curve of biogenesis reappearing summed up and clarified in this singular point" (Ph, 166). The appearance of intelligent life is another in the leaps of progress, but it is more than just another leap. It is the ascent of consciousness toward which the whole curve of geogenesis and biogenesis has been striving. The whole evolution of the universe is in a very true sense summed up in the appearance of its most noble product—man. This is the critical transformation toward which all others were directed.

Hence the psychical make-up of animals differs according to the degree of consciousness that they possess. From this point of view, instinct is not an epiphenomenon but rather translates in its varying expressions the very phenomenon of life. There is not one univocal instinct among animals but rather multitudinous forms of instincts which correspond to a particular solution to the problem of life. This follows from the fact that evolution is primarily a psychical transformation. Because of their position on the tree of life the psychical make-up of the insect is not and cannot be that of the vertebrate, nor can that of the squirrel be the same as of the cat's or elephant's. This
observation can lead us to the conclusion that instincts "will form as a whole a kind of fan-like structure in which the higher terms on each nerve are recognised each time by a greater range of choice and depending on a better defined centre of co-ordination and consciousness. ... The 'psychical' make-up of a dog, despite all that may be said to the contrary, is positively superior to that of a mole or a fish" (EM, 167). Here it is that we find the measure that allows us to arrange the members of the tree of life in a hierarchy.

"From this point of view it could be said that every form of instinct tends in its own way to become 'intelligence'; but it is only in the human line that (for extrinsic or intrinsic reasons) the operation has been successful all the way. Having reached the stage of reflection, man would thus represent a single one of the immeasurable modalities of consciousness tried out by life in the animal world. In all those other psychological worlds it is very difficult for us to enter, not only because in them knowledge is more confused, but because they work differently from ours" (EM, 167). The radial energy of every center of consciousness which is spiraling upwards is trying in its own way to reach that type of consciousness which is intelligence, but it is only man that has made the leap. The atom, the molecule, the cell, the organism, the animal could thrust upward only so far; then a determination set in which jelled them in their attempt. Therefore, consciousness cannot be considered as being something univocal, but rather as an analogous term that can be predicated of different branches of the tree of life in a similar yet different fashion.

This helps to explain the affinity that man feels with the animals that are higher in the scale of life. "If the story of life is no more than a movement of consciousness veiled by morphology, it is inevitable that, towards the
summit of the series, in the proximity of man, the 'psychical' make-ups seem to reach the borders of intelligence" (PM, 167-168). To imagine how this final leap took place is difficult. However, using the analogy of boiling water, Teilhard describes this final thrust:

By the end of the Tertiary era, the psychical temperature in the cellular world had been rising for more than 500 million years. From branch to branch, from layer to layer, we have seen how nervous systems followed pari passu the process of increased complication and concentration. Finally, with the primates, an instrument was fashioned so remarkably supple and rich that the step immediately following could not take place without the whole animal psychism being as it were recast and consolidated on itself. Now this movement did not stop, for there was nothing in the structure of the organism to prevent it advancing. When the anthropoid, so to speak, had been brought 'mentally' to boiling point some further calories were added. Or, when the anthropoid had almost reached the summit of the cone, a final effort took place along the axis. No more was needed for the whole inner equilibrium to be upset. What was previously only a centred surface became a centre. By a tiny 'tangential' increase, the 'radial' was turned back on itself and so to speak took an infinite leap forward. Outwardly, almost nothing in the organs had changed. But in depth, a great revolution had taken place: consciousness was now leaping and boiling in a space of super-sensory relationships and representations; and simultaneously consciousness was capable of perceiving itself in the concentrated simplicity of its faculties. And all this happened for the first time (PM, 168-169).

When the primates appeared and developed, both time and matter were apt for the insertion of "further calories" that would bridge the gap between materiality and spirituality. Consciousness had hitherto been material; now it became spiritual. This "infinite leap forward" was something that could be expected from the previous, concentrated, striving toward intelligence, but it could not be achieved except through this insertion of energy from without. The morphological characteristics or the without did not change appreciably, but the success of the revolution within was extraordinary enough to produce a consciousness that was henceforward to have the ability to engineer its own leaps on the supersensory or spiritual level. Hence, it can be said both that man
transcends the rest of nature and that he is also a term in a series of animal transformations.

Here in a footnote Teilhard considers the possibility of the intervention of a higher cause to bring about the transition from the last non-human anthropoid to man:

Need I repeat that I confine myself here to the phenomena, i.e. to the experimental relations between consciousness and complexity, without prejudging the deeper causes which govern the whole issue? In virtue of the limitations imposed on our sensory knowledge by the play of the temporospatial series, it is only, it seems, under the appearances of a critical point that we can grasp experimentally the 'hominising' (spiritualising) step to reflection. But, with that said, there is nothing to prevent the thinker who adopts a spiritual explanation from positing (for reasons of a higher order and at a later stage of his dialectic), under the phenomenal veil of a revolutionary transformation, whatever 'creative' operation or 'special intervention' he likes. . . . Is it not a principle universally accepted by Christian thought in its theological interpretation of reality that for our minds there are different and successive planes of knowledge (PM, 169)?

On the phenomenal plane of knowledge we can see evolution developing man as its highest product. Morphologically there seems to be a continuous progress at least through the anthropoids and primates. However, the form is not the only character noted and, hence, not the only one that should be taken into consideration.

From the operations that he performs and the products that he produces, it is evident that man has broken loose from the strain of evolutionary progression. That something different took place, science must recognize. A full explanation of the nature of what happened falls beyond the pale of science. There are reasons of a higher order than science and it is these that must be used if the whole phenomenon of man is to be explained. At this point Teilhard does not wish to pursue the subject:
If this book is to be properly understood, it must be read not as a work on metaphysics, still less as a sort of theological essay, but purely and simply as a scientific treatise. . . . Beyond these first purely scientific reflections, there is obviously ample room for the most far-reaching speculations of the philosopher and theologian. Of set purpose, I have at all times carefully avoided venturing into that field of the essence of being. At most I am confident that, on the plane of experience, I have identified with some accuracy the combined movement towards unity, and have marked the places where philosophical and religious thinkers, in pursuing the matter further, would be entitled, for reasons of a higher order, to look for breaches of continuity (PH, 29).

Whether or not Teilhard steers clear of all philosophical and theological problems and investigations is not the question here; still, it seems that we should take him at his word when he says that there are many points that he is not going to consider and that he will leave these to those philosophers and theologians who think them worthwhile enough to be discussed. Quite obviously then, he is not excluding the explanation here that the soul is directly created by God but is only stating that this is not directly observed by us. He does not intend to investigate every level of explanation.

Looking back on the process of evolution, we are able to see that life does not work by fits and starts, but that it is like a knot whose strands have been converging from the four corners of space from all time. That life was formed, that man appeared upon the scene, is not a coincidence, just as the morphological development of the matter that was apt for hominization was no coincidence.

It is true that in the end, from the organic point of view, the whole metamorphosis leading to man depends on the question of a better brain. But how was this cerebral perfectioning carried out—how could it have worked—if there had not been a whole series of other conditions brought together at just the same time? If the creature from which man issued had not been a biped, his hands would not have been free in time to release the jaws from their prehensile function, and the thick band of maxillary muscles which had imprisoned the cranium could not have been relaxed. It is thanks to two-footedness freeing the hands that the brain was able to grow; and thanks to this, too, that the eyes, brought closer together on the diminished face, were able to converge and fix on what the hands held
and brought before them—the very gesture which formed the external counterpart of reflection (Pi, 170).

It would seem therefore that consciousness in prehuman forms was really a "directed groping" and by no means blind chance. It would be interesting to note the source of the plan according to which matter groped. Perhaps this is also a problem that is to be solved on a higher level than science.

It should also be noted that the transformation from non-intelligent to intelligent beings could not have taken place through intermediaries. Thus we should not expect to find animals that are partly intelligent. Again the analogical use of consciousness is stressed. The dawn of intelligence may not have been very striking, just as a new-born child exhibits at first only animal appetites and only later in life begins to manifest rationality; still, the advance was decisive.

The transit to reflection has brought about the phenomenon of personalization, the peculiar state of this new consciousness that is man. It now proceeds along a different avenue of development than those types of consciousness which preceded it. "... the reflective psychic centre, once turned in upon itself, can only subsist by means of a double movement which is in reality one and the same. It centres itself further on itself by penetration into a new space, and at the same time it centres the rest of the world around itself by the establishment of an ever more coherent and better organised perspective in the realities which surround it. ... The ego only persists by becoming ever more itself, in the measure in which it makes everything else itself" (Pi, 172).

It is man who now has the power to know all things, to assimilate them without himself being assimilated; it is he who with his knowledge can begin to direct the total process of evolution in a manner not hitherto encountered. The
value of the individual has been transformed into the value of the person. In the animal kingdom the individual is for the species; now the person exists and lives in his own right since he is no longer entirely limited and determined by the species. This does not mean that the emphasis of evolution now shifts entirely from an interest of the whole to an isolated viewpoint which includes only the person as an individual. There is now present a double aspect of evolution. On the one hand, the person must evolve, must perfect himself within the framework of the species and of the whole universe. On the other, the person must also realize his responsibility of defining and regulating the ascent of consciousness of the entire human species, of the entire universe.

Before the advent of man the branches of any phylum could be judged on morphological evidence; this no longer suffices. Man's coming demands that the internal zone of consciousness come into play. If the breakup of mankind into races, nations, states, countries, cultures were to be explained solely in terms of the without, no adequate solution could ever be reached. Even the direction of growth that evolution was taking was not able to be unraveled until the threshold of thought was crossed. Before man it was true to say that consciousness rose through living beings, but the heights to which it was to rise were in doubt, and it is only when man appears on the scene that the meaning of progress becomes easier to decipher. Teilhard says that "following each anthropological line, it is mankind that seeks itself and grows" (PM, 177). He says that we are all conscious in some small way that something is happening in history, that we are going somewhere, that life has a meaning with respect to some end yet to be achieved.

"Under the free and ingenious effort of successive intelligences,
something (even in the absence of any measurable variation of brain or cranium) irreversibly accumulates, according to all the evidence, and is transmitted, at least collectively by means of education, down through the course of ages. The point here is that this 'something'—construction of matter or construction of beauty, systems of thought or systems of action—ends up always by translating itself into an augmentation of consciousness, and consciousness in its turn, as we know, is nothing less than the substance and heart of life in the process of evolution" (Ph, 178). Here we see that there is also a growth, a development of consciousness in the human branch. The consciousness of man has not remained constant throughout the ages since his appearance. While it is not necessarily true, still a man in this age can be more conscious both of the significance and of the demands of his own being than a man of ten millennia ago. It is the task of us who work today to prepare the future for our descendants that they may attain to yet more consciousness. And it is also true to say that the total consciousness of the total human race increases. Our world is bigger today than it was centuries ago, even if we do not live up to the responsibilities that our knowledge places upon us; the reality itself is present. It is our task to respond effectively to it.

"... because the specific orthogenesis of the primates (urging them towards increasing cerebralization) coincides with the axial orthogenesis of organised matter (urging all living things towards a higher consciousness) man, appearing at the heart of the primates, flourishes on the leading shoot of zoological evolution" (Ph, 180). Hence the awakening of thought is not just one of many critical points, but rather that one which marks a transformation which affects the state of the entire universe. Geogenesis has led to
biogenesis which has led to psychogenesis. Man has been reached, but evolution has not ceased. There is a further level yet to be attained. When living creatures first were able to reflect, to be conscious of their own being and its implications, the development of mind began a process of growth which Teilhard calls noogenesis. Above and beyond the biosphere which envelopes the earth, there is to be found the noosphere, the result of the human animal. There has come upon the earth a new layer that cannot be measured exclusively by material means since it is not just a material layer; it is a thinking layer. "This sudden deluge of cerebralisation, this biological invasion of a new animal type which gradually eliminates or subjects all forms of life that are not human, this irresistible tide of fields and factories, this immense and growing edifice of matter and ideas—all these signs that we look at, day in day out—seem to proclaim that there has been a change on the earth and a change of planetary magnitude" (FM, 183).

And so, in order to grasp the cosmic magnitude of man, Teilhard has followed his beginnings when the world itself first began its development. "But if we want to understand the specific nature of man and divine his secret, we have no other method than to observe what reflection has already provided and what it announces ahead" (FM, 189).

The Deployment of the Noosphere

As man spread over the earth, wandering from one place to another, a new form of consciousness came into the world, a social consciousness that was slow in its development. It was not until man was forced to settle in one place, to cease his nomadic wanderings that this social sense was to progress. It was at this time that the gropings of life were once more seen as men were
stimulated to research. "It was a marvellous period of investigation and invention when, in unequalled freshness of a new beginning, the eternal growing of life burst out in conscious reflection. Everything possible seems to have been attempted in this extraordinary period: the selection and empirical improvement of fruits, cereals, live-stock; the science of pottery; and weaving. Very soon followed the first elements of ideographic writing, and soon the first beginnings of metallurgy" (Pa, 204). The evolution of noogenesis was taking place upon the earth; consciousness was growing. Traditions were becoming organized and a kind of collective memory was being developed. The noosphere at this time was beginning to close in upon itself and to encircle the earth.

The upward thrust of the human phylum is seen by Teilhard to be spiraling through the civilization of the West. It has long since passed out of the hands of the Maya and Polynesian civilizations, and more recently through and beyond the civilizations of China and India onto that civilization produced by Mesopotamia, Egypt, Greece, Rome and the Judaeo-Christian tradition. Teilhard tells us that "it is easy for the pessimist to discount this period, so extraordinary among the civilizations which have fallen into ruins one after the other. Is it not far more scientific to recognize, yet once again, beneath these successive oscillations, the great spiral of life: thrusting up, irreversibly, in relays, following the master-line of its evolution? Susa, Memphis, and Athens can crumble. And ever more highly organised consciousness of the universe is passed from hand to hand, and glows steadily brighter" (Pa, 210). The main line of anthropogenesis is passing through the West; it is here that another layer of the noosphere is budding, and it is the densest of all. It is in this layer that we now live, and we must be aware of our milieu.
The Modern Earth

Because "we have become conscious of the movement which is carrying us along, and have thereby realised the formidable problems set us by this reflective exercise of the human effort" (PM, 214), our age is different from those that have gone before. Teilhard sees us as a generation forming the nexus between the old world and the new, the medium through which a new thrust upward will take place in the noosphere. Economic changes, industrial changes, and the great social awakenings of the masses which have taken place in the last century are indicative of an age of transition. The earth has gone through a period of saturation and is at the moment taking a decisive step which will bring about a critical change in the noosphere. Teilhard asks us to look carefully at the direction of the process of hominization so that we may come to understand it. And to do this, he would have us "probe beneath the surface and try to decipher the particular form of mind which is coming to birth in the womb of the earth today" (PM, 214).

Thus it is that modern man is one whose vision of himself and of all other things has been focused in terms of evolution. For Teilhard evolution is "a general condition to which all theories, all hypotheses, all systems must bow and which they must satisfy henceforward if they are to be thinkable and true. Evolution is a light illuminating all facts, a curve that all lines must follow" (PM, 218). The immensity of the universe which man grasps through the concept of biological space-time has enabled him to initiate this grand thrust upward. "In the last century and a half the most prodigious event, perhaps, ever recorded by history since the threshold of reflection has been taking place in our minds: the definitive access of consciousness to a scale of new dimensions;
and in consequence the birth of an entirely renewed universe, without any change of line or feature by the simple transformation of its intimate substance" (PM, 218). Consciousness is still evolving in the universe but now not only in a material world; that which is spiritual has entered the scene and taken hold of the development of the universe so that new dimensions which come into being can be the products of man.

It has taken ages for man to discover that he himself is the product of a long line of development; it has been by no means readily apparent to him that not only the preparation of his body but also the careful molding of his mind are the products of a most-prolonged evolutionary process. In connection with this Teilhard tells us:

From the very first pages of this book, I have been relentlessly insisting on one thing: for invidious reasons of homogeneity and coherence, the fibres of cosmoogenesis demand their prolongation in us in a way that goes far deeper than flesh and blood. We are not only set adrift and carried away in the current of life by the material surface of our being; but, like a subtle fluid, space-time first drowns our bodies and then penetrates to our soul; it fills it and impregnates it; it blends itself with the soul's potentialities to such an extent that soon the soul no longer knows how to distinguish space-time from its own thoughts. To those who can use their eyes nothing, not even the summit of our being, can escape this flux any longer, because it is only definable in accretions of consciousness. The very act by which the fine edge of our minds penetrates the absolute is a phenomenon, as it were, of emergence. In short, first recognised only at a single point, then performed extended to the whole inorganic and organic volume of matter, evolution is now, whether we like it or not, gaining the psychic zones of the world and transferring to the spiritual constructions of life not only the cosmic stuff but also the cosmic 'primacy' hitherto reserved by science to the tangled whirlwind of the ancient 'ether' (PM, 219).

Man is not a finished product inserted into the universe as a spectator who really does not belong and whose being is utterly other than that which surrounds him. Man too has grown up in this universe, but he is not just one of many integral parts. As Teilhard will show, the total construction of the
universe has been placed upon his shoulders; whether or not it reaches completion is his responsibility. "We are not only concerned with thought as participating in evolution as an anomaly or as an epiphenomenon; but evolution as so reducible to and identifiable with a progress towards thought that the movement of our souls expresses and measures the very stages of progress of evolution itself. Man discovers that he is nothing else than evolution become conscious of itself, to borrow Julian Huxley's concise expression" (Pi, 220). While all matter in the universe is endowed with consciousness (not, of course, in the spiritual sense), it is only man that has attained consciousness to the second degree, a degree that enables him to be conscious of himself as a person, as a center of convergence. Thus "the consciousness of each of us is evolution looking at itself and reflecting" (Pi, 220).

Thus it is that we find invention to be something innate not only in man but in all of matter. We have seen this before when we saw that matter 'groped' forward in its radial development to greater complexification and higher degrees of consciousness. Here again, as in nature, in the hominized state we find that light reflected on itself, glancing off and in a flash descending to the lowest frontiers of the past. But this time what its beam illuminates in us at our lowest stages is no longer an endless play of tangled verticils, but a long sequence of discoveries. In the same beam of light the instinctive gropings of the first cell link up with the learned groping of our laboratories. So let us bow our heads with respect for the anxieties and joy of 'trying all and discovering all!' The passing waves that we can feel were not formed in ourselves. It comes to us from far away; it set out at the same time as the light from the first stars. It reaches us after creating everything on the way. The spirit of research and conquest is the permanent soul of evolution (Pi, 223).

We can see that man is more than the center of the universe, he is "the arrow pointing the way to the final unification of life. Man alone constitutes the last-born, the freshest, the most complicated, the most subtle of all the
successive layers of life" (p. 223). This passage brings into focus and de-
dfines Teilhard's fundamental vision.

But how is man to lead the construction of the world? He has not yet
plumbed the depths of his own biological recesses sufficiently to be able to
direct his own procreative abilities. In this respect he is still the product
of the blind determinism of the genea. It is in another order that man is now
in a position to direct and order the further development of the universe.
"... the further the living being emerges from the anonymous masses by the ra-
diation of his own consciousness, the greater becomes the part of his activity
which can be stored up and transmitted by means of education and imitation.
From this point of view man only represents an extreme case of transformation.
Transplanted by man into the thinking layer of the earth, heredity, without
ceasing to be germinal ... in the individual, finds itself, by its very life-
centre, settled in a reflecting organism, collective and permanent, in which
phylogensis merges with ontogenesis. From the chain of cells it passes into
the circumboreal layers of the noosphere" (p. 224). Before the advent
of man heredity was passive, was being acted upon; now, however, it becomes
supremely active by becoming hominized. We have already seen man's emergence
from non-reflective matter, but we must remember that reflection did not star-
tle the world by blooming immediately into full flower. Rather, it has been
the task of milleniums to develop the intelligence of man to its present state.
Today education takes giant strides when it prepares the flexible mind of the
child for the facile reception of an insight that took perhaps centuries for
man to stumble upon.

But "we were not saying enough when we said that evolution, by becoming
conscious of itself in the depths of ourselves, only needs to look at itself in
the mirror to perceive itself in all its depths and to decipher itself. In ad-
dition it becomes free to dispose of itself—it can give itself or refuse it-
self. Not only do we read in our slightest acts the secret of its proceedings;
but for an elementary part we hold it in our hands, responsible for its past
to its future" ([PH, 225]. It is our responsibility to carry forward what has
been discovered in the past, but, even more, to continue the process so that
it may reach completion. Composed of both activities and passivities, we are
not to be totally passive in the face of a developing world; we must act. We
must look into the past to see where the world has come from in order to know
where it is going. Once we discover this direction, we will be able to judge
how we should act in the present to bring about what should be in the future.
"... when the first spark of thought appeared upon the earth, life found it
had brought into the world a power capable of criticizing it and judging it.
This was a formidable task which long lay dormant, but whose dangers burst out
with our first awakening to the idea of evolution. Like sons who have grown up,
like workers who have become 'conscious,' we are discovering that something is
developing in the world by means of us, perhaps at our expense. And what is
more serious still is that we have become aware that, in the great game that is
being played, we are the players as well as being the cards and the stakes.
Nothing can go on if we leave the table. Neither can any power force us to re-
main" ([PH, 229].

If we become aware of what is going on about us, we will find within our-
selves the upward thrust of consciousness. Where will it end? Does it not
seem that thought must go on propagating itself without end and ever spiral
higher and higher? It does indeed seen that the end of thought consists in there being no end. "Unique in this respect among all the energies of the universe, consciousness is a dimension to which it is inconceivable and even contradictory to ascribe a ceiling or to suppose that it can double back upon itself. There are innumerable critical points on the way, but a halt or reversion is impossible, and for the simple reason that every increase of internal vision is essentially the germ of a further vision which includes all the others and carries still further on" (FN, 230). The hope of the future is inextricably wound up in man's striving toward that which has yet to come into being. There is an absolute implied in every act he performs and toward which he strives. The more man becomes man, the further he proceeds along the path of consciousness.

We must face up to life. We cannot stop and wait, hoping that someone or something will push us in the right direction. To build a superior form of existence which will be a continuation of the evolutionary development, "we have only to think and to walk in the direction in which the lines passed by evolution take on their maximum coherence" (FN, 233).

SURVIVAL: The Collective Issue

One of the characteristics of consciousness that can be noted quite perceptively in man is psychic interpenetrability by which each conscious center influences those around it and is in turn influenced by them. In the noosphere by the very fact of the roundness of the earth human beings have been thrown into contact with one another and have had of necessity to socialize. This pattern of socialization has grown slowly, but in our own day we see as a fact
that consciousness cannot be isolated; the repercussions of thought affect the entire earth.

Teilhard envisions the world as seeking unity; this is one of the goals of the human species. In order to explain why this must be, he gives us two equations which he tells us he has been formulating throughout the book: evolution equals the rise of consciousness, and the rise of consciousness equals the effect of union. "The general gathering together in which, by correlated actions of the without and the within of the earth, the totality of thinking units and thinking forces are engaged—the aggregation in a single block of a mankind whose fragments weld together and interpenetrate before our eyes in spite of (indeed in proportion to) their efforts to separate—all this becomes intelligible from top to bottom as soon as we perceive the natural culmination of a cosmic processus of organisation which has never varied since those remote ages when our planet was young" (PM, 243). From the first grouping of atoms to the most complex development of the nervous system we have seen the tendency of matter to congregate into a single, but more complex and higher unity. We have seen a "mega-synthesis in the tangential, and therefore and thereby a leap forward of the radial energies along the principal axis of evolution: ever more complexity and thus ever more consciousness" (PM, 244). Now the human race is joined together—whether or not it be conscious of the fact—in a collective work in which all will advance toward completion in a spiritual renovation of the earth.

Of course, collective progress does not do away with individual death. This remains inevitable and must be encountered by all. But the building up of the species of man, the continuing evolution of the universe is a work that
not only utilizes the individual contributions of all those who do the building, but at the same time is the very process by which each individual can reach that degree of spiritual completion which his position in space-time has rendered possible.

As a collective unity, mankind must develop in some sort or other; it must acquire a particular type of conscious synthesis. Teilhard sees two possible ways in which this future evolution can take place. The first would be as a common power and act of knowing and doing, the second an organic super-aggregation of souls. There will be either knowledge or unanimity.

In the realms of knowledge mankind will progress by conquering that which is unknown. For until he does become conscious of the unknown, his own being is in a very real way incomplete. To be would not be enough for the universe; it must also be known. To the fact that knowledge can and should be sought for its own sake, it must be added that knowledge must be sought for the power that follows upon it. Matter cannot be mastered by spirit until matter is known; once known, it will be at the service of spirit. Action will follow upon this power which will bring an increase of being into the universe—a continuation of evolution.

As mankind continues to develop, the direction to be taken cannot lie along the path of the physical; it must be supra-physical. As we have seen, evolution has come along a path of growing consciousness which is ever thrusting upward higher and higher toward the spiritual and away from the material or physical. Reality itself is gaining newer dimensions of the spiritual. The critical point of reflection has been passed. Individual man has acquired a new power, a new reality, but more lies ahead. There is being born now, as has
already been indicated, a harmonized collectivity of consciousness which is equivalent to some sort of super-consciousness higher than any that has yet appeared upon the scene. "The idea is that of the earth not only becoming covered by myriads of grains of thought, but becoming enclosed in a single thinking envelope so as to form, functionally, no more than a single vast grain of thought on the sidereal scale, the plurality of individual reflections grouping themselves together and reinforcing one another in the act of a single unanimous reflection" (Ph. 251). Previously unused and unsuspected powers and energies that have been brought to light by the spiraling increase in modern knowledge contain the radial energy necessary for a new leap in the genesis of the mind. We are in the midst of a psychical expansion, which is at hand if we would only take notice of it. "Peace through conquest, work in joy. These are waiting for us beyond the line where empires are set up against other empires, in an interior totalisation of the world upon itself, in the unanimous construction of a spirit of the earth" (Ph. 253).

Beyond the Collective: the Hyper-Personal

After speaking of the construction of the spirit of the earth, Teilhard is at once reminded of the fact that the earth appears to be far from constructing such a spirit. In fact, it seems to be traveling in reverse. In answer to this objection, which is far from being a shallow one, he reminds us that evolution is not a process that has been known for its swiftness. On the contrary, half a million years, or perhaps even a million were required for life to develop from the pre-hominids to modern man. Granted that rapid development has taken place in the last few centuries, still this should not lead us to expect
the rhythm of noogenic transformation to be unreasonably accelerated. As in the past, we must expect imperceptible advancement.

As in every other form of life, man had to become legion in order to develop. And whatever is legion, cannot at first expect to be free from the chance and probability of such things as social and political revolutions. "However spiritualised we suppose its elements to be, every aggregate of consciousness, so long as it is not harmonised, envelops itself automatically (at its own level) with a veil of 'neo-matter,' superimposed upon all other forms of matter—matter, the 'tangential' aspect of every living mass in course of unification. Of course we must react to such conditions; but with the satisfaction of knowing that they are only the sign of and price paid for progress" (PH, 256). Still, the upsurge of consciousness which is expected does not seem to be present; instead there has emerged a type of mechanization which would seem to be cutting man off from the possibility of further evolution. Perhaps there is at present a waste of energies, a distortion of man's use of energy. Perhaps the resultant totalitarianism that we see all about us is due to the neglect of the person and the forces of personalization.

There appear to be two reasons for the depersonalization of man. The first is the result of analysis which modern science delights in and which enables it to produce such tremendous discoveries. We are good at taking things apart, but not too apt at putting them back together. Analysis lends itself to the impersonal. In the same way our apprehension of the immensity of the universe has led to a certain impersonalization since it appears that the world has been produced from an immense impersonal sidereal energy, is governed by it, and returns to it after a short-lived existence on earth. This, perhaps, is the
tendency which some find themselves following. But such a viewpoint is not vindicated by the facts as we have seen them thus far.

Evolution has been viewed as an ascent toward consciousness, which fact immediately leads us to the conclusion that the culmination of evolution, far from being the impersonal, should be some sort of supreme consciousness. The supreme consciousness would result in an illuminating involution of being upon itself which would bring the person into even clearer focus. This follows from the three-fold property possessed by every consciousness: "(i) of centering everything partially upon itself; (ii) of being able to centre itself upon itself constantly and increasingly; and (iii) of being brought by this very supercentration into association with all the other centres surrounding it" (Ph, 259). We have seen the proof of this statement as we followed evolution from the atomic to the human state. It is most evident in man himself who in reflecting becomes a partial center of the universe, who as he matures can become more and more conscious of his own being and its implications, and who lives as a social being and not as an estranged personality out adrift from the world.

And now Teilhard sees evolution ascending even higher in the order of consciousness, toward "the birth of some single centre from the convergent beams of millions of elementary centres dispersed over the surface of the thinking earth" (Ph, 259). He sees the noosphere coming of age since it represents a whole that is not only closed but also centered. The centration indicates the structure of the noosphere and should resolve any opposition that arises between the impersonal and the personal.

Because it contains and engenders consciousness, space-time is necessarily of a convergent nature. Accordingly its enormous layers, followed in the right direction, must somewhere ahead become involuted to a point which we might call Omega, which fuses and consumes them integrally in itself.
However immense the sphere of the world may be, it only exists and is fin-
ally perceptible in the direction in which its radii meet—even if this were beyond time and space altogether. Better still: the more immense this sphere, the richer and deeper and hence the more conscious is the point at which the 'volume of being' that it embraces is concentrated; because the mind, seen from our side, is essentially the power of synthesis and organi-
sation (PI, 259).

The culmination and evolution of our consciousness must not be looked for in either the present or the impersonal future, but rather beyond at the Omega Point which is hyper-personal.

The individual human being who has crossed the threshold of reflection has been characterized by Teilhard as having an eternal deepening of consciousness upon himself. But also he sees the collective personalization of the noosphere as the accomplishment and completion of evolution. How can the personalization of the individual and the whole take place at the same time without endangering the fulfillment of one or the other? By definition the Omega Point is "the board of consciousness liberated little by little on earth by noogenesis [which] adds itself together and accumulates" (PI, 260). Immediately the problem arises as to the meaning of 'addition to consciousness.' What does this signi-
fy? It does not refer only to the successive acquisitions of knowledge and in-
vention that man has passed on from generation to generation; although these are of vital importance, still they are only the shadows of man. They are not enough. For we work only "to establish in and by means of each one of us, an absolutely original centre in which the universe reflects itself in a unique and inimitable way" (PI, 261). While what we do is of the utmost importance, it is not a total and in itself; it is only a step in the evolutionary process toward higher being—all important as a means, but only a means. The centers toward which we strive are ourselves and our personalities.
The very centre of our consciousness, deeper than all its radii; that is the essence which Omega, if it is to be truly Omega, must reclaim. And this essence is obviously not something of which we can dispossess ourselves for the benefit of others as we might give away a coat or pass on a torch. For we are the very flame of that torch. To communicate itself, my ego must subsist through abandoning itself or the gift will fade away. The conclusion is inevitable that the concentration of a conscious universe would be unthinkable if it did not reassemble in itself all consciousnesses as well as all the conscious; each particular consciousness remaining conscious of itself at the end of the operation, and even (this must be absolutely understood) each particular consciousness becoming still more itself and thus more clearly distinct from others the closer it gets to them in Omega (Ph, 261).

From this we can see that Omega is far from being depersonalizing. On the contrary, a person becomes more a person the closer he approaches Omega. In fact, it would seem that being united to Omega is indispensable if one wishes truly to become a person.

In every synthesis, union both perfects and differentiates. In the spiritual synthesis toward which we are advancing, individuals would be united one to the other, but in such a way that they would be more totally differentiated than they could ever have hoped for without such a union. Such a synthesis would avoid all taints of pantheism in which individuals would be merged like dissolving grains of salt. Rather the individual grains of consciousness would tend to accentuate the depth and incommunicability of their personalities in such a way that they would be even more themselves.

Thus, under the influence of these two factors—the essential immiscibility of consciousnesses, and the natural mechanism of all unification—the only fashion in which we could correctly express the final state of a world undergoing physical concentration would be as a system whose unity coincides with a paroxysm of harmonised complexity. Thus it would be mistaken to represent Omega to ourselves simply as a centre born of the fusion of elements which it collects, or annihilating them in itself. By its structure Omega, in its ultimate principle, can only be a distinct Centre radiating at the core of a system of centres; a grouping in which personalisation of the All and personalisations of the elements reach their maximum, simultaneously and without merging, under the influence of a supremely autonomous focus of union (Ph, 262).
The Omega then is not just the total of all individual consciousnesses; it is something more; in fact, it is an individual center toward which all other conscious beings tend.

To become a person, it is necessary not to confuse individuality with personality; an individual is not necessarily a person. There must be a meeting of centers of consciousness on the intersubjective level which will allow a synthesis of centers to take place. But what, we may ask, is the energy which is to allow us to do this? It is at this point that love enters the scene. Teilhard defines love as the "affinity of being with being" (PH, 264). In applying the definition, we can see that love is not peculiar to man, but applies in its own way to each being as it advances along the tree of life. The tendency toward union which is the characteristic of consciousness is love. Thus "to perceive cosmic energy 'at the fount' we must, if there is a within of things, go down into the internal or radial zone of spiritual attractions" (PH, 264). Love then appears to be no more than the trace of the psychical convergence of the universe upon itself which is found in all matter.

Absence of love can help explain the lack of success which we have had at the level of human collectivization. Whenever unification is attempted on only the material level, consciousnesses cannot help but be enslaved. Only love is able to unite living beings so as to complete and fulfill them, since only love takes them and joins them by what is deepest and most profound in them. Teilhard sees man's capacity for love as extended to all, a universal love. This, in fact, is the only complete and final way in which man is able to love. What restrains us from actualizing this potentiality that we find within ourselves is our failure to accept the reality of some source and object of love at the
summit of the world above and beyond us. As such, collectivity is essentially unlovable; man cannot give himself to something that is only mechanical and anonymous. "But if the universe ahead of us assumes a face and a heart, and so to speak personifies itself, then in the atmosphere created by this focus the elemental attraction will immediately blossom. Then, no doubt, under the heightened pressure of an infolding world, the formidable energies of attraction, still dormant between human molecules, will burst forth" (T, 267). The energies of the human molecules will not engender a new personality but will have the characteristics of personality, as Teilhard makes clear in a footnote: "Not, of course, by becoming a person, but by charging itself at the very heart of its development with the dominating and unifying influence of a focus of personal energies and attractions" (T, 267).

In order to explain why Omega must be present now, Teilhard examines the notion of love and the notion of survival. First, in considering love, he says: "Expressed in terms of internal energy, the cosmic function of Omega consists in initiating and maintaining within its radius the unanimity of the world's 'reflective' particles. . . . For love to be possible there must be co-existence. . . . Neither an ideal centre, nor a potential centre could possibly suffice. A present and real noosphere goes with a real and present centre. To be supremely attractive, Omega must be supremely present" (T, 269). In order that reflective beings act, they must be energized by Omega. If love is present, then Omega must be present in the order of finality. But, as we have seen, love is present in every consciousness, since every consciousness tends toward completion and fulfillment in so far as it is able in its particular stage of evolution; therefore, Omega is present.
The struggle for survival also necessitates the presence of Omega since the phenomenon of death demands an end for man that is independent of the temporal forces which make up evolution. Omega stands outside space-time and is the center toward which man gravitates.

In examining the evolutionary process we see that evolution emerges successively and with mechanical dependence on what has gone before. There was first a grouping of elements and then the appearance of a 'soul' or conscious aspect. We found that the radial was a function of the tangential in the same way as a pyramid has an apex which is supported by its base. In the same way Omega is discovered at the end of the evolutionary process, the spiritual being supported by a base founded in matter. While Omega is the end of the evolutionary process, it is also outside of it. But "when, going beyond the elements, we come to speak of the conscious Pole of the world, it is not enough to say that it emerges from the rise of consciousnesses; we must add that from this genesis it has already undergone emergence: without which it could neither subjugate into love nor fix in incorruptibility. If by its very nature it did not escape from the time and space which it gathers together, it would not be Omega" (P, 270). For Teilhard, Omega is not something generated by evolution even though it is its term. Rather it is something that both had to pre-exist and co-exist so that evolution could take place. Thus Omega is the principle which can explain the march of things toward greater consciousness; it is the guiding principle that gives meaning and intelligibility to matter. Because of its tangential energy the world dissipates itself into matter; because of its radial energy "it finds its shape and its natural consistency in gravitating against the tide of probability towards a divine focus of mind which draws it
"Prime Mover ahead" (Pl, 271).

During the course of evolution the "Prime Mover ahead" (Pl, 271) drew to itself the whole of the universe by means of the radial energy of atoms, molecules, organisms, and animals. The only way that the radial was able to be expressed was in the different aggregates which it produced. Below the human level, there was no real unity since the aggregates were still material even though they were straining toward the spiritual. But with the advent of reflection, a new type of unity appeared upon the scene. Man became a center conscious of itself and therefore a person. "When consciousness broke through the critical surface of hominisation, it really passed from divergence to convergence... Once formed, a reflective centre can no longer change except by involution upon itself. To outward appearance, admittedly, man becomes corrupted just like any animal. But here and there we find an inverse function of the phenomenon. At death in the animal, the radial is reabsorbed into the tangential, while in man it escapes and is liberated from it. So we come to escape from entropy by turning back to Omega: the hominisation of death itself" (Pl, 272-273). Since the consciousness of man is spiritual it is not reabsorbed into the total tangential energy of the universe once the complexity of its material parts decompose. It is the spiritual that escapes into Omega.

Thus there is being built a universe composed of reflective beings who develop in the inverse direction of matter. The universe has evolved since its beginning toward the person. "All round us, one by one, like a continual exhalation, 'souls' break away, carrying upwards their incomunicable load of consciousness. One by one, yet not in isolation. Since for each of them, by the very nature of Omega, there can only be one possible point of definitive emerg-
sion—that point at which, under the synthesising action of personalising union, the noosphere (furling its elements upon themselves as it too furls upon itself) will reach collectively its point of convergence—at the 'end of the world'" (PM, 272). The ultimate point of evolution for each individual is the breaking away from matter into spiritual completion and fulfillment at a point of convergence in union with the Omega.

The Ultimate Earth

Evolution has proceeded with the involution of matter upon itself that has led to the development of the noosphere. But in the future there is ahead of us "a psychical centre of universal drift, transcending time and space and thus essentially extra-planetary, to sustain and equilibrate the surge of consciousness" (PM, 273). Teilhard sees noogenesis ascending irreversibly toward the Omega. What then shall be the ultimate phase of the phenomenon of man? "What the ultimate earth might be in a universe of conscious substance" (PM, 274) is one question that Teilhard attempts to answer. He does not hope to give ultimate and definitive answers but only to sketch what very well could be and to raise questions in our minds as to what will be.

The fact that Teilhard sees man as irreplaceable if the universe is to reach completion leads him to conclude that man must reach his goal. He does not say that all, each and every individual, must reach the goal, but rather that mankind must reach completion. Conceivably this could mean that fewer than the total would find fulfillment in Omega, but it also means there is no room for pessimism on the part of man. Recalling Teilhard's mention of "the Prime Mover ahead" who is Omega, we may feel sure that he sees Omega as having
the power to complete what it has drawn to itself for so many millions of years; the man in union with Omega is the completion of evolution.

He also recalls the youth of man and the remaining energy of the universe. Man is young in terms of evolution, and the energies of the universe promise a life-span of at least a few hundred million more years. Within this time Teilhard sees not a slowing-down of man's progress but a speeding-up of the forces of evolution in the human order. In this upsurge of consciousness along the human phylum, three main lines of development are seen in the offering: the organization of research, the concentration of research upon the subject of man, and the conjunction of science and religion. It is in these areas that the constant overflow of energy liberated by increased mechanization will be utilized. The present-day search and struggle for possessions will be replaced by an ever greater yearning for knowledge and being.

In the section in which he treats of the conjunction of science and religion Teilhard tells us that science cannot go to its limits if it is not "tinged with mysticism and charged with faith" (FM, 283). Concerning the motivation necessary to keep the scientist going, he tells us that he needs to be impelled by passionate interest, and "this interest is entirely dependent on the conviction, strictly undeniable to science, that the universe has a direction and that it could--indeed, if we are faithful, it should--result in some sort of irreversible perfection. Hence comes belief in progress" (FM, 283-284). It is here that we see Teilhard explicitly stating that the scientist as scientist cannot see ultimate direction or finality in his subject matter; he must transcend it.

Secondly, in the construction of the universe, the scientist can envisage
an almost unlimited vista of improvement in the human organism and in human society. "But as soon as we try to put our dreams into practice, we realize that the problem remains indeterminate or even insoluble unless, with some partially super-rational intuition, we admit the convergent properties of the world we belong to. Hence belief in unity" (PH, 284). Omega cannot be posited from purely scientific grounds although the evidence for its existence may well come from science. The mind of man must interpolate and go beyond the proportionate evidence which he finds in the subject matter of the physical sciences. Belief not only adds to vision, it completes it; and without it vision cannot help but have blind spots. "Furthermore, if we decide, under the pressure of facts, in favour of an optimism of unification, we run into the technical necessity of discovering—in addition to the impetus required to push us forward and in addition to the particular objective which should determine our route—the special binder or cement which will associate our lives together, vitally, without diminishing or distorting them. Hence, belief in a supremely attractive centre which has personality" (PH, 284). It is Omega which provides the final basis for unification; in fact, it is Omega that provides the foundation for everything. Here Teilhard says that Omega is "a supremely attractive centre which has personality." This is not a pantheistic outcome and conglomerate of all the personalities produced by evolution, but a person outside the confines of space-time—not the product of evolution, but its cause.

Today we have just begun to exploit the peculiar energy of reflection that is ours. We have no idea of the potentialities contained in the noosphere of which we are the members. There is a layer of reflective consciousness which has been stored up since the advent of man and which is waiting to thrust
ever higher and higher toward spiritualization. We are now just at the threshold. "Noogenesis rises upwards in us and through us unceasingly. We have pointed to the principal characteristics of that movement: the closer association of the grains of thought; the synthesis of individuals and of nations or races; the need of an autonomous and supreme personal focus to bind elementary personalities together, without deforming them, in an atmosphere of active sympathy. And, once again: all this results from the combined action of two curvatures—the roundness of the earth and the cosmic convergence of mind—in conformity with the law of complexity and consciousness" (EM, 287).

When mankind, taken as a whole, sufficiently converges so that it reflects upon itself at a single point, it will have completed its task of spiritualization; this will be the fulfillment of the spirit of the earth. This is the end of the world: "the wholesale internal introversion upon itself of the noosphere which has simultaneously reached the utmost limit of its complexity and its centrality . . . [and] the overthrow of equilibrium, detaching the mind, fulfilled at last, from its material matrix, so that it will henceforth rest with all its weight on God-Omega" (EM, 287). Finally, Omega is identified with God. At the end of the world man will become most conscious when he is united to God. Omega may not be accepted by all of mankind; this is a phenomenon observable in all of history. "A conflict may supervene. In that case the noosphere, in the course of and by virtue of the processus which draws it together, will, when it has reached its point of unification, split into two zones each attracted to an opposite pole of adoration" (EM, 288). One pole would converge upon Omega and find union and completion; the other would turn back upon itself; forever frustrated and cut off from union and fulfillment. Thus there would
be a schism of consciousnesses divided one against the other, one doomed to failure, the other united forever with Omega.

**EPilogue: The Christian Phenomenon**

Teilhard's positing of Omega has been sufficiently explained in the previous sections. But a problem arises. He sees Omega as already in existence; in fact, if it does not exist outside the confines of space-time, evolution could not take place. In this epilogue he reasons that Omega should in some way be manifested to us here and now. "To animate evolution in its lower stages, the conscious pole of the world could of course only act in an impersonal form and under the veil of biology. Upon the thinking entity that we have become by hominization, it is now possible for it to radiate from the one centre to all centres—personally. . . . It is at this point that we see the importance for science of the Christian phenomenon" (FN, 292–293). Hypothetically, Teilhard seeks to separate himself from his faith at this point to show that the fact of Christianity must be accepted if the universe is ultimately to be intelligible. Teilhard sees God as the provider, directing the universe with loving care and communicating himself to man within the limits set by the plan of evolution. He sees God as Omega drawing all things to himself.

The mission of Christ and His Church is also considered as being the living reality by which evolution can come to completion. "Christ, principle of universal vitality because sprung up as man among men, put himself in the position (maintained ever since) to subdue under himself, to purify, to direct and superanimate the general ascent of consciousnesses into which he inserted himself. By a perennial act of communion and sublimation, he aggregates to himself the total psychism of the earth. And when he has gathered everything
together and transformed everything, he will close in upon himself and his con-
quests, thereby rejoining, in a final gesture, the divine focus he has never
left" (PM, 294). The doctrine of the Mystical Body is expressed here, a unity
of a higher order which embraces the whole of creation. Through Christ, God
himself is the synthesis of all human centers. Portraying his vision at its
fullest, Teilhard says that the final stand of Christian dogma culminates with
Omega.

In fact the Christian phenomenon has produced a specifically new state of
consciousness—that of Christian love. This is the love of which Teilhard
spoke earlier as the basic energy of the universe. He did not name it then;
he only saw that it was necessary. It is only in adding the dimension of Chris-
tianity that its reality can be grounded in experience. Impelled by love, the
Church has the task of developing "the consciousness of finding itself in
actual relationship with a spiritual and transcendent pole of universal con-
vergence" (PM, 298). The Church must gather all creation into her arms, so
that through her creation may reach completion, so that its main shoots—men—
may consciously be united to God and therein find both their individual and
their social fulfillment.

SUMMING UP OR POSTSCRIPT: The Essence of the Phenomenon of Man

In this postscript, written ten years after The Phenomenon of Man, Teil-
hard recapitulates what he had said earlier and adds to it the reflections of
this decade. He tells us that: "Reduced to its ultimate essence, the sub-
stance of these long pages can be summed up in this simple affirmation: that
if the universe, regarded sidereally, is in process of spatial expansion (from
the infinitesimal to the immense), in the same way and still more clearly it
presents itself to us, physico-chemically, as in process of organic involution upon itself (from the extremely simple to the extremely complex)—and moreover this particular involution 'of complexity' is experimentally bound up with a correlative increase in interiorisation, that is to say in the psyche or consciousness" (PH, 300). In examining the original essay, we have seen the progression from the simple to the complex together with the complementary ascent of consciousness. That there is a structural relationship between complexity and consciousness has become certain as the evolutionary process unfolded before us. The novel aspect of Teilhard's presentation lay in the fact that consciousness, "defined experimentally as the specific effect of organised complexity" (PH, 300), transcended far beyond the ordinary vision of the scientist both in its imperceptible forms as in the molecule and in the more perceptible forms of human reflection; so that "along its axis of complexity, the universe is, both on the whole and at each of its points, in a continual tension of organic doubling—back upon itself, and thus of interiorisation" (PH, 301). We have watched this development from atom to man to Omega. For Teilhard this perspective must be retained if the phenomenon of man is to be explained.

In discussing the relationship between matter and spirit, Teilhard tells us that he is not considering these realities as things but rather as functions of one being. Thus he says that "at this level of reflection 'consciousness' presents itself and demands to be treated, not as a sort of particular and subsistent entity, but as an 'effect,' as the 'specific effect' of complexity" (PH, 307). As we have seen, in the progress of evolution there are specifically different orders of consciousness, so that the term cannot be given one univocal meaning but rather must be predicated analogically at each threshold
of development. With such a viewpoint in mind we can see that consciousness, in the ordinary scholastic use of the word, would apply only to the order of man. For Teilhard there are in fact three main divisions or orders of consciousness. The first is found in matter below man, the second is found in man himself, and the third is of a higher order than the human and shall be achieved when evolution has developed ahead and has been united to Omega. The first order could be further subdivided between consciousness in matter before the advent of life and after its coming, since the coming of life has also been considered as a critical leap. But it is evident that consciousness, while predicated meaningfully of all matter, is not predicated universally.
CHAPTER IV

CRITICISMS AND EVALUATIONS

Bruno de Solages

In his article on "Christianity and Evolution" Father de Solages, who is the Rector of the Catholic Institute of Toulouse, has two main objectives. The first is to situate evolution in the thought of the Church today and the second is to give a brief exposition of the teaching of Teilhard de Chardin, whose thought was developed within the framework of evolution.

The Copernican revolution which shattered the Aristotelian universe took centuries to be accepted. Men's minds had formed along one line of thinking, and these grooves were not easily erased. The case was somewhat the same when less than a century ago the Darwinian revolution destroyed the notions of time which man had used since the days of Aristotle. In connection with Darwin's theory there was an added motive for the Church's slow acceptance of the possibility of the evolutionary hypothesis. This motive arose from the fact that many evolutionists attempted to explain the development of the universe in purely mechanistic terms, thus doing away with God. Stated in these terms, such an hypothesis was untenable by anyone who wished to remain within the fold of the Catholic Church. Since these early beginnings, the notion of evolution has changed. Now in the science of paleontology we see that "animal and plant organisms have succeeded one another in a regular and hierarchic order during the course of geological periods. It is this fact, the accuracy of which we
cannot deny, that we translate by the word evolution."¹ It is in these terms that Father de Solages stresses the need for the present acceptance of evolution.

Because of this development in scientific hypothesis, Father de Solages sees the necessity of accommodating the facts of Revelation to the framework of an evolutionary concept of the universe. St. Thomas adapted them to the Aristotelian universe in the thirteenth century, and now it is necessary that the same task be performed for our own times. It is in the work of Teilhard de Chardin that he sees such a modern adaptation—not only of theological but also of philosophical truths.

Father de Solages first points out that a mind formed by scholastic studies in a seminary could be easily disconcerted by reading Teilhard's works. The reason for this is that to a mind of this type it is not immediately evident to which category of studies they belong: to science, philosophy, or theology. Thus it would be easy to see why Teilhard might be reproached by some for mingling his perspectives in such a way that his works would seem to have nothing but poetic value. This, of course, is not the case. Teilhard uses a literary form that is unfamiliar to the scholastic student, but this by no means signifies that he is unable to deal with truth. The point of view taken by Teilhard is not ordinarily assumed by the Christian philosopher. Teilhard does not start his consideration of man within an explicitly defined framework grounded in either philosophy or theology. He does use the framework of evolution, and it is this framework which will lead him to conclude that the

¹Bruno de Solages, "Christianity and Evolution," Cross Currents, IV (1951), 27. [This article first appeared in the Bulletin de Litterature Ecclésiastique, No. 4, 1947.]
content of philosophy and theology must be accepted if intelligibility is to be found in the universe.

In his discussion of Teilhard's method, Father de Solages says: "Nevertheless, though he assumes the scientific, objective point of view, the work of Father Teilhard de Chardin . . . is not exactly what we would call science in the restricted, contemporary sense of the term. Every study made from the scientific point of view, dealing not with a part but with the whole of reality, must necessarily take on a philosophical air, but this does not in itself make it a work of metaphysics or theology." 2 In fact, science seems to be referred to by Teilhard not just as the empirical science pursued by almost all scientists today, but rather as a derivative of aspire "to know." In this sense he takes the total data that come under the observation of man, attempts to explain it, and then to verify it.

The science of Teilhard would be more akin to the Physics of Aristotle who even introduces a demonstration of the Prime Mover into his work on natural philosophy. Teilhard is attempting "to discover a point of view from which the real would appear coherent, unified, and consequently, intelligible." 3 And, in doing this, he is not trying to give a complete explanation of reality but only an introduction to the explanation of the world. By taking man as his central theme, he is trying to "establish a coherent order of human consequents and antecedents, and to discover in the elements of the universe not only a system of ontological and causal relations but an experimental law of recurrence.

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2 Ibid., 30.
3 Ibid.
expressing the successive appearances in the course of time." In this, as in any "ordering system" or "explanation" conceived by the mind of man, it is necessary that time prove whether or not the vision is essentially correct. It is up to others to modify and further develop what is only meant to be a beginning. Thus Father de Solages says that "this expose of totality, essentially done from the phenomenalistic point of view, is therefore by definition incomplete, since it does not study reality in all its profundity; it is not therefore a substitute for metaphysics or, a fortiori, for theology."5

In viewing reality from the evolutionary aspect, we must recognize that evolution develops from electron to man, always toward greater complexity. And evolution is progressing toward spirit, since the ascent toward a more complex organization is paralleled by an ascent toward greater consciousness and liberty. This is the law of continuity in the universe, but this law does not lead to a monistic explanation of the universe since, once the process of evolution arrives at a certain degree of complexity, it must change its plane to proceed. Thus, in the midst of observed continuity there are necessary discontinuities, the beginnings of new orders. The greatest discontinuity is observed with the appearance of man whose consciousness is essentially different because of its characteristic note of reflection. And, looking to the future, following the same law of complexity-consciousness, the universe must continue to evolve toward a higher plane which will be a new synthesis. The new development would be a birth of a community of spirits, in which the forward progress of humanity

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4 Ibid.
5 Ibid., 30-31.
would be achieved by love in God, who is the transcendental center of evolution
toward whom all things tend. Looking at the perspective gained from Teilhard's
phenomenology, Father de Solages states that "the successive syntheses of evo-
lution are never identical but only analogous to one another."\(^6\) Again both con-
tinuity and discontinuity are emphasized.

"You can see what a magnificent coherence the whole scheme of things takes
on when you come to accept this viewpoint. You can also see how evolution,
thus considered, appears not materialistic, but essentially spiritualistic, not
pantheistic but theistic, not deterministic but directed by God, not immanent
but requiring the transcendental, not anti-Christian, but leading logically to
the Christian supernatural. Those who think they see in this view pantheism,
totalitarianism, immanistic naturalism, do not understand its profound inspira-
tion."\(^7\) Teilhard's vision seems to give an intelligibility to the universe
that had been wanting. Neither science, nor philosophy, nor theology as dis-
tinct disciplines, had been able to hit off a really persuasive argument for
total coherence. When vision is attained on all these levels, intelligibility
becomes evident. The development of the universe is a progression from the ma-
terial to the spiritual, an ascent of consciousness from that which is entirely
directed to that which can partially direct itself. Omega, which draws all
things to itself, is also the Alpha, which begins and directs all things. Also,
the Omega is transcendent, thus nullifying any suspicion of pantheism; and the

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\(^6\)Ibid., 33.
\(^7\)Ibid., 35.
analogous use of the different planes or orders of development takes away the threat of panpsychism.

Teilhard has found finality in the universe; in this he follows in the footsteps of Aristotle. Only now, instead of positing a cyclic theory, he sees the world progressing in a certain direction. The Aristotelian and Thomistic principle *desiderium naturae non potest esse insan* still holds good, but now it is extended to the totality of phenomena which are found within this evolving universe. And the law of complexity-consciousness is conceived as the norm necessary to understand and judge this procession toward the spiritual.

**Louis Cognet**

Abbe Cognet wrote *Le Père Teilhard de Chardin et la pensée contemporaine* in a spirit both of sympathy and of criticism. This spirit was definitely in contradistinction to that in which *L'évolution rédemptrice du P. Teilhard de Chardin* was written. After reading *L'évolution rédemptrice*, which was published anonymously at Paris in 1950, one has the impression that Teilhard was a well-meaning, but completely befuddled priest who played with ideas which he would have been better advised to have left alone. Since this book does not deal specifically with *The Phenomenon of Man*, it will not be considered here. Suffice it to say with Abbe Cognet that there is evidence in this book of an hostility which seems to have no other end than to brand Teilhard as heretical. Each chapter appears only to add more fagots to the fire. The author was ap-

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3 Ibid.
parently quite sure of his position since he courageously remained anonymous. 9

Again the question of methodology is raised, and again Teilhard’s use of the scientific method is viewed as something more than is usually meant by this term. In fact, it is stated that his usual procedure is to use a unique method which combines the three viewpoints of science, philosophy and theology. 10 This would not seem to be the case, since Teilhard is not dealing with these three sciences but rather with the evolutionary process which would include the content of these disciplines.

Abbé Cognet makes an interesting observation concerning Teilhard’s preoccupation with evolution. "In the thought of Teilhard de Chardin evolution is not an a priori position, but a simple submission to the real. Confronted with the data given him by the natural sciences, he sees no other reasonable or even conceivable solution to the problem. . . . To arrive at an evolutionary theory of the world, it is necessary to generalize, to extrapolate." 11 Evolution for Teilhard is not just another theory. If the real is to be explained, the eyepiece of evolution must be used; in fact, it is no more than an acceptance of the intelligibility which is in the data to be considered. Granted that the evolutionary hypothesis presupposes a higher viewpoint, still this higher viewpoint must be used if man’s vision is to be total.

But still this adherence to the theory of evolution leaves Teilhard open to criticism. If the universe and all its members have evolved in a continuous

10Ibid., 59-60.
11Ibid., 33-34.
line, man is really just a combination of atoms and is in no way specifically different from his fellows. In other words, a monist explanation of the universe would be given. Teilhard does not follow this line of reasoning. While seeing development diversified along a single line, he also adds that each critical development gives birth to a completely new order of beings which are absolutely different from those which have preceded them. Again we witness the insertion both of continuity and of discontinuity. 12 Even though Abbé Cognet understands Teilhard's doctrine in the manner explained above, still he criticizes him for not explicating more clearly what he is about and for leaving himself open for attack on this ground. Thus he sees reasons why Teilhard could be interpreted as explaining a history of the world which develops coherently and continuously, rigorously immanent in a manner in which no transcendence need be introduced. 13

Despite Teilhard's insistence that he wishes to form an a posteriori explanation, Abbé Cognet thinks that he places man at the peak of evolution only because of an a priori judgments. In particular, Teilhard's choice of the law of complexity-consciousness seems to Abbé Cognet to beg the question. "He demands then the primacy of consciousness because of the multiplicity of relations which it permits. But this multiplicity is in fact only discernible if one has already assumed the viewpoint of consciousness; that is to say, if, in short, one begins from the very superiority one pretends to demonstrate. The criterion of complexity then can make sense only for a man endowed with intelligence and

12 Ibid., 65-66.
13 Ibid., 92.
who judges afterwards about it. It is difficult to see what meaning this could have for the protozoa. Fundamentally, the superiority of consciousness is established by postulating it. Granted that the protozoa would not, in fact could not, find meaning in the criterion of complexity; still, this does not seem to be a basic objection. There is no doubt that Teilhard knew before he started his investigations that man would land on top of the heap. It would probably be true to say that he had a bias (if one wishes to call recognition of the truth a bias) in this direction, but it does not therefore seem reasonable to conclude that he could not observe a sequence of development in evolving beings and abstract from the data a norm by which to judge their perfection. On the other hand, the criticism seems to be just since all knowledge is in a way circular. At times we might wish that this were not so, but it seems to be the case. We must use intelligence to discuss intelligence. If this is an assumption, everybody has to make it. Man does have to possess a certain type of natural faith arising from a confidence in his own powers which tells him that he can know and will and that which can know and will is superior to that which cannot. Still, that man is the sum of all previous evolution and more can be observed. And it is in these observations that one can find the intelligibility necessary to form a law such as that of complexity-consciousness, which can then be used to classify even oneself.

Abbé Cognet considers Teilhard's vocabulary as very imprecise and very confusing. This confusion appears to be especially evident in regard to terms such as soul, spirit, consciousness, and thought. A trained philosopher or

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14 Ibid., 73-74.
theologian finds it disconcerting to have these terms used interchangeably. In
fact, Abbé Cognet thinks that Teilhard, in attributing consciousness to all
material beings, is proposing a sort of panpsychism. When Teilhard proposes
the notion of consciousness as "a cosmic property of variable grandeur," this
interpretation would appear to be valid. But again, at each level of complexi-
"fied centers there is an essentially different concentration of consciousness.
Still Abbé Cognet finds Teilhard's explanation lacking:

Certainly Father Teilhard de Chardin took the precaution of calling to our
attention the fact that each concentration makes us enter into a new order,
separated from the preceding by a threshold, by a leap, which, in his
sense, introduces discontinuity into continuity. Still, it cannot be seen
how the new order can differ from the preceding. . . . It is certainly
not impossible that that notion of a threshold which separates matter from
life and life from consciousness was able to permit Father Teilhard de
Chardin to render more acceptable his theory of evolution while introducing
the idea of an ontological discontinuity, through which the notion of
metaphysical transcendence would be introduced. I regret that he did not
formulate this more clearly and emphasize this aspect of his system.15

Whether or not Teilhard successfully delineated his position clearly enough so
that no one could accuse him of panpsychism appears to be the main objection
here. In fact, it might also be asked whether Teilhard successfully surmounted
this obstacle in his own thought. That he did not wish to propose panpsychistic
doctrine is evident; whether he succeeded in doing this is another question.
Abbé Cognet answers it in the negative. Certainly the analogous predication of
consciousness is not explicitly stated by Teilhard, but, when he says that each
new level of consciousness introduces discontinuity into continuity, he impli-
citly affirms the analogous predication of consciousness.

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15 Ibid., 96.
16 Ibid., 98.
Claude Tresmontant

Tresmontant's was the first book on Teilhard to appear in English. In it is contained a good sampling of Teilhard's thought, since there are excerpts from many more works than The Phenomenon of Man.

Tresmontant cites a passage from an essay entitled "Centrologie" which Teilhard wrote in 1944 and which expresses a little more clearly the purpose of his phenomenological method: "Here is no a priori geometric synthesis proceeding from a definition of being, but a experimental law of recurrence, verifiable in the phenomenal sphere and which can be properly extrapolated to the totality of space and time. Thus here is no abstract metaphysics, but a realistic ultra-physics of union." Here a difference of method is emphasized, a difference of starting points. Teilhard wishes to begin with sensible data, to understand it. He must interpolate to reach the conclusions which the phenomena presented demand for a total explanation. Let us remember here that the phenomena are not restricted to those that can be empirically measured, but include the total data which would necessitate a higher viewpoint than that ordinarily assumed by the science of today. It is true that physics does not have to take reflection into account, but a rational psychology that ignored it would be signing its own death warrant. In the utilization of this method metaphysics would not be a science with which one begins, but rather would be the outcome and outgrowth of a painstaking investigation of the evolving world. The law of recurrence turns out to be the law of complexity-consciousness.

18 Ibid., 14.
Thus Tresmontant tells us that "the vision of the world thus disclosed is of philosophical import and value, but it commits the philosopher only to the extent that it has been formulated by means and according to methods, rigorously free from any extrascientific presuppositions."19 This means that the philosophical conclusions which man arrives at must be grounded in experience; they must coincide with the reality which they are trying to explain if they are to be true. Philosophy must not be a pipedream, a preconceived system to which reality must conform. And a metaphysics that is static cannot be verified in experience, since the reality it seeks to explain is not static; it is in the process of becoming. For this reason it is necessary that any true philosopher take evolution into consideration when he seeks an explanation.

For example, the question of finality is usually a problem for the philosopher and not for the scientist. But the scientific interpretation of data or phenomena is a search for direction, and any phenomenology which is to be integral implies this search. And so, it can be said that "Teilhard's originality probably lies in the fact that he introduced this legitimate demand for an elucidation of direction into the realms of cosmo-, biogenesis and anthropogenesis."20 It is Teilhard's objective to show from an examination of the data that the universe does have direction, that its development must be included in the category of finality. "Teilhard's entire scientific work can be characterized as an effort to read the direction of evolution in reality itself, without recourse to any metaphysical presupposition, in order to

19 Ibid., 16.
20 Ibid., 21.
elucidate its immanent intentionality in the very order of phenomena, and using the scientific method alone."21

The norm that Teilhard found experimentally was the law of complexity-consciousness. This was his law of recurrence which unified an evolving universe which has orientated itself toward more and more complex states and whose growth in complexity has been paralleled by a corresponding growth in conscious-

ness. And as evolution proceeded along its course and gave birth to ever more complexified beings, a more exact ruler was needed to measure the state of complexity. Teilhard found this in the yardstick of cephalization. The nervous system which is the organ connected with the psychic development of being is taken as the norm of consciousness in higher beings. Again, it is the observa-

ble actions of these higher animals that have merited their being placed near the top of the tree of life.

With the crossing of the threshold of reflection evolution entered a new phase in its development. The advent of man brought into reality the fact that the invention of man will determine to a great extent the continuance of evolu-

tion. It is man's task to note the direction of evolution and to act accordingly. If he does not, the development of the world can be frustrated.

Because of a necessary extrapolation from the data Omega is placed at the end of the evolutionary process. Given direction or finality, there must be a term, there must be an end. But there is direction; therefore, there is such a term. This is not a strict demonstration of the existence of God, but rather

21Ibid., 21-22.
a demonstration leading "to the recognition of a personal, transcendent center, toward which creation converges, and in which it finds its consistency." 22

Léopold Malévez, S.J.

Father Malevez considers Teilhard's methodology as philosophical and not scientific since the affirmations that he makes concerning such major facets of his doctrine as the point Omega cannot be made on purely scientific grounds; philosophical considerations must enter in. It would seem therefore impossible to deny that Teilhard extrapolates beyond the specific data that he has before him. 23 Still it would also appear that his methodology is not strictly philosophical even though he may have arrived at and used philosophical principles; for these reasons alone it would not seem necessary to label Teilhard's methodology as philosophical.

But Father Malevez is not primarily interested in this aspect of Teilhard's work. He would rather examine it to determine whether or not it establishes the singularity of man. To introduce this topic, he refers to Teilhard's general postulate of the unity of the stuff of the universe. This postulate has been expressed by Father d'Armagnac in the following manner: "What clearly manifests itself at any given level of the universe must exist, at least to an infinitesimal degree, in all the other strata of the universe." 24 If this

22 Ibid., 62.
postulate is applied to phenomena as they move from lower to higher forms, Father Malevex thinks that man's distinctive trait, rationality, would be hidden behind inexact terminology. The reason for this would be that the unifying impulse of the mind moving from lower to higher forms would become univocal in its application to physical, biological, and human realities.

As has already been pointed out, Teilhard would immediately deny this conclusion since he says that realities such as consciousness do not remain the same on all the levels of evolution. There is more than a growth in degree; rather there is a change in state. Undoubtedly it is true that Teilhard is seeking to overcome the dichotomy between matter and spirit that is the outcome of two millennia of philosophical and theological investigations, but this does not substantiate a statement that would attribute complete univocity of being to his system. Rather it points out that emphasis should be placed on the actually existing being within the context of its existence and not only in the abstract arena of the dialectician.

Because Teilhard does not stress the discontinuity between man and the rest of creation, Father Malevex says that he is out of step with contemporary philosophy which stresses this point above all. Man as subject is not brought into the proper light; instead he is considered as anonymous, as having no name, as an object. This criticism is true enough—in one sense, but not in every sense. It is fine to consider man as subject, to deal with the personal, but this view can become as thoroughly distorted as a consideration of man from a purely impersonal viewpoint. In his work Teilhard appears to set up the context in which man can truly be studied as subject. His place in the total economy of creation is determined; upon this basis a deeper explanation of man as
subject can be achieved. Without it, it seems that man could not know himself as fully, since in fact he knows himself only through confrontation with reality. Therefore, the more the total coherence of reality is known, the more the subjectivity of man will be intelligible. It can also be added that any study of man, even from the side of the subject, must be objective, if it is to be philosophy in the scientific meaning of the word.

Thus Father Malevez considers Teilhard's description of the phenomenon of man deficient, but not because his principle of the unity of the stuff of the universe is incorrect. It is rather because Teilhard considers this to be a scientific and not a metaphysical principle. And so Father Malevez says that "when Teilhard deliberately includes the spirit in his postulate of the unity of the stuff of the universe, it ceases to be a scientific theory. It becomes instead a metaphysical principle." 25 But Teilhard is not considering the unity of the universe philosophically; his point of view is phenomenological. And is not this one of the very things that Teilhard is attempting to do? He is trying to show that a total explanation of the universe demands a leap to a higher viewpoint and that observable data cannot be explained entirely by reference to a purely empirical system. A metaphysics is therefore demanded by the inquiring intellect of man who will not remain satisfied with an incomplete answer on the empirical level. In the extrapolation to Omega it appears implicitly that man will also rest unsatisfied with the answer provided by even metaphysical explanations, since the Christian phenomenon cannot be explained by this approach. Finally then, the present context of reality, which includes

25 Malevez, p. 140.
observable data of supernatural institutions will demand a higher viewpoint than metaphysics can provide.

Father Malevez names Teilhard's postulate the principle of proportionality and of analogy and expresses it in this manner: "Ontological perfections are common to all beings, each according to its degree. By ontological perfections we mean those properties of being such as unity, activity, life, intelligence, will. These perfections are verified on all the levels of being, precisely because they are nothing but the very aspects of being itself. It is impossible for being not to be, everywhere, what it is."26 This principle is perfectly acceptable in scholastic philosophy and is the principle which we have been asserting that Teilhard is using in his attribution of consciousness to beings on various levels of the tree of life.

However, Father Malevez thinks that Teilhard omitted one important qualification in his use of this principle. He says that "the presence of the identical ontological perfections in all degrees of being means that this presence is qualitatively measured by their essences and levels and that it narrows hierarchically toward the lower echelons of being by a law of intensive proportion. Teilhard, however, holds a universal concept of being."27 It is at this point that we disagree with Father Malevez. Perhaps, for scholastic readers, for whom he did not expressly write, it would have been more prudent if Teilhard had explicitly stated in scholastic terminology that he considered being to be an analogous notion. He did not do this. However, it is clear

26 Ibid.
27 Ibid., 141.
that this is what he intended. In the analysis of The Phenomenon of Man many sections have been quoted to this effect. Perhaps here it would be good to recall one of them: "If, as follows from the foregoing, it is the fact of being 'reflective' which constitutes the strictly 'intelligent' being, can we seriously doubt that intelligence is the evolutionary lot proper to man and to man only? If not, can we, under the influence of some false modesty, hesitate to admit that man's possession of it constitutes a radical advance on all forms of life that have gone before him. Admittedly the animal knows. But it cannot know that it knows" (Pa, 165). Again, we think that Teilhard's strategy is one that prepares the mind of the reader to acquire his own insights into the intelligible data presented. In this case there is no bald statement making the doctrine of analogy an article of faith, but there is rather a preparation that enables the inquiring mind to gather the fruits of its own labor.

Thus when Father Malevez states that "Teilhard could speak of the passage from one state to another only in terms of an ascent of life and consciousness, of a sort of liberation of consciousness originally imprisoned in matter,", he implies again that Teilhard had a univocal concept of being and therefore that he was predicating consciousness univocally. This we deny. But, unlike others, Father Malevez does not think that Teilhard has rejected the transcendence of a creator who stands outside the onrush of the evolutionary process. And so he concludes that Teilhard viewed evolution as dependent at every moment on the power of God: "Yet Teilhard could rightly claim that his system, since it was limited to phenomena and experimental relations between consciousness

\[\text{\textsuperscript{28} Ibid.}\]
and complexity, did not encroach upon the action of the transcendent God-Omega, who existed before the world, made it, and constantly attracts it to himself by a creative conservational operation. For Teilhard it is not evolution which creates; evolution is merely a manifestation of God's creative activity."29

Even granting this, Father Malevez still denies that the language of Teilhard leaves room for the immediate creation of the human soul, for "if consciousness is already univocally present in the subhuman organisms, it becomes difficult to maintain that these organisms play no role in the production of the spiritual reality considered as such."30 Father Malevez states that Teilhard had no intention of leaving this loophole, but that his language was not equal to the task. Again, the difficulty can be resolved if one will accept the fact that Teilhard does hold and use an analogical concept of being and, therefore, of consciousness.

Nicolas Corte

Nicolas Corte gives two chapters in his book Pierre Teilhard de Chardin: His Life and Spirit to an analysis of The Phenomenon of Man. The whole tenor of the book shows that Teilhard is regarded as a hero who, while ranking head and shoulder above his fellows, still shares in human failings and who can for this reason be criticized.

In his examination of Teilhard's major work, Corte tells us that Teilhard's conception of "pre-living" is what we usually call matter and that "in calling

29 Ibid.
30 Ibid.
it 'Pre-life' Teilhard wants to imply already that there is a direction, a
tendency, an obscure sort of will in matter." 31 In the opening chapters of his
book then Teilhard is structuring the statements that he makes about evolution:
what is observed indirectly as appearing before the advent of life is pre-life.
This structuring appears to be justifiable in view of the fact that life is the
observed outcome of evolution. This is no more than to say that the intelligi-
bility of finality is immanent in the evolutionary data and that the mind of
man can with due labor apprehend it.

When Corte introduces a section on the inside of things, he enters speci-
fically into the problem of consciousness. He recognizes that Teilhard posits
the law of complexity-consciousness as his basic postulate and that his whole
system stands or falls depending upon the validity of this principle. But then
he tells us that the "postulate he offers us is unverifiable. The proofs he
tries to give of it are themselves only baseless assertions. . . . It seems
that critics, whether sympathetic or hostile, will agree here to refuse to
follow Pere Teilhard in his audacious conjecture. His 'extrapolation', under
the name of 'panspsychism', will be dumped at his door. It comes neither from
science nor from philosophy nor theology, but simply, one might say, from a
poetic imagination." 32 Immediately upon this castigation follows his realiza-
tion that Teilhard's whole system depends upon his postulate which states that
"a consciousness is the more complete the more its counterpart is a richer and


32 Ibid., 61.
better organized material edifice."33 Than he proceeds in his analysis of the book without taking into account the fact that he either must accept this postulate or reject Teilhard's whole synthesis. He does neither. He states that the postulate is absurd and then goes on not only to accept but to praise the rest of the book. A queer sort of praise.

In his criticism of the notion of the critical threshold, Cortes examines the different thresholds that Teilhard posits throughout his work, gives examples, cites passages, and comes to the conclusion that "here again, in our view Teilhard has not explained anything; he is 'postizing'."34 It is difficult to discern here any basic appreciation of Teilhard's aim; or perhaps it could be that the type of explanation that Teilhard is giving simply does not explain for Cortes. But, even lacking an acceptable explanation, he continues his exposition and gives us his interpretation of consciousness: "If you call consciousness C, then thought must be called C². Animals possess C; only man is characterized by C². And reflection enables man to say 'I'. This is a veritable revolution."35 In fact, is not this "veritable revolution" the inception of another critical threshold? The use of C and C² is a symbolic representation of Teilhard's assertion that animals know, but they do not know that they know. It is only man who knows that he knows. It may be stated here that the primary analogate of consciousness is man for the very reason that it is only he who knows that he knows; it is only he who has an internal awareness of himself.

33 Ibid.
34 Ibid., 63.
35 Ibid., 65.
as an agent. An animal is indeed an agent, an agent who possesses a certain type of knowledge, but the animal is not aware of this and hence acts for an end not because he directs himself but because he is directed. It is only man among all phenomenal beings who directs himself; and this self-direction is possible because of the degree of consciousness in which he participates. An explanation of this type seems to be more than mere 'postizing'.

Near the end of his criticism Corte tells us that "Teilhard was addressing chiefly modern Man, and more especially those he mixed with all his life, the scientists, seekers, specialists in Palaeontology and Prehistory. . . . he only wanted to lead them to the porch of the Temple. So we must not ask of him something which he did not intend to do."36 Here it appears that Corte reached a realization that Teilhard was only trying to prepare the minds of his audience to reach for a higher viewpoint. As a man of vision, he realized that men learn themselves or they do not learn at all. It would do no good for him to present a well-formulated doctrine (if, in fact, he could have done this) to his readers. Rather he had to present reality in ascending levels of intelligibility, until at last the whole of reality would be rendered potentially if not actually intelligible to the sympathetic and intelligent reader.

Christian d'Armagnac, S.J.

Father d'Armagnac reminds us that Teilhard looks at the stuff of the universe from two points of view, the without and the within. The without is the quantitative aspect of a being, while the within "represents the degree of centrality and of unified complexity, which in fact corresponds in a material

36 Ibid., 78.
being to its degree of evolving toward life and in a living being to its degree of evolving toward the plenitude of consciousness.\(^{37}\) Following immediately upon this statement, Father d'Armagnan remarks in a footnote that these notions resemble the complementary notions of matter and form in Aristotelian philosophy.\(^{38}\) He would have us see a similarity between matter and the without and between form and the within.

Speaking of the dualism that has arisen in philosophical thought due to the dichotomy that has been made between matter and spirit, Bernard Towers makes the same point when he says that "Teilhard shows the falsity of this supposed antithesis precisely by showing how interdependent, inextricably co-mingled are these two aspects, these two faces, of the created universe. The 'without' and the 'within' are for him two aspects, equally real, of everything that is. It is, I think, matter and form again in modern dress, but with this difference, that everything is seen in terms of duration and hence of evolutionary change."\(^{39}\) The implication asserted here is that the notions of matter and form as envisioned by Aristotle and as used by St. Thomas and his followers were static and that in fact they did not provide adequate terminology to explain a universe that is seen through the eyes of the modern evolutionary hypothesis as dynamic. And, granted that there is a resemblance here to Aristotelian matter and form, still it would seem that Teilhard's synthesis includes

\(^{37}\) d'Armagnan, p. 11.

\(^{38}\) Ibid.

\(^{39}\) Ibid., 124.
all four causes. Since Aristotle was closely connected to biological phenomenon as he attempted to give explanations involving the notions of matter and form, it may be that his use of these terms is closer to Teilhard's explanation. Still, the scholastic use of matter and form seems to be so far divorced from modern science that in their traditional meaning they would cease to have meaning if applied in the context of recent scientific discoveries. Perhaps a reinterpretation of matter and form could be envisaged if one would follow the lead of Teilhard who is dealing with the world as it is known by modern science and not by an outmoded Aristotelianism.

Father d’Armagnac begins his discussion of consciousness by stating the principle of the unity of the stuff of the universe which has already been cited: "what clearly manifests itself at any given level of the universe must exist, at least to an infinitesimal degree, in all the other strata of the universe. Following this principle, Teilhard attributes consciousness to all the beings in the universe since this note is quite apparent in man and other higher animals. Father d’Armagnac at once observes that consciousness is applied primarily to man and that it ceases to have full implication even on the animal level. In the case of the animal, consciousness could only be applied on the experiential level and would therefore not partake in the fullness of man’s consciousness. Since consciousness is viewed by Father d’Armagnac as being used almost equivocally when applied to animals, it is easy to see that he would not be too happy about its application to beings inferior to

41 d’Armagnac, pp. 22-23.
those in the animal kingdom. In fact, he would see in such an application a loss of contact with experience.

However, he notes that Teilhard pointed out early in the Phenomenon of Man that "here, and throughout this book, the term 'consciousness' is taken in its widest sense to indicate every kind of psychicism, from the most rudimentary forms of interior perception imaginable to the human phenomenon of reflective thought" (Pp., 97). This attribution is viewed with distrust. But we are told that "to justify this extrapolation Teilhard appeals to induction; it can be said that from animal to man there can be stated a progression of consciousness proportionate to the growth of centric-complexity, which is measured by cerebralisation. Hence it is legitimate through induction to generalize the relation of centric-complexity-consciousness." 42 Father d'Armagnac views this line of thought as reasonable; it is only the further predication of consciousness to inferior beings that causes him difficulty. He would rather see a development of the immanence of being which would be a more general category than that of consciousness. It remains for us to see what consciousness means when it is referred to beings below the animal level.

In seeking to explain the major philosophical implications of extending consciousness to all levels of being, Father d'Armagnac tells us that "Teilhard has built upon two fundamental principles ... the unity of the stuff of the universe and a principle of finality which consists in understanding every genesis in the light of its full development. These two principles establish the law of cosmic recurrence: there is a similarity between the process of

42 Ibid., 24.
apparition and the nature of different degrees of being—in the words of traditional philosophy; or the different levels of matter progressively become more vital—in Teilhardian terminology. 43 Hence the dynamism of evolution is seen by Teilhard to be driven on by the single force of consciousness which is always seeking to construct itself into organisms which are more and more capable of developing in an ascending line toward higher degrees of being.

If consciousness is to be taken in a univocal sense—that is, in the meaning which pertains only to men—Father d'Armagnac sees the attribution of consciousness to all earthly beings as a pure extrapolation which has no basis in science. If consciousness were being used in this univocal sense, he would be correct; it is not. As has been pointed out, consciousness is attributed analogously to beings on the different levels of the evolutionary process. But, says Father d'Armagnac, since this use of consciousness has no basis in science, it must have its foundation in philosophy. In fact, he says that Teilhard is begging the question when he posits the unity of the stuff of the universe and when he says that the law of complexity-consciousness is the law governing this unity. 44 We have already seen that Abbe Cognet made the same criticism. 45 Fathers Journet 46 and Brunner 47 do the same.

43 Ibid., 38.
44 Ibid.
45 Cognet, pp. 73-74.
Again we must remind ourselves that Teilhard is leaving the task of grounding principles of unity philosophically to the metaphysician. His purpose is to show the unity that is actually seen by the alert scientist. There is unity found in the total complexes of data; there is an intelligibility which when explicited and further defined reveals that as the beings observed by science travel through time they have tended to become more complex and that this greater complexity has brought in its wake more unified centers whose totalities can be given higher rank than those which have preceded them. Since each center both holds its own place in the evolutive process and tends toward greater complexity and thus greater centriety, consciousness may be predicated of each of these centers since they exhibit characteristics of finality. All centers, including man, either are directed or to some extent direct themselves. In predicating consciousness or a psychic aspect to all units in the universe, Teilhard is introducing finality or direction into the scientific viewpoint. He is explicating what is implicit in all scientific explanation. Still, he is explicating this principle in close connection with the data to be understood and in no way wishes to press it from the particular by a method of separation; this is properly the task of the metaphysician.

As was mentioned above, Father d'Armagnac would like to replace Teilhard's use of consciousness with what in his opinion is a more universal notion—the degree of immanence of beings. Actually it seems that degrees of consciousness could very well be explained by referring to a deepening of the degrees of immanence of being. But what intelligible meaning would this latter notion convey to the modern scientist? Practically none. This, it seems, would be a valid metaphysical explanation, but Teilhard is not seeking an explanation in
metaphysical terminology. And, as a matter of fact, Father d'Armagnac does not see that in regard to proportionate being consciousness would have just as great an extension as immanence of being.

In hylomorphic terminology the notion of consciousness as used by Teilhard might with the proper qualifications be replaced by the notion of form in regard to material beings in general and by soul in the Aristotelian sense for living beings. For Father d'Armagnac then the "progression of the auto-immanence of beings is not consciousness itself, nor the progression of consciousness. But it prepares the cosmological conditions of consciousness. Levels are thus better distinguished, and the radical novelty of consciousness in its relationship to matter appears more clearly." It is his privilege to employ consciousness in another office, but this is not the meaning Teilhard intended. Undoubtedly he was influenced by the ancient matter-form cosmology since this subject was part of his philosophical background, but it is just as clear that he wished to break away from the old Aristotelian terminology and begin anew in the context of modern scientific development. Hence, he uses consciousness and gives it a new meaning, a meaning that does not limit itself to men and to animals but rather extends to every proportionate being. And this new use of consciousness conveys the notions of finality and development.

This use of consciousness raises questions that are not at all new to the scholastic but rather ones which have been neglected by a world nurtured on the scientific process. Where is the world going? Where did it come from? What do the answers to these questions have to do with us as individuals? Without a

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48 d'Armagnac, p. 40.
doubt Teilhard was aware that not all would answer these questions in the same manner as he would, but at least they would be asked. For example, in referring to God as the Omega Point, it is obvious that he also wished God to be thought of when the Alpha or the beginning was mentioned. But Julian Huxley for one missed this point by placing the entire process within a materialistic context. "Pure Teilhard, extrapolating from the past into the future, envisaged the process of human convergence as tending to a final state, which he calls 'point Omega,' as opposed to the Alpha of elementary material particles and their energies. If I understand him aright..." Huxley missed the point, but at least he was asking some of the right questions; this is no setback.

The Teilhardian view of the world may jolt the sensibilities of those who seek to explain the world with the terminology of Aristotelian science, but it may also jolt those who engage in the science of today, since the viewpoint taken by Teilhard is presented in terms intelligible to them and which could very well cause them to seek higher explanations.

Paul Chauvard

Paul Chauvard is a doctor, a neurophysiologist who examines Teilhard's work from his own peculiar point of view. He applies Teilhard's doctrine to his own experimental field of research as he seeks for understanding. For him Teilhard's view is one that must be applied by specialists in different fields if its full ramifications are to be brought to light. Thus notions such as the within of things or consciousness are viewed under the aspect of biological

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evolution by Teilhard, but this viewpoint does not exhaust their intelligibility. It is the task of other specialists to show that notions such as these are modes of explanation which answer questions in other fields of knowledge.  

In line with this we are told that Teilhard has made it necessary that scientists henceforth consider the within of things in their calculations, since the law of complexity-consciousness falls under the observation of the scientist and must be explained by him in some way. For "in the course of time more and more complex beings have appeared, not in that they are possessors of more and more complicated mechanisms, but in that they have a richer and richer organization, in that they are centered more and more, that is to say unified and integrated."  

According to this explanation consciousness would be attributed to beings in so far as they achieved greater unity and integrity, and different levels of consciousness could be distinguished by the steps in the progress of these beings toward greater and greater centeredness. This would act as a yardstick since it would be tantamount to saying that the observable path of evolution has led along a path toward greater unity. The old problem of the one and the many appears again. Progress is observed to be a drive away from dispersion and multitude toward unity.  

Looking at evolution from a biological point of view, one can see that there is a continuity exhibited by different beings as they approach greater unity, but there is also discontinuity. The atom is not the molecule, nor the molecule the cell. Between them lies a gap which must be crossed and has, in

51. Ibid., 61.
fact, been crossed. This knowledge again comes from the knowledge of the scientist. And knowing that evolution reveals discontinuity in continuity, he will use different terms analogously. He does not need the metaphysician to tell him that he can do this, although the metaphysician may very well be needed to explicate the reasons why such terminology is appropriate.52

Thus the attribution of a psychical face to every unit of matter would signify the aspect of its interior integration. And "every being has a degree of consciousness which can be known by the degree of its integration."53 This is not panpsychism but rather an ordering according to scientific criteria which would place the more complex above the less complex.54 From this consideration Doctor Chaushard concludes that "consciousness ought not to be taken only in a straight philosophical sense. It is a property of life and the progress of consciousness, which reaches its term at human reflection. . . . It will be the task of the psychologist and the philosopher to determine whether there is a metaphysical difference, a formal discontinuity between the animal, whose consciousness is only an organic integration, and man, in whom that organic integration will be the incarnation of a true transcendence."55 The philosopher finds his experience structured by the findings of science; and, if his philosophy is to advance, he must keep abreast of progress in science.

52Ibid., 70-71.
53Ibid., 93.
54Ibid., 93-94.
55Ibid., 96.
Michael Stock, O.P.

One of the objections which Father Stock raises in regard to Teilhard's doctrine deals with the philosophical explanation which is adopted to account for new origins in the course of evolution. His consideration of consciousness falls within the scope of this objection.

If one holds that there are essentially different species of beings, which Teilhard certainly holds, then their development one from the other raises the question: what causes the new characteristic that was not present there before. "Either something has come from nothing, or some agent either within or outside the natural order has interjected the force of his causality to produce the new. Now, Fr. de Chardin does accept God truly, transcendent and omnipotent, but he does not (at least not always) wish to appeal to divine intervention to account for the origin of essentially new types, nor does he fall into the error of allowing something from nothing. His solution is to have all things in the universe existing from the beginning, but latently, hiddenly, too tenaciously to be effective, until the complexification of matter should be sufficient to support them in full flower." In this fashion consciousness would exist in all matter. Whether or not Teilhard would say that it would be too tenacious in a lower level of complexification to be effective can be questioned. That it would be too feeble to be immediately observed, yes. That it would be too feeble to carry on the work of evolution, no; Teilhard would not admit this.

Of course, the whole question depends on one's use of efficient causality. If a proven evolution disagrees with the maxim that nothing can give what it

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does not have, it could be that the maxim is not entirely true. This would imply that an explanation using this dictum would be inadequate.

Following this mistake in his interpretation of Teilhard's presentation, Father Stock asserts that the discontinuities or critical stages of evolution can never be demonstrated if Teilhard's doctrine is accepted. In fact, according to Father Stock, Teilhard would have to deny the universal applicability of the principles of act and potency to the realm of evolving nature. According to this line of thought, there would be only "a virtual pre-containment in the primordial universe of all the varieties of characteristics which have later been evidenced."

This seems to miss the point. It is the intelligibility of direction that Teilhard is affirming when he states the presence of consciousness in every material being. There are indeed discontinuities or critical stages, and these can be observed by the scientist and judged to be such by the metaphysician.

Peter D. Fehlner, O.F.M.

Father Fehlner's main objection to Teilhard's position has to do with the method used in The Phenomenon of Man. Together with the revolutionary terminology found in this work, Teilhard's ideas seem to Father Fehlner to be woven in an ambiguity that is practically insuperable. This criticism of Teilhard's phenomenology which states that subjects such as God, evil, Christ, and faith cannot be considered merely from the standpoint of phenomenology would be correct if Teilhard meant the phenomenological point of view to end with the data of scientific inquiry. But this is not what he means.

57 Ibid., 300.
It is here perhaps that a novel use of ordinary words does obscure his meaning. In the opening paragraph of his book Teilhard tells us: "If this book is to be properly understood, it must not be read as a work on metaphysics, still less as a sort of theological essay, but purely and simply as a scientific treatise. The title itself indicates that. This book deals with man solely as a phenomenon; but it also deals with the whole phenomenon of man" (32, 29).

If the book is to deal with the whole phenomenon of man and not with just a very specified aspect, then the term "scientific treatise" cannot have the same meaning that would normally be expected. Is this not precisely one of the new insights that Teilhard offers us in this work? If the knowledge of science is to be complete, it must be complemented by the whole vision of man. It is, in fact, with total vision that Teilhard approaches his problem. He sees man on many levels, that of science, metaphysics, and faith. His seeing is actually the composite and complex understanding that has found its sources in many levels of knowing. It must therefore be admitted that there is ambiguity in Teilhard's use of phenomenology, but it does not seem to be an insurmountable barrier.

This phenomenological method which has been referred to by Teilhard as hyperphysics is viewed by Father Fehlner as unfit for any useful thinking about man and his destiny. Thus he tells us:

When Fr. Teilhard attempts to introduce, for example, finality into the total cosmic phenomenon on the basis of phenomenology alone, he is overreaching his science. There is finality in the world; phenomena do have a direction. But to understand this direction of the world to its last end, one must introduce the notion of finality established by metaphysics. Highly to consider the direction of man toward his supernatural end, one must introduce the data of revelation and concepts of theology. It is impossible to treat these matters in a "hyperphysics" which prescinds...
from the norms and judgments of theology and metaphysics. Such a procedure can lead only to confusion and error, where confusion and error are fatal.58

Father Fehlner does not see that he has very neatly summarized the purpose of Teilhard's work when he says that "to understand this direction of the world to its last end, one must introduce the notion of finality established by metaphysics" and "rightly to consider the direction of man toward his supernatural end, one must introduce the data of revelation and concepts of theology." How true this is, and it is precisely what Teilhard is trying to show. The scientist who works on the hypothesis that empiricism is the only valid field of verification cannot possibly take into account all the data he has at hand and expect to find a total explanation. Even matter, to be totally intelligible, must be viewed from a higher viewpoint than that of science. It is to these higher viewpoints that Teilhard is trying to lead a shortsighted world. Thus, far from disregarding the norms of philosophy and theology, Teilhard is attempting to demonstrate their need and to show that neither man nor the world of which he is a part can be rendered totally intelligible without them.

At the end of this article Father Fehlner includes several criticisms which he formulates against Teilhard's position. In the first one he objects to Teilhard's describing animals as thinking: "We think it most objectionable to describe animals as thinking; to speak of the biological properties of thought; to distinguish the thought of animals from that of humans merely by the criterion of reflection, as Fr. Teilhard does."59 Since Father Fehlner does not

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59 Ibid., 714.
cite specific passages from *The Phenomenon of Man*, we cannot examine the passages which he has in mind. But it would seem that he considers Teilhard's attribution of consciousness to the animal kingdom the same as attributing thought to it. As we have already shown, this is not the case. Teilhard does indeed distinguish the consciousness of man from that of the animal by the fact that man can reflect, but this reflection is something different in kind from the consciousness which the animal possesses. As has been pointed out repeatedly, consciousness is not a univocal concept. Teilhard uses the term to point out the finality which is inherent in every being and which in every creature but man is followed out without the creature in question being aware of it. It is only man who can reflect upon himself and know that he is governed by a law of finality; moreover, it is only he who can freely choose to follow his destiny.

Father Feilner also finds fault with Teilhard's use of Julian Huxley's expression that man is "nothing else than evolution become conscious of itself." He says that "it implies that thought is nothing else but the perception of the flux of becoming, and hence relativistic." Is it not true that what becomes is, and that which is is being—which is convertible with truth? And, what is, is not relative. What is true today will not become falsehood tomorrow, even though it may be that an insight which is true at one time does not give the complete truth and at a future time may demand a new insight from a higher viewpoint. That Caesar crossed the Rubicon is certainly true; but it was not true the day before that famous crossing. That man is a rational animal is

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certainly true. That man exists is also true. That man has always existed does not seem to be verified in the facts given us by science. This is no relativism; it is rather a deeper and more profound understanding of what being, and therefore truth, is.

The next objection considers Teilhard’s use of oneness in everything that he sees: "the 'physical oneness of everything in change'; life preceded by pre-life and consciousness by pre-consciousness; spiritual perfection and material synthesis as 'two aspects or connected parts of one and the same phenomenon'; . . . all these expressions are not far removed from the language of monism, either material or spiritual." We have become used to making distinctions between matter and form, so accustomed in fact that we forget that being is also convertible with unity. In the existing being there is no Cartesian duality which separates the material from the spiritual. It is the composite man which exists, and this means that matter and form in man are not principia quae but principia quibus. One does not exist without the other, even though the form of man as a spiritual principle can exist without matter after the dissolution of the composite at the moment of death. It is necessary to refocus our vision so that we may perceive reality as it is, and it is not a dichotomy. What Father Fehlner sees as "the ambiguity and impression of a radical pantheistic tendency" seems rather to be an attempt to view created reality as it is—composite, but unified.

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61 Ibid., 715.
62 Ibid.
The problem of finality is also treated. Father Fehlner says:

Finality is not 'groping chance,' or 'trying out everything' as the author says. Finality and direction play a very important part in the synthesis he proposes, but we do not think science or phenomenology can discover at this level the purpose which is operative in existing things that science studies, as it is also operative in man. As a matter of fact, we must say that Fr. Teilhard has not found the final cause or direction in becoming, if the direction which cosmic evolution follows is reduced to 'groping chance.' This is no foundation on which to disprove the assertions of atheists that the world can be explained without providence. Finality supposes pre-determination to one goal rather than another. 'Groping chance' is not this. Had Teilhard introduced a concept of finality established metaphysically, he could very well have discussed the direction which undoubtedly is to be found in this world. But then he would not have been writing a pure 'hyperphysics' that prepares the ground for generalizations of metaphysics and provides the latter the necessary liberty to exist. 63

It is very true that finality is not 'groping chance,' but this is what appears at first to the observer of millions of atoms or molecules or cells in the process of development. It is not until a higher viewpoint is reached that a deeper level of intelligibility is possible. Only then does the finality which is operative in these millions of beings become known by man. On a lower level there appears to be no finality, but once this level is superseded man's mind reduces what was potentially intelligible to act and observes a world ruled by laws of finality. On a lower level there does not appear to be a pre-determination to one goal rather than another, but this is not the ultimate level of explanation.

To solve this difficulty, which in reality turns out to be no difficulty at all, Father Fehlner suggests that Teilhard should have introduced a concept of finality which had already been established metaphysically and then discussed

63 Ibid., 716.
the direction which is to be found in the world. Where does this metaphysical principle of finality come from? Surely it isn't produced out of a vacuous intellect. Was it not finally understood by man after he had gone through a process similar to that which Teilhard presents in The Phenomenon of Man, even though in a different context? The principle of finality concerns reality and must therefore have been understood in conjunction with an examination of experiential data. Without such an examination man would know no such principle.

John J. Russell, S.J.

In judging the world-view which Teilhard has portrayed, Father Russell says that the first and perhaps most important contribution is the elimination of the sharp dualism which Descartes had introduced between matter and consciousness. He tells us:

Life and sensation are not supra-physical entities mysteriously injected into matter from outside; there is no problem of reconciling them with the material nature of things. As we follow the pattern of development from atoms to the highest animals and (with certain qualifications) to man we see, on the one hand, a steady increase in complexity and 'centredness' in the physical structure of things, and on the other hand an increase in the level of consciousness, in richness of experience, in capacity for purposeful action. However, these are not two distinct and independent trends. Matter and consciousness are not two separate realms of being, only marching together by accident; they represent one and the same pattern of the world as seen respectively from the outside . . . and from the inside.64

Thus consciousness can be seen to have different manifestations on different levels. Sensation is found only after a great deal of development; it was not possible in a less complexified being. When man is reached, consciousness takes on a new meaning just as it did after every critical leap in the process

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of evolution; in the case of man consciousness refers specifically to "the internal and proper experience of oneself and one's acts. This experience is a certain previous and unformulated awareness which is presupposed by intellectual inquiry and is completed through it." And so, man is not only a totality which includes all lower totalities in his makeup, but also an essentially new type of consciousness has been reached.

Father Russell's comments on Teilhard's postulation of the principle of unity in the world are interesting since they emphasize the analogous use of this principle in its application to particular entities.

... the most outstanding characteristic of Teilhard's scheme ... is its stress upon the unity of the world. It is one and the same pattern and structure running through the whole. The tendency of a stone to fall to the earth is continuous with the desire of an animal for its mate; the tendency of atoms to combine into molecules belongs to the same pattern of history as the tendency of one animal type to evolve into another. This does not mean that stones have desires in the same way that animals do; the 'conation' is incomparably more rudimentary in the one case than in the other, but the two are not divided by any absolute gulf. Nor does it mean that the process of complexification in chemical reactions is identical with the process of biological evolution; it means that both have their place in a pattern of history which reveals a common purpose and direction from first to last.

The same reasoning holds true for the notion of consciousness. The different levels of consciousness are not the same, but neither are they separated by an absolute gulf. Rather the various levels of complexity reveal various levels of consciousness which indicate an aspect of finality which is not measurable by scientific instruments but which is observable by scientists.

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66 Russell, p. 283.
As we have seen, Teilhard has been criticized by many for proceeding in this fashion. It is objected that it is not at all certain that natural selection could produce beings successively more and more complex unless there were a structure in matter that had already been determined previously. To this Father Russell says that "Teilhard's reply would be rather that objections of this type are approaching the problem the wrong way round. In discussing the structure of the universe we must begin with its phenomenology; we must first establish the general pattern as manifested to us in experience and then build our philosophy on that. We must not begin with explanations of why things happened as they did, and then deduce the pattern of the world from this." Of course, Teilhard tells us that there is an ultimate explanation of the universe, but that it is not reached until one includes the point Omega or God in the explanation. In other words, for there to be intelligibility, there must be finality in the universe; and for there to be finality in the universe, there must be a prime mover up ahead who is outside the universe itself. Omega is such a being. And as for the intelligibility that Teilhard finds in the universe, the notion of consciousness plays an important role since Omega can ordain that a variety of natural causes should work together to produce a single end; and the specific task allotted to each one is signified by the degree of consciousness which it has attained.

Father Russell considers the problem which the appearance of man upon the scene of evolution causes. How can man be the term of the process of evolution? Granted that all matter has a dual aspect—the within and the without—two

67 Ibid., 284.
aspects of one reality; still, the within of man is spiritual insofar as it is supra-material and independent of matter in some of its operations. How can the spiritual be the natural term of the material? Throughout it has been maintained that Teilhard held that consciousness is predicated of different levels of the evolutionary process analogously. But, if this is so—and it must be so—what happens to the unity, the continuity of the evolutionary process? How then can man be the natural result of evolution?

To answer this question, a distinction must be made. "Man is the end and purpose of evolution in the sense that the whole process is orientated to that end; it constitutes a pattern which would be empty and meaningless unless it culminated in man. The causal connections between the antecedent biological processes and the formation of the first man is analogous to, and may be as close as, the connection between the act of generation and the formation of a human child. In the sense in which the child is a product of the act of generation man is a product of evolution." To understand this distinction, it is necessary to consider the analogous problem of the birth of a human child. Is the child the natural result of the act of generation between a man and a woman? In one sense the answer is no, while in another sense the answer is yes. The negative results from the fact that the parents are not an adequate efficient cause of the child since they cannot produce the soul by their own power; God's intervention is needed for this. On the other hand, the question can be answered affirmatively. "The generation of a child is the natural result of the generative act, towards which it is of its nature directed; without

which, or without the possibility of which, the act would cease to have its meaning. In the order of final causality the child is the natural result of an act of generation, but not in the order of efficient causality." Thus the parents are not the principle efficient cause of the child, although they may be considered instrumental causes, which cause is a species of efficient causality.

Following the same reasoning, we can see that man is the final outcome of the process of evolution and that the natural causes which helped to prepare for his coming were instrumental causes while God was the principle efficient cause. The development of the entire universe has taken place in the same manner. God is the primary efficient cause of the universe. Being outside space-time he can as it were draw the universe to himself from ahead—and this is the point of view which Teilhard adopts, since Teilhard’s pattern is “primarily a unity of orientation or tendency, a single co-ordinated movement towards a goal.” Thus we can see that God directs the completion of the universe, and we can understand that material beings are instrumental causes in this same process. The glory of man is found in the fact that he is a creature that is not totally directed, but one who also has the power to direct himself and to some extent direct future evolution.

69 Ibid., 4.
70 Ibid., 5.
CHAPTER V

THE MEANING OF CONSCIOUSNESS

In the preceding pages we have seen Teilhard's vision of reality unfold before us. Teilhard's basic stance faces a world in the process of becoming. He wishes his readers to see that being is dynamic, going toward a goal. He is not attempting to give a total explanation of the universe or of man. Rather he is setting up the groundwork for such an explanation by presenting the unified content with which all other sciences must deal. In one panoramic view he is presenting the total content which constitutes the matter for disciplines such as science, philosophy, and theology. It is for others to explicate the structure inherent in the content.

In a way Teilhard does more than just present content; he also presents it in such a way so as to prepare the inquiring mind to look for higher viewpoints which can explain data whose intelligibility has not been exhausted on a lower level. For this reason, he takes great pains to show that direction is observable in the universe—at all levels. It is here that evolution provides the framework for his thought, since evolution enables one to look at things as they are, as dynamic centers of being which are constantly straining toward development.

Father D'Arcy has told us that Teilhard had to presuppose some form of consciousness latent even in the simplest elements of nature and that this "assumption takes all meaning out of consciousness, for it has now to be applied to
what is precisely its opposite."1 On the contrary, it has been shown that consciousness is predicated meaningfully by Teilhard. The term is not univocal but rather analogical since it expresses notions both of unity and of disunity. Consciousness is applied to different beings to show that they have direction, that they are moving toward a term. The manner in which they go toward this term differentiates them, not only individually but also specifically or essentially. The basis for this statement is grounded in the findings of sciences which consider as their subject matter beings of essentially different intelligibilities. For not only is direction connected with the notion of consciousness but also with that of complexity or organization. The fact that there exist beings which have different structures enables them to be understood in a way which is unified but analogously different.

Ludwig von Bertalanffy treats of different levels of organization and processes of life in his book, Problems of Life. It is upon scientific observation such as these that the notion of analogy is grounded and which give the foundation for a meaningful predication of consciousness to each level of being thus observed. Thus we are told that "we find in nature a tremendous architecture, in which subordinate systems are united at successive levels into ever higher and larger systems. Chemical and colloidal structures are integrated into cell structures and cells, cells of the same kind to tissues, different tissues to organs and systems of organs, these to multicellular organisms, and the last

finally to supra-individual units of life."²

Going up from the basic units of matter such as electrons, protons, and neutrons, we find atoms which are distributed in their various intelligibilities along the periodic table. These atoms join to form molecules which belong partly to inorganic nature and partly to the organic. And among the bio-elements, we find that carbon holds a special place, since "it appears that life is bound to the ability of carbon to form the most diverse, largest, and most complicated molecules, an ability in which it surpasses all other chemical elements."³ The structure or complexity of the matter in question determines the level that it holds in the total evolutionary process. The smallest atomic particle can only be directed, but the power of the carbon compound is already being carried, and in some small way carrying itself, toward life which is first found in the cell. There is a hierarchy among molecules; some play a more pronounced role in the surge toward life. "Among organic molecules, the so-called macromolecules, including, for example, the proteins, as the most important building materials of protoplasm, and the cellulose of the cell wall of plants, already show specific structural laws that surpass those of inorganic molecules."⁴ All matter is being drawn forward by Omega to itself. Only some of it will become informed by a spiritual soul and be partially able to direct itself on a higher level. Some matter stops short of man, and in other cases it takes a different direction and cuts itself off from the possibility of becoming directly

³Ibid., 24.
⁴Ibid.
spiritualized. Still the process continues.

Beyond the macromolecular compounds we find an enigmatic border-land between the inanimate and the living. These are the viruses, genes, and chromosomes. These "elementary biological units show growth and co-variant reduplication, but the complete complex of synthetic action, namely, of building up organic molecules de novo, remains a privilege of the cell as a whole." And it is with the cell that we find the fundamental unit of life. As such, it is the most important structural element in all organisms, plants, and animals. This is also an empirical fact and not just a theory.

This brings us to the point of this short enumeration. All these different beings which have intelligibilities on different levels have unity of direction. Yet all tend toward their goal in various manners, some in a like fashion, others in a distinctly different one. Omega draws them all to itself through evolution. Man is a part of evolution, but, because of the fact that he knows that he knows, his organization or structure is on a transcendent level even though he still exists within the same general framework of development. Consciousness designates that quality of a material being by which it can attain its end and by which it does its part in the whole of evolution. The development from electron to man involves a move from a capacity to be directed to a capacity to be self-directed. Between the different levels of organization referred to above there is a leap, there is progress. Life and non-life are two separate intelligibilities, and because of this they are only analogously the same.

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5Ibid., 32.
And finally "in man there occurs the transition from the intelligible to the intelligent." Still we have not finished with this process; we are still evolving. Let us again refer to Teilhard's thoughts on seeing:

We might say that the whole of life lies in that verb—if not in end, at least in essence. Fuller being is closer union; such is the kernel and conclusion of this book. But let us emphasise the point: union can only increase through an increase in consciousness, that is to say in vision. And that, doubtless, is why the history of the living world can be summarised as the elaboration of ever more perfect eyes within a cosmos in which there is always something more to be seen. After all, do we not judge the perfection of an animal, or the supremacy of a thinking being, by the penetration and synthetic power of their gaze? To try to see more and better is not a matter of whim or curiosity of self-indulgence. To see or to perish is the very condition laid upon everything that makes up the universe, by reason of the mysterious gift of existence. And this, in superior measure, is man's condition. (P 31).

Since the advent of man the universe is no longer attracted and pulled toward Omega of necessity. Henceforward man is able to know the direction he must follow, but he need not proceed along this path. He has the power to frustrate himself, and in frustrating himself, he hinders the forward progress of evolution. Consciousness is for the sake of achieving an end. This is most true of the consciousness of man.

Man has an internal awareness of himself and his acts on the levels of experience, understanding, judgment, and volition. Man experiences to understand, understands to judge, and judges in order to will. He is a dynamic being spiraling upward toward Omega. He carries along with him the entire universe. He makes his own critical leaps by knowing and willing, and these leaps radiate, effecting the whole of matter. It is still a gradual ascent

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6Lemergan, Insight, p. 267.
toward a super-consciousness in union with Omega. And, as the new dawn breaks over the sky, the man who sees what he is about, who sees the significance of his own being, and who acts upon what he knows, will carry forward Omega's plan of drawing all things to Himself.
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APPROVAL SHEET

The thesis submitted by Richard J. Vorwerk, S.J.
has been read and approved by three members of the Department of Philosophy.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

May 15, 1962

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