

SOMETHING NEW IN THE MATTER OF LIFE: A NEW PHILOSOPHY

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We no longer doubt that everything in the world is energy; but there is a fundamental distinction between the energy of life and the energy of matter. These form two orders that are sharply distinguished by their own specific laws, neither of which can be reduced to terms of the other¹. The energy of the physical world condenses into matter, but it remains without organisation and without limits. The energy of life, on the contrary, condenses into well-defined organisations which are limited in their form and in their duration, the latter being death.

It was formerly thought that the energy of life proceeded from that of matter, but it cannot be so because life exhibits specific powers which are unknown in the world of inert matter, which cannot produce powers that it does not possess. On the contrary, it is the energy of life which makes use of material elements to form the definite organisations just mentioned. So much so that living matter can only sustain its organisation so long as life lasts. ¹

¹ M. Vernet, *La Vie et la Mort*, Flammarion Edit., 1952. P. 109-120, and in the same work: *L'énergie propre de la vie et l'énergie d'entretien*, p. 74 et seq.

We have said that life has specific powers. What are these powers? On the plane of bodily activity, they include the power of organisation and the power of regulation inseparable from it. There are also the powers of assimilation and locomotion with the co-ordination that they imply, and the power of reproduction of a form which is always identical. On the plane of the activity of mind, there are the powers of thought and the power of will.

But the powers thus manifested by the energy of life could not be exercised without a sensitivity which makes their exercise possible. This sensitivity is apparent from the very beginning of life and continues so long as life itself is present. All forms of vital activity depend upon it. It regulates the whole organism in such a manner that it is impossible to separate energy and sensitivity if life is to be understood.

To take an illustration, we can see that in order to make a given construction a definite plan is required and also the thought which conceives the plan. The realisation of the plan requires a direction and an appreciation, not only of the totality of the parts with their respective proportions, but of a certain order in the use of the materials out of which the construction is to be made. It is the same with the organisation of life. Life requires a direction and an appreciation which together constitute the fact that we have called *Organic Sensitivity*. ²

²M. Vernet, *La Sensibilité Organique*, Flammarion Edit., Paris 1949. One volume of 320 pages.

This intervenes at every moment in order to realise the pre-determined form of which the pattern of life consists. On the other hand, it must be emphasised that, in a manner opposite to what happens to inert matter, the living form has a definite limitation in space and time. Only a specific and determined organic sensitivity can bring about this limitation. Thus the

sensitivity is the essential regulative element which realises the necessary selection and also establishes an order in the successive disposition of each element by reference to the whole.

When looked at in this way, the organic sensitivity permits the potential organisation to become actual. In a certain way, it unites a power which is immaterial in its nature with a material exercise, that is, the realisation itself. In this way one can consider the organic sensitivity as the means whereby life is actualised. We might go further and identify sensitivity with life itself. It is only when we recognise the part played by sensitivity that we can understand that which in us is non-material, i.e. the powers, and also that which is material, i.e. the functioning of the organs. There should be no confusion between the powers of life and the properties of the matter which takes part in the organic functioning. ³

³ M. Vernet, *Le Sens de la Vie*, Grasset Edit., Paris 1960. P. 15 et seq.

If the organisation of life, in order to become actualised and possible, requires the mechanism of sensitivity, the biological functioning requires it even more. This functioning shows in fact that there are biological equilibria of a physico-chemical nature that are constantly maintained from birth to death and that are characteristic of each species. This permanent regulation, brought about by the organic sensitivity, is the necessary condition of establishing and maintaining all the equilibria required by the interplay of the rhythms and the functions of life. For example, the exercise of the power of assimilation shows it quite clearly. It is the sensitivity that selects from the food that which is necessary, and rejects the remainder. Thus life appears as a process of specific energy and sensitivity.

Every mode of sensitivity intervenes in the activity of life; both (lie general sensitivity and also the sensorial sensitivity which includes that of the tissues and also that of the organs. In order to combine all these different modes of sensitivity, we have brought them together under the general term of Organic Sensitivity. This consists in the totality of the sensitivity functioning of the entire living organism. This functioning permits the exercise of the powers. The reason why this exercise varies from organism to organism is that the conditions of its action are different. This organic sensitivity is endowed with a margin of adaptation and defence which we have called the "reactional margin", and it is this that enables it to ensure that the powers can be exercised. This reactional margin permits constant regulation in the presence of the changing conditions of the environment, and without this readjustment the biological equilibria would break down. It is within the limits of this margin that the temperature curve of the body oscillates about its position of normal equilibrium.

We have shown that the variations which are produced in the physiological limits of this reactional margin are not inherited, but when these reactions are excessive so as to become pathological, they are capable of passing to the descendants. Nevertheless, in conditions of natural crossing, this transmission is constantly being modified by the effects of this crossing. There is thus, contrary to the general belief, an inheritance of acquired characteristics, but this does not persist. ⁴ There is always a return after a few crossings to the specific type of the fundamental organisation. This return to the fundamental equilibrium of the species is to be observed in all phenomena of organic regulation, great and small.

⁴ M. Vemet, *Heredite*, Plon Edit., Paris 1949. One volume of 290 pages. P. 127-150 and 231.

This brings out one of the most important laws of life, namely, *the law of reversibility*.⁵ The constant return to equilibrium in normal biological functioning is the obvious proof of this law. Many observations demonstrate the reality of this power of reversibility possessed by life. We shall cite only a few of the most significant experiments. Morgan, Ritter and Congdon report: "If a worm (of the planarian order) is sectioned in several places, each segment regenerates; but, and this is what must be specially noted, the regeneration does not take the form of growth. A true 'interior reconstruction' takes place in each segment. The regulation of the development of the form is shown by the reforming, as new, of an organism identical with the whole worm." The same authors have been succeeded in bringing about the formation of a new planarian starting from one and a half planarians. They have been able, in this way, to observe how the eyes and the brain, which were already formed in the cephalic segment, underwent transformations. "*The eyes are reabsorbed and regenerated in the place where they should come in the new enlarged head and the brain transferred itself to the place required by the law of structural harmony of the planarian.*"

⁵ By the same author, *Le Sens de la Vie*, Grasset Edit., Paris 1960. One volume of 215 pages. P. 41-79.

The experiment of Bernard Bavink demonstrates similarly that cellular differentiation in the process of development changes according to the aim to be achieved. The example here is the crystalline lens of the triton. In order to understand the significance of this experiment, it must be recalled that the eye is formed, embryologically, from a part of the ocular vesicle that results from an indentation of the brain. This produces the retina, the sclerotic, the choroid and the iris; whereas the crystalline lens, the cornea and the vitreous humour are produced from the epidermic tissue. Now, the ablation of the crystalline lens of the triton is followed by its regeneration, not from the epidermic cells, but from the iris, the origin of which is totally different. G. Wolff has observed that in the triton "the crystalline lens of the eye is regenerated after extirpation in the following manner: some 24 to 48 hours after the operation, *the part of the eye which has remained intact* shows a real retrogression. The black pigment of the tissues that coat the optical cavity is actively destroyed by the leucocytes and brought back to a state of embryonic tissue. The iris forms the new crystalline lens by cellular proliferation⁶."

⁶ All these experiments are discussed in my book *La Vie et son Mystere* Grasset, Paris 1458. P. 29, 31, 34.

In similar fashion, we can observe in the phenomena of reproduction a cyclic return to dedifferentiation, at the level of the germ plasm, this being effected by the regularly renewed reduction in the number of chromosomes in the germ cell, followed by a constant return to the number normal for the species.

In inert matter, we never encounter reversibility similar to that which is shown by life; namely the maintenance by regulated assimilation and disassimilation of a stability in the conservation of biological form and function. This occurs in spite of the continual disturbances produced by exchanges of substances. All that can be observed in the phenomena of inert matter or in the universal processes of physical energy exchange, is increase or diminution of mass or energy, reduction or recombination of elements, but never a limited and regulated assimilation. It is, of course, true that an equilibrium of forces can be achieved; as is the case, for example, with forces of attraction and repulsion, but equilibrium is not the same thing as reversibility. The establishment of equilibrium is no more than a

balanced interaction. True reversibility is a deeply directed reconstitution of the elements concerned, which, in the case of a new and specific differentiation, involves return to non-differentiation.

The physicist Niels Bohr, recently deceased, recognised that this regulated stability of life points to a fundamental difference between the processes of life and those of inorganic matter.

It is this reactional margin which permits the creation of types, of races and varieties within the species; but it can never result in any radical transformation since there is always, after a few generations under natural conditions, a return to the fundamental specific type.

Furthermore, the reactional margin of the organic sensitivity not only enables the living organism to adapt itself to the changing conditions of its environment, but also to defend itself against attacks which threaten its existence.

This margin, which is observable on the plane of bodily life, is still more in evidence on the plane of mental life where it takes the form of the freedom of action that we enjoy. Because of this we are only partially determined, and the exercise of the power of thought and the power of will undoubtedly require this measure of freedom.

Without spending more time upon this fundamental notion, we would say that it enables us to recognise within the activity of life and in its essential unity, a triadic representation of the being: anima— mind—body ⁷. We believe that through this notion we arrive at a better understanding of life. In this conception, the anima stands for the *life principle* of energy and sensitivity. It is thus conceived as both *animus* and *anima* in that it carries in a potential state the powers that are actualised both in the life of the mind and in that of the body. It seems to us that we are bound to make a distinction between the intellectual activity in the strict sense, which we name mind, and the source that animates it, that is the soul of anima ⁸. By making this distinction, we shall also understand better the relationship between the mind, on the one hand, with the soul that animates it; and, on the other, with the body with which it is linked in so many ways. It is thanks to the unique functional mechanism that is brought into existence by the organic sensitivity that life is able to manifest as a unity. The triadic representation of its functioning does not, in any way, break this unity down.

⁷ M. Vernet, *Le Problem de la Vie*, Plon Edit., Paris 1946. One volume of 280 pages. Preface by Louis Lavelle.

⁸ By the same author, *L'Ame et la Vie*, Flammarion Edit., Paris 1955. One volume of 270 pages. To understand what (anima) is in our system, one must not consider life from a purely materialistic point of view, as one does electricity for instance. There is no denying that the highly regulated organisation and functioning of life cannot be explained without a power to rule and direct them. Now, there can be no power without an original "potentiality", which is, by no means, of materialistic nature. This potentiality is "anima" itself. The word "energy" that we use, must not be given the usual meaning of the modern physicists. Scientists are unable to give us a material representation of the power of thought, or the power of will, for instance, which are the outcome of *spiritual energy*. Our studies dealing with the problems of "anima" give a more precise view of the matter.

The fact that the sensitive energy of life rules over an organisation and directs a mode of regulation determined in each species, implies finality, that is, activity directed towards an

aim or purpose. It is not merely a determination, but a predetermination, since the original molecule contains as potentiality all that will come out of it, in terms of the organisation and also of the functioning of life. Thus every species has a level of organisation that is characteristic of its nature beyond which it can never go.

From what has gone before, it follows that the hypothesis of an evolutionary and progressive transformation from one species to another is formally contradicted. Everything is predetermined in the organisation and functioning of life. It does not at all follow that we reject the fact of evolution, but solely the possibility of the transformation of species by the genetic transition from one to another. Evolution means process of development (evolvere) and not transformation. Thus we do not in any way acknowledge transformation. We are, on the other hand, firm believers in evolution, since we admit adaptive variations can occur in the course of the development, provided they are never taken as modifying the fundamental constitution of the species ⁹. In life all is movement, there is incessant variation, but along a definite line.

⁹ Charles Darwin himself was not convinced of this transformation intraspecies. In a letter we found in the British Museum A.DD.MS. 37725 f.6, dated 1861, i.e. after the second edition of the Origin of Species, he wrote:

“But I believe in Nat. Selection, *not because I can prove in any single case that it has changed one species into another*, but because it groups and explains well (*as it seems to me*) a host of facts in classification, embryology, morphology, rudimentary organs, geological succession and distribution.”

We are indebted to the kindness of Sir Ch. G. Darwin and to the Director of the British Museum for the possibility of using this reproduction. The italics are ours.

If this view is correct, what representation can we make of the origin and development of life, taking account of predetermination? Our view is as follows. By virtue of the determination manifested both by the laws of the physical universe and by those of the organisation of life, it can be admitted that the world was not “formed” in its material realisation but “conceived” by a Supreme Intelligence, an *Idee Directrice* as Claude Bernard would say, and conceived such as it was to be in its fundamental constitution. “To conceive” obviously does not signify “to construct in every detail”. The human species, as all living species, could have been conceived as pure virtualities. The actualisation of these virtualities being subject to particular conditions and left to evolve subject to determination only in its essential lines.

According to this representation, evolution would appear as the executive agent of the Creative Thought acting within the temporal order. Matter would thus be neither more nor less than the instrument and the support of living organisms. The successive appearance of the different species according to a scale or hierarchy would then be the consequence of the changing environmental conditions. These conditions would inevitably produce characteristic variations or races in the course of evolution, but the variations would be limited and restricted by the primary determination. If a Creative Thought has thus conceived the world and life according to a predetermined plan, *it follows that all the potentialities for development would exist together in a kind of latent state, ready to be actualised in time and space when the conditions just considered should arise*. We have introduced this notion of “latent life” (which must not be confused with a “slowing down of life”) because it seemed to us of capital

importance both for the explanation of the successive arising of species and also for all phenomena of apparent spontaneous generation **10**.

¹⁰ M. Vernet, *L'Evolution du Monde Vivant*, Plon Edit., Paris 1950. One volume of 300 pages.

Such a notion is not purely dialectic. It is based upon facts of observation that cannot be disputed and it suggests new ideas as regards the first possibilities of life, which, if the expression may be permitted, "was", without yet "existing". Let us add a personal remark which throws light upon this assertion. During a visit to Aven d'Orgnac, at a depth of 500 ft. below the surface where there is no vegetation at all (the walls being bare rock), the guide showed us patches of primitive vegetation standing out distinctly in the circle of light produced by the beam from a spotlight installed in the cave. To my great surprise, the guide announced with magnificent assurance: "Behold, Ladies and Gentlemen, the proof that it is light that creates life!" In reality, it was simply a matter of producing the *condition* for the development of life. Certainly, we cannot, with our present methods of investigation, demonstrate the germ or state of energy which initiates the life process: but everything leads us to affirm that this germ is present in a latent state ready to become actual when the conditions of light and heat are realised, but ready also to disappear when these* same conditions cease to be.

In the foresight of a Creator, the plan of development according to this representation, could very well allow for successive phases in the realisation of the development of species. The phases of embryonic differentiation starting from the initiating molecules that form the genes and leading to the development of the complete plant or animal, would seem to confirm this point of view.

Alternatively, it is no less admissible to suppose that the various species were formed directly and independently, than to assume that one single species preceded all the rest, for in any event a start had to be made in the one case as in the other. Moreover, the origin of the energy of the physical universe presents the same problem as that of the origin of the energy of living matter. It is necessary here also to postulate the intervention of a similar determining principle.

The conceptions just enunciated preclude the idea of chance that is invoked by the materialistic theory. It also removes the difficulties raised by the contrary idea of successive interventions of the Creator in this primary work. Would not the imperfections and deviations that we observe in the creation be in flagrant contradiction to the doctrine of Divine Omnipotence? According to our conception, on the contrary, (the variations, the anomalies and the setbacks that are to be observed in the course of evolution are not to be imputed to the Creator. They were made possible by the reactional margin of the organic sensitivity.

Thus, the creative Thought could have conceived, once and for all, a general, unique plan which could be realised by various evolutionary paths, thus giving rise to variations that would change nothing in the fundamental laws. We would say that the unique plan may comprise (the primary or original types of organic sensitivity, all different but all determined. Thus life does not invent itself in the course of evolution; it does no more than make itself explicit in time, following lines that are characteristic of each species.

From what we have said, it follows that the observation of the nature, the mechanism and the functioning of life leads to novel and general conclusions of a philosophical character concerning the origin, the development and the evolution of life. These conclusions are that life is unitary, autonomous and predetermined as to form and duration according to equilibria and functions constantly regulated by the organic sensitivity.

Apart from these general conclusions in the domain of biological philosophy, there are others of a more specialised character, some in the domain of pure biology and others in the field of morality.

The first are based upon a rigorous distinction that can be made experimentally between two modes of sensitivity: *the deep sensitivity of the vegetative life* which regulates the functions and the rhythms according to their essential and predetermined patterns and *the superficial or reactional sensitivity* that enables the living organism to adapt and defend itself when faced with the changing conditions of its environment **11**.

¹¹ M Vernet, *Le Probleme de la Vie*, Plon Edit., Paris 1947. P. 59 and following ones. On the same subject, *La Vie et la Mort*, Flamniarion Edit.. Paris 1959 P. 80 et seq

This distinction is justified by the fact that these two modes of sensitivity can be dissociated. General anaesthesia removes the reactional sensitivity whereas life continues to be regulated in its deeper functioning.

We have carried out, from 1943 onwards, a series of experiments on this particular point and they lead to biological conclusions of the greatest significance **12**. Thus we were able to inject into animals in the state of deep anaesthesia, doses of poison ten times greater than mortal without their suffering the slightest harm; whereas the control animals succumbed immediately. Anaesthesia which suspends the reactional sensitivity must be effected before the injection of the toxic substance and must be maintained long enough for assimilation to be completed and the poison to be eliminated.

¹² M. Vernet, *Equilibres et Desequilibres Biologiques*, Doin Edit., Paris 1954. One volume of 288 pages. (See "*Methodes therapeutiques*" P 232-276.)

A sleeping organism can similarly withstand without harm a high voltage electric current that would kill a similar organism in the waking state.

Struck by these observations, we set about to examine the *protection* that could be afforded by general anaesthesia against the harmful action of X-rays (cutaneous tissue and globular lesions) which action is attributable to an injurious reactional defence. When the reactional sensitivity is put to sleep these lesions are no longer produced and it is possible to exceed considerably, without harm, doses of radiation commonly considered mortal **13**.

¹³ At the very least up to a certain limit, which remains to be determined.

This possibility of administering, without danger, heavy doses of radiotherapy while at the same time making it more effective (in so far as its value is admitted for the treatment of cancer) led us to propose the use of general anaesthesia as a method of treatment to combat the cellular anarchy that is characteristic of cancer and its cause—whatever the latter may be. So long as a state of general anaesthesia is maintained, the reactional sensitivity is suspended. We

published our first results in *Equilibres et Desequilibres Biologiques* with all the reserves imposed by prudence. Since then our method has been applied in various countries, according to certain publications, with success.

Another consequence of these new ideas on the reactional sensitivity was elucidation of the phenomenon of artificial hybernation which makes it possible to conduct certain surgical interventions by arresting the reactional processes of the nervous system without going beyond a slowing down of the vegetative functions.

We recently learned with pleasure that centres for the prevention and cure of atomic accidents (those due to radioactive fall-out) have been set up in America on the basis of our original work *The Organic Sensitivity* and upon the preceding notions concerning the reactional sensitivity.

We showed, as far back as 1924 ¹⁴ that various substances can be ingested to modify the reactional sensitivity, such as pilocarpine, eserine, curare. Vitamins III or B₂, etc. No doubt we may hope for great progress along these lines.

¹⁴ *La Sensibilite Anaphylactique*, Presses Universitaires de France. (Collection des Monographies internationales.)

We can now pass on to conclusions of a moral character which complete those already stated. The fact that they are based upon biological notions gives them, we believe, a very special interest. If the anima does in fact actualise the powers and if the exercise of these powers upon the plans of the activity of the mind does give evidence of a real freedom—thanks to the reactional margin which makes possible the hesitation that precedes the act of choosing—there follows a notion which is of decisive importance for morality, namely, the notion of obligation. If there were no freedom, there could be no obligation, since no hesitation would be possible before the moment of choice. If there were no power, there would be no obligation. We are only under obligation in so far as we are able to do. Furthermore, the notion of freedom in the exercise of power brings with it inevitably that of responsibility. The responsibility is certainly not always the same, for the exercise of the powers is not always the same, but a real responsibility the extent of which we ourselves are unable to judge. Thus power, obligation and responsibility are closely linked and all are based upon the biological observation itself. It is this that constitutes their strength and their reality ¹⁵.

¹⁵ M. Vernet, *L'Homme, Maitre de sa Destinee, Ethique et Biologie*, Grasset Edit., Paris 1956. One volume of 316 pages. On the same subject, by the same author, see *La Vie et son Mystere*, Grasset Edit., Paris 1958. One volume of 264 pages. P. 197 to the end. In these books, one shows that the two words “predestination” and “predetermination” must not be confused with each other. If man is seen as master of his destiny, it is because he enjoys a real freedom within the frame of a fundamental organisation that alone is determined by its reactional margin. There still exist free, gratuitous actions or, to put it differently, actions performed by man’s will or by divine grace. Hence predestination is different from predetermination.

But how can we have obligations without reference to the guiding principles that are presented to our conscience? These are of two kinds. The Organic Sensibility is, in fact, turned both towards the outside (external senses) and towards the inside (inner sense). In other

words, thought and the appreciation which is its foundation can be nourished from two sources, that of the external world and that of the inner world; for the inner sense makes us aware of unconditioned data that could not come to us from without. Their absolute character compels us to regard them as coming from the non-material principle of life—the anima—from which all our powers stem. The sense of the Good, the Just and the Beautiful, for example, is experienced by all men, even though each one appreciates it differently in practice. The appreciation of sensations originating from without also differs from individual to individual; this is due in both cases, not only to the variations in the organic sensibility of each person, but also to the greater or less attention paid to the criteria given by the inner sense data. If the impression produced, for example, by the sight of a revolting injustice differs from one individual to another, this is because the appreciation of each one varies according to whether he listens more or listens less to the feeling of Truth experienced within the depths of his own being. We should not have the intuition of the existence of a power superior to ourselves and to the world, if our appreciation of the inner sense did not refer to data which in thought cannot be reduced to the limits of our material horizon. The mind can represent an immense “possibility” that is perpetually being exercised by means of data which come both from without and from within.

Whatever may be the orientation of thought, it is always the appreciation of the organic sensitivity that intervenes. This it is that forms the consciousness. When the power of appreciation ceases to be exercised, as, for example, in general anaesthesia or of sleep, in states of shock or coma, when all sensitivity has disappeared, the being is no longer conscious. On awakening, or in coming out of these states, that is to say as soon as the power of appreciation is restored, he regains consciousness. Thus it cannot be doubted that there is such a process in the act of consciousness or that this process should be defined by the power of appreciation that is exercised.

Like the sensitivity, of which it is the expression, consciousness has no assigned place in us. This is because both of them are present whenever there is life. In states of shock, followed by coma and loss of consciousness, it is the total organic sensitivity that is suppressed and not, as is commonly supposed, that of the brain alone.

From this it can be seen that consciousness is not a pseudo concept, a word without meaning, but the expression of the functioning of life itself. It is a reality although it has neither form nor mass. The power of appreciation is there before us as its own evidence. As soon as the new-born child awakens to life, he experiences it in his own consciousness. It is the power of appreciation of his own sensitivity that is being exercised. He carries through a true apprenticeship of his most elementary sensations and constructs for himself, little by little, an entire world of perceptions that are at first confused and then, by a process of elimination, are clarified. Rightly speaking, the child does not form his own consciousness; nor can it be said to be acquired by way of evolution. Throughout the curve that leads from birth to death, are inscribed the appearance, in their due order, of the functions and faculties all according to a determined pattern. Consciousness becomes actual with life itself as is the case with the other powers—as indeed must be the case since it is itself a power, that of appreciation. Consequently, the child simply exercises it.

The chain of operations which is required for the exercise of the power of appreciation accounts for the hierarchy which obviously does exist between the functions of the mind and those of the consciousness. The place occupied by the latter in this hierarchy is on the first level of the mental activity. The superimposition of a conscious appreciation upon the reflex phenomena constitutes the first manifestation of this activity. Not only do intelligence and reason appear later than the power of appreciation, but they are also subordinate to it. It is not the intelligence that becomes conscious, but the consciousness that establishes the intelligence. It can, in fact, be observed that intelligence arises from the appreciation of the data of sensation, both present and past as well as images and ideas to which the appreciation gives birth. Each mode of sensorial sensitivity contributes to knowledge by the appreciation that accompanies it. We only understand because we know. We only know because we sense and appreciate. This order of things corresponds, as will be seen, to what occurs in the course of development from the child to the adult. If the child is easily astonished, is it not because it appreciates? We are still far from intelligence and reason. Only after some time, with the aid of memory, by the association of ideas and images, by the work of reflection, does intelligence come to light. And it is only much later (at what is called the age of reason) that reason itself appears. Up to adolescence, the child may exhibit a lively intelligence, long before it gives signs of possessing reason.

Consciousness is thus the power of appreciation; but there are two paths open to its exercise according to whether the power is to be exercised on the side of the outer or of the inner sense. These two modes are different just because of the nature of the data presented to the appreciation. One set of data consists of *sensa* coming from outside or from the visceral life, and the others are the *suprasensible* data which come from within from the principle of life itself. In the first case, the outcome is the psychological consciousness, and in the second case, the moral consciousness of conscience.

Among the guiding principles which reach us through the outward *ruse*, some originate in the social environment and it cannot be denied that their contribution is an important one. They form the obligations imposed upon us by the social order. But these data and these obligations can also come from the depths of our own being, as if they had borrowed nothing from the outer world. The inner sense awakens them in us. These so-called *suprasensible* data perceived by the inner sense, are a light for the moral conscience.

Duty appears, in its final form, as the result of the interplay of these various influences upon the plane of consciousness. This representation being, as it is, a knowledge of the very nature of life itself, endows our existence with a deep significance. Our very existence is conditioned by these essential notions. We live our lives in terms of the duties and the possibilities that are our own.

The notion of power, of duty and of responsibility thus conceived establishes, as we see it, a personal morality since morality extends far beyond the obligations imposed on us by society. Whereas the individual remains tied hand and foot by social constraints, the human person, as far as absolute values are concerned, is subject to his conscience alone. For this reason, it would be impossible for anyone to deny the primacy of the spiritual over the instinctive. The nobility of man consists in being a person. Upon this level, moral obligation is something

quite other than social constraint—it is a morality that is open to the highest sources of spirituality and consciousness.

If, now, we take account of the philosophical, biological and moral conclusions to which we have been led, we are also forced to concede that conceptions of the superman and the superhuman do not agree with the facts of biological observation. Man does not change in his fundamental constitution since the organisation and the functioning of his life are predetermined in their fundamentals. Life works itself out according to equilibria that are exactly defined by its rhythms and its functions. It obeys a law that is unknown in the world of inert matter, that of a perpetual phenomenal reversibility needs to maintain the equilibria. There is no gainsaying that evolutionary variations do occur in the course of the life-cycle, but they concern only secondary characteristics and they remain within the limits of the reactional margin of the organic sensitivity.

Hence any hope of going beyond our natural condition seems to be illusory.

The notion of progress must be rightly understood. The correct exercise of the powers at our disposal can certainly result in progressive improvement in the functioning of the life of the body and even more so in the power of the mind. But this progress remains strictly individual. Man does not transmit it by heredity. Every life begins at zero and goes through its own experience. The child of a genius or of a saint can be a cretin or a monster. Evolution, strictly limited in its predetermination, i.e. according to its initial plan, runs counter to the notion of a progressiveness that could be transmitted so as to permit ascent towards a superhuman level.

No doubt, the police organisation of a society influences individuals; but, once again, they remain within the framework of their private lives.

As for the unheard-of progress that we now witness in the world, this is always being witnessed by eyes that are unchanged. The progress is exterior to man who, himself, cannot change in his fundamental constitution. It is only the conditions of life that can change—not life itself. Improvement in the conditions of life is not to be confused with a transformation of life itself—which is no more than a speculation.

From the moral standpoint, it would seem to correspond better with our human nature that we should search for our highest human possibilities rather than pursue the illusion of the superhuman. As we penetrate more deeply into the knowledge of the functioning of life, we understand better the meaning and purpose of its process and we feel all the more strongly the need for a modest unpretentious approach of these problems.

The morality offered to us appears to be linked with our human condition and within this condition it represents that which is best in us. The stupendous progress that we witness in the domain of physical science and technology, marvellous though it is, does not shed any light upon the problem of life either in itself or in its withinness. As it seems that nothing can alter it in its essential determination, it is but in the improvement of the conditions of its unfolding that we can hope for a better future.