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## **Integral Yoga and the Scientific Method**

by

**Richard Hartz**

Sri Aurobindo Ashram, Pondichery

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**Prof. N.A. Nikam Memorial Lecture**

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### **Resume of Mr. Richard Hartz**

Richard Hartz grew up in the United States, where at an early age he was drawn to Mathematics and Music. By the time he was eighteen, he had become interested in Philosophy and was led to discover the Philosophy and Yoga of Sri Aurobindo. After studying Philosophy at Yale University, he studied Sanskrit and other Indian languages at the University of Washington, where he received an M.A. in Asian Languages and Literature. Since 1980, he has lived in Sri Aurobindo Ashram, Pondicherry, where he works in the Archives and Research Library. He was an editor of the journal 'Sri Aurobindo' Archives and Research and is an editor of "The Complete Works of Sri Aurobindo", now being published in 35 volumes. His translations of Sanskrit and Bengali poetry and his articles on the composition of Sri Aurobindo's 'Savitri' have been appearing for many years in Mother India: A Monthly Review of Culture

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## **Religion, Science and Human Unity**

September 11, 1893, when Swami Vivekananda spoke at the Parliament of Religions in Chicago, could be said to mark the beginning of the infiltration of the spiritual knowledge of India into the West. Symbolically, this date represents the beginning of the end of the age of religious division and the start of a turn towards the spiritual unity of mankind.

But collective progress in such matters is slow, and each step forward is resisted and opposed by powerful conservative and reactionary forces. This was dramatically demonstrated a hundred and eight years after Vivekananda's historic speech, ironically on its anniversary, September 11, 2001, and in the same country, the United States of America. On that day, a desperate outlash of the dying spirit of religious intolerance, politicised and making an ingeniously perverted use of modern technology, gave an indication of how far humanity still has to travel before Vivekananda's vision can be realised.

Sri Aurobindo, who in 1893 returned to India after his education in England and later continued in his own manner Vivekananda's work of spiritually enlightening the modern mind, grappled with the problems involved in achieving a consciousness of global unity and harmony. He recognized realistically the obstacles in the way of such an attempt. In one of his books, *The Ideal of Human Unity*, he observed:

This material world of ours, besides its fully embodied things of the present, is peopled by... powerful shadows, ghosts of things dead and the spirit of things yet unborn. The ghosts of things dead are very troublesome actualities and they now abound.... Repeating obstinately their sacred formulas of the past, they hypnotise backward-looking minds and daunt even the progressive portion of humanity.

Sri Aurobindo did not mean that the "formulas of the past" have or had no truth in them. But in this evolving world, the Time-spirit always moves forward, and the truths of the past have to be reformulated in the context of a constantly enlarging present.

Among these past truths that have to be reformulated, the greatest are those that already contained the seed of "things yet unborn", particularly the knowledge which in India is called Yoga. Broadly speaking, there are three levels of consciousness whose interaction accounts for the whole phenomenon of our existence. The first is the intraregional, out of which we have emerged in the course of evolution and which remains as the source of much of our feeling and action. The second is the rational, whose growing influence in our lives constitutes most of what we call progress. The third is the supranational; it is what we are moving towards, usually without knowing it.

Yoga has come down to us from ancient times, but represents the third level, the supranational, and therefore belongs really to the future much more than to the past. The past was dominated to a large extent, throughout the world, by religions whose core of inner truth was thickly encrusted with unenlightened beliefs, rituals and customs. It has been part of the progress of mankind to shake off more and more the irrationalism of such religion, which is a very different thing from true spirituality, and to replace it by an intelligent view of things,

nowadays often in the form of a scientific mentality.

The modern formula for a rational world is science, democracy and capitalism. But the success of this formula, though brilliant in some directions, has been extremely mixed. It may be doubted whether, on the whole, it has made life better or worse than before. There is no good reason to think it could be otherwise. For scientific materialism is an incomplete view of existence which leaves out the all-important factors of who we are and why we are here. These are questions that science in its present form cannot even begin to address. Science studies the machinery of things, but it cannot tell us anything about the purpose of this machinery. It can, based on the knowledge of physical processes, give us an astonishing power over Matter—a power whose most spectacular uses so far have often been destructive. But something more seems to be needed if we are to have any chance of solving the more and more complex problems of life. Scientific discoveries, as we all know, have in many ways multiplied and aggravated these problems more than they have helped to solve them.

It is only when we go beyond science that the true value of science itself appears in the right perspective. Sri Aurobindo once wrote in a striking aphorism:

God's negations are as useful to us as His affirmations. It is He who as the Atheist denies His own existence for the better perfecting of human knowledge.

The temple of the supranational requires a firm foundation of rationality. A materialistic age has been necessary as a stage in the preparation of the earth to be changed into the image of heaven. The decline of religion has been a necessary step towards the terrestrial kingdom of God glimpsed in the scriptures of the religions.

The founders of most of the major religions have been, in Sri Aurobindo's words, the great dynamic souls who, feeling themselves stronger in the might of the Spirit than all the forces of the material life banded together, have thrown themselves upon the world, grappled with it in a loving wrestle and striven to compel its consent to its own transfiguration.

These "great dynamic souls", born in various parts of the world, have, always been far ahead of their time and have tried to bring about a radical change in human life, which mankind was unwilling or simply unable to accept. Again and again, the result has been only the establishment of one more creed, instead of a living embodiment of the truth brought by the inspired founder of the religion. Man's natural ignorance has been too strong for even God's mightiest messengers to prevail against it.

Nevertheless, these visionaries cannot have been wrong and their work cannot have been in vain. The cause for which they have sacrificed themselves—the divinizing of earthly life—is ultimately the one aim worth pursuing and it cannot fail to be fulfilled. Each outburst of spiritual light leaves a trace in the earth's subtle atmosphere, so to speak, and the cumulative effect of these bombardments is to weaken the strongholds of darkness so that the victory of consciousness over unconsciousness is brought closer and closer.

The country which has done the most to prepare the world for this victory is undoubtedly India, the land of the Rishis, Yogis and Avatars. Here alone there was created, as Sri Aurobindo put it,

a society which lent itself to the preservation and the worship of spirituality, a country apart in which as in a fortress the highest spiritual ideal could maintain itself in its most absolute purity unoverpowered by the siege of the forces around it.

But if the purity of the spiritual ideal has been successfully upheld through the centuries in India as nowhere else, this was achieved only by compromising the dynamism of that ideal and its impact on life. Although this may have been unavoidable under the circumstances of those times, it has to be recognized that it led to a gradual decline in the vitality of Indian civilization as a whole and the present marginalization of a country, or rather a subcontinent, that was in the vanguard of the world's progress. India's spiritual genius was diverted mainly to the pursuit of individual liberation and the society was left to stagnate in a more and more rigid and unprogressive framework.

This, in any case, is how Sri Aurobindo analyzed the problem. He wrote in one of the introductory chapters of *The Synthesis of Yoga*:

In India, for the last thousand years and more, the spiritual life and the material have existed side by side to the exclusion of the progressive mind. Spirituality has made terms for itself with Matter by renouncing the attempt at general progress. It has obtained from society the right of free spiritual development for all who assume some distinctive symbol, such as the garb of the Sannyasin, the recognition of that life as man's goal and those who live it as worthy of an absolute reverence, and the casting of society itself into such a religious mould that its most customary acts should be accompanied by a formal reminder of the spiritual symbolism of life and its ultimate destination.

This describes the system of life which existed in India until recently, and even now has not entirely disappeared. It had its unique value and it served its purpose. But Sri Aurobindo regarded it as a compromise, not the true victory of Spirit over Matter which still lies ahead of us. He goes on to point out the serious disadvantage of this arrangement, which proved almost fatal in the end. This was that

there was conceded to society the right of inertia and immobile self-conservation. The concession destroyed much of the value of the terms. The religious mould being fixed, the formal reminder [of the spiritual symbolism of life] tended to become a routine and to lose its living sense. The constant attempts to change the mould by new sects and religions ended only in a new routine or a modification of the old; for the saving element of the free and active mind had been exiled.

Not that India has lacked intellectuals, far from it. It is not by accident that the now universally popular word "pundit" has been borrowed from Sanskrit. But the Pundits, too, like the Yogis, respected what Sri Aurobindo has termed the "pact with an immobile society". There has been a deficiency in the dynamic, pragmatic intelligence dealing with life freely, forcefully and creatively.

In contrast to India, the Western world meanwhile followed precisely the opposite line of development. There the "free and active mind", which was for a long time almost missing in India, has been dominant for some centuries now, with results we all know. Sri Aurobindo has explained the evolutionary purpose of this movement, which has left no corner of the earth untouched. He notes that the

whole trend of modern thought and modern endeavour reveals itself to the observant eye as a large conscious effort of Nature in man to effect a general level of intellectual equipment, capacity and farther possibility by universalising the opportunities which modern civilisation affords for the mental life. Even the preoccupation of the European intellect, the protagonist of this tendency, with material Nature and the externalities of existence is a necessary part of the effort. It seeks to prepare a sufficient basis in man's

physical being and vital energies and in his material environment for his full mental possibilities.

Sri Aurobindo goes on to list some notable contributions of the modern enterprise to the general improvement of the quality of human life:

By the spread of education, by the advance of the backward races, by the elevation of depressed classes, by the multiplication of labour-saving appliances, by the movement towards ideal social and economic conditions, by the labour of Science towards an improved health, longevity and sound physique in civilised humanity, the sense and drift of this vast movement translates itself in easily intelligible signs.

This was written early in the last century. Since then, much progress has been made in some of these areas as well as in others, such as the remarkable developments in instantaneous communication annulling barriers of distance and bringing the latest information within the reach of inhabitants of all parts of the globe. All this is positive and constructive, but it is only one side of the picture. Even leaving aside the havoc wreaked on the natural environment and the terrible dangers due to the invention and proliferation of the devastating weapons now put at the service of human irrationality- for if science itself is a great unifier, it has disastrously armed the forces of division-how much have the masses been elevated to a higher level of the mental life in its intellectual, aesthetic and ethical dimensions? Rich traditions are perishing and their place is taken by cheap entertainment, crass commercialism, undigested information, an unprecedented vulgarity, an alarming moral bankruptcy. The negative side of the story is too well-known and too often decried to need elaboration. God only knows where it is all heading. But this is just the reason why we should not despair, if we remember Krishna's words to Arjuna at a moment of overwhelming crisis:

*ishvarah sarvabhutanam hriddeshe 'rjuna tishthati,  
bhramayan sarvabhutani yantrarudhani mayaya.*

The Lord in the hearts of all beings moves them like the cogs in a huge machine while they themselves, caught up in the illusions of the surface consciousness, know not what drives them or where they are going.

We are faced with two fiascos. The first is the fiasco of the East, where spirituality has failed to illumine society with its inner knowledge and instead has only imposed a static religious framework on life. The second is the fiasco of the West, where the free thinking mind has failed to uplift the masses to a true mental life and has only produced a restless materialism, always hungry for new gadgets. So where do we go from here? There seems to be only one solution: for the East and the West to join forces in order to tackle the cause of both failures, namely, the inertia and downward pull of Matter. The Thinker in man and the Seer in man, the rational and the supranational, must unite to transform the Animal in man, the intraregional.

This is the solution proposed by Sri Aurobindo. In October 1914 when Europe was collapsing into the chaos of a world war, he wrote in the chapter of *The Synthesis of Yoga* from which I have already quoted:

The truth is that neither the mental effort nor the spiritual impulse can suffice, divorced from each other, to overcome the immense resistance of material Nature. She demands their alliance in a complete effort before she will suffer a complete change in humanity.

This alliance of the powers of the mind with those of the spirit implies enlarging the old other-worldly Indian ideal to include collective progress and physical perfection among the

aims of spiritual aspiration. Equally, it means heightening the this-worldly Western ideal to accept a spiritual transformation as the eventual goal of all progress.

### **Yoga in a Materialistic World**

Sri Aurobindo foresaw the outcome of this united effort in terms of the spread of Yoga. He wrote:

The generalisation of Yoga in humanity must be the last victory of Nature over her own delays and concealments. Even as now by the progressive mind in Science she seeks to make all mankind fit for the full development of the mental life, so by Yoga must she inevitably seek to make all mankind fit for the higher evolution.... And as the mental life uses and perfects the material, so will the spiritual use and perfect the material and the mental existence as the instruments of a divine self-expression.

According to what Sri Aurobindo saw in his prophetic vision, the knowledge developed and preserved over the ages in India under the name of Yoga is destined not merely to survive, but to triumph and usher in an age of spiritual discovery that will fulfil the work now being done by science to attack the causes of human ignorance and misery.

But what is this Yoga that can “make all mankind fit for the higher evolution” and turn our mental and physical life into “instruments of a divine self-expression”? It is not what most people think of nowadays when they hear the word “Yoga”. The popular notion of Yoga at present, especially in the West and consequently to some extent even in India, is that it means Hathayoga, an elaborate physical discipline based on a system of postures and breath-control exercises. Hathayoga, however, is just the tip of the iceberg of Yoga. Though its mechanical processes, in a simplified form, appeal to the materialistic modern mind for their tangible benefits, real Hathayoga is a long and strenuous path to reach a goal which it has in common with all forms of Yoga.

The goal of every method of Yoga, according to the meaning of the Sanskrit word *yoga* itself, is union-union, that is, with the eternal Reality hidden behind the transient appearances of the world. This Reality is one and not many; but because of the complexity of our nature it can be approached in a variety of ways. There has been no limit to the resourcefulness, audacity and intuitive insight of the Yogis in finding methods of sublimating each element of man’s being to the point where it passes beyond the finite and enters into contact with the Infinite.

To attain the Yogi’s traditional objective of release out of bondage to the body into communion with the Divine, any one of these established techniques practised with an all-absorbing intensity is enough. But if Yoga is to enter dynamically into the mainstream of life, specialized methods that require the individual to shut himself off from the world will not serve the purpose. To adapt them to modern conditions by diluting them, as is often done, means to lower the ideal instead of enlarging it. Therefore Sri Aurobindo found that the time-honoured knowledge and practice of Yoga have to be reformulated to regain their relevance in an evolving world. Proposing a new synthesis, he wrote:

Yoga has long diverged from life and the ancient systems which sought to embrace it, such as those of our Vedic forefathers, are far away from us, expressed in terms which are no longer accessible, thrown into forms which are no longer applicable. Since then mankind has moved forward on the current of eternal Time and the same problem has to be approached from a new starting-point.

A life-embracing Yoga that keeps pace with the forward movement of Time and does not

confine itself to an existing tradition is bound to be an adventure into the unknown. In this respect, it would have much in common with the adventure of modern science, whose discoveries in the last century or so have revolutionised our conception of and mastery over the physical world. The Yoga of the future could have much more far-reaching consequences, since its exploration would not be confined to the material surface of existence. It would plunge into the depths of consciousness, soar into undreamed-of heights of the spirit and bring the truths and powers of those realms back with it to reshape our lives.

Much of what we can expect to be discovered when Yoga takes over from science as the leader of the human quest is sure to be a rediscovery of things that were known in ancient times; but this knowledge will no longer be restricted to a few initiates. Science itself has already opened windows upon a world that differs startlingly from the one presented to us by our senses. The Sanskrit word for the illusoriness of appearances is *maya*. The perception of the world as *maya* does not mean that the world does not exist at all, but that its reality is different from its appearance. A gulf has still to be bridged between the scientific and Yogic views of the nature of reality, but their agreement about the unreality of sensory appearances is an important step towards the unity of knowledge.

Sri Aurobindo commented on the convergence of the conclusions of science with those of the ancient Indian knowledge in his major philosophical work, *The Life Divine*, where as far back as 1914 he wrote:

Nothing can be more remarkable and suggestive than the extent to which modern Science confirms in the domain of Matter the conceptions and even the very formulae of language which were arrived at, by a very different method, in the Vedanta,-the original Vedanta, not of the schools of metaphysical philosophy, but of the Upanishads. And these, on the other hand, often reveal their full significance, their richer contents only when they are viewed in the new light shed by the discoveries of modern Science,-for instance, that Vedantic expression which describes things in the Cosmos as one seed arranged by the universal Energy in multitudinous forms.<sup>12</sup>

This idea of a single “seed” multiplied and arranged to form myriads of objects is found in the Shwetashwata Upanishad in the phrase *ekam bijam bahudha yah karoti*. It is the subject of a sonnet by Sri Aurobindo called “Electron”:

The electron on which forms and worlds are built,  
 Leaped into being, a particle of God.  
 A spark from the eternal Energy spilt,  
 It is the Infinite’s blind minute abode.  
 In that small flaming chariot Shiva rides.  
 The One devised innumerable to be;  
 His oneness in invisible forms he hides,  
 Time’s tiny temples to eternity.  
 Atom and molecule in their unseen plan  
 Buttress an edifice of strange onenesses,  
 Crystal and plant, insect and beast and man,—  
 Man on whom the World-Unity shall seize,  
 Widening his soul-spark to an epiphany  
 Of the timeless vastness of Infinity.

In this poem the vision of modern physics is inextricably fused with the vision of the ancient

mystics. But the consummation foreseen at the end of the poem, the widening of the human soul into infinity, will come only when we consciously allow ourselves to be seized upon by the World-Unity. This is the essence of what is called Yoga, and it goes far beyond the limitations of science as it is now understood.

Yoga is scientific in a sense, but it is a kind of super-science that properly begins where ordinary science ends. Science is based on the observation of the objective world. It assumes the objective to be more real than the subjective, even though it ends up proving that the objective appearances it started from are illusory. Most forms of Yoga, on the contrary, are based on subjective self-observation. They assume the inner to be more real than the outer, since without consciousness the outer world would not exist for us, or possibly would not exist at all. With regard to the distinction between the validity of subjective and objective experience, Sri Aurobindo remarked in a letter:

Yoga... is scientific to this extent that it proceeds by subjective experiment and bases all its findings on experience.... As to the value of the experience itself, it is doubted by the physical mind because it is subjective, not objective. But has the distinction much value? Is not all knowledge and experience subjective at bottom? Objective external physical things are seen very much in the same way by human beings because of the construction of the mind and senses; with another construction of mind and sense quite another account of the physical world would be given—Science itself has made that very clear.<sup>14</sup>

Naturally, ordinary subjective experience may be as misleading as the objective data received through the senses. But to dismiss for this reason all data except what the admittedly unreliable testimony of the senses provides, is to restrict arbitrarily the field of knowledge. It is legitimate for scientists to limit their own investigations in this way, as part of the discipline of their field. It is not legitimate, however, to claim that the results of Yogic research are in any way disproved by physical science's inability to confirm them by its own kind of tests.

The fact that such claims are becoming less and less fashionable is an encouraging sign. Science and spirituality are rightly viewed as complementary, not as mutually antagonistic. Using a simple analogy, Sri Aurobindo explained how Yoga is in the psychological domain what science is in the physical. In the opening chapter of *The Synthesis of Yoga* he wrote:<sup>15</sup>

Yogic methods have something of the same relation to the customary psychological workings of man as has the scientific handling of the force of electricity or of steam to their normal operations in Nature. And they [Yogic methods], too, like the operations of Science, are formed upon a knowledge developed and confirmed by regular experiment, practical analysis and constant result.<sup>15</sup>

The normal manifestations of electricity in its various forms in Nature seemed to be of little importance for human life until rather recently. If we consider how much difference the harnessing of this force has made to our outward lives in a relatively short time, we can imagine the effects of an inner revolution through Yoga which would make it possible for large numbers of people to begin to tap their latent inner power.

### **Integral Yoga, the Scientific Method and the Future**

Of course, it is not likely that Yoga will ever become as easy as switching on an electric light. Sri Aurobindo once wrote to a disciple who underestimated the difficulty of “bringing down” higher planes of consciousness:

You speak of silence, consciousness, overmental, supramental, etc. as if they were so many electric buttons you have only to press and there you are. It may be one day but meanwhile I have to discover everything about the working of all possible modes of electricity, all the laws, possibilities, perils, etc., construct roads of connection and communication, make the whole far-wiring system, try to find out how it can be made foolproof and all that in the course of a single lifetime.<sup>16</sup>

This gives a faint idea of what was involved when Sri Aurobindo set out to develop the spiritual path which he called integral Yoga. In another letter, he wrote:

I think I can say that I have been testing day and night for years upon years more scrupulously than any scientist his theory or his method on the physical plane.<sup>17</sup>

This was written in 1932, nearly twenty years after Sri Aurobindo began to enunciate the basic principles of an integral Yoga in his monthly journal, the *Arya*, where from 1914 to 1921 he published the original version of *The Synthesis of Yoga*. A few years before he began to write that book, he had started keeping a detailed diary of the experiments and experiences on which his Yoga is based. This diary, recently published for the first time in two thick volumes under the title *Record of Yoga*, is a unique document which substantiates Sri Aurobindo's statement that he had been testing the processes and results of his Yoga "day and night for years upon years". That this was literally true is shown by the fact that part of the Yoga, concerned with the mastery of states of *samadhi*, went on even during the hours of physical sleep.

But why was it necessary to develop a new form of Yoga when the Indian tradition already has such a wealth of Yogic systems? Sri Aurobindo saw that the challenges of the present evolutionary crisis can be met only by an integral Yoga encompassing the totality of our complex nature. He found the various traditional methods too specialised for this purpose. He also found it impractical to combine these disparate systems, each of which has grown along its own lines for centuries. Their accumulated knowledge undoubtedly has an immense value, but has to be assimilated into a new synthesis.

Sri Aurobindo was not the first and has not been the only Yogi to address this problem in recent times. Referring to the antecedents of his own work, he observed that

in the life of Ramakrishna Paramhansa, we see a colossal spiritual capacity first driving straight to the divine realisation, taking, as it were, the kingdom of heaven by violence, and then seizing upon one Yogic method after another and extracting the substance out of it with an incredible rapidity, always to return to the heart of the whole matter, the realisation and possession of God by the power of love, by the extension of inborn spirituality into various experience and by the spontaneous play of an intuitive knowledge.<sup>18</sup>

But for all his admiration for the spiritual genius of Sri Ramakrishna, Sri Aurobindo felt that something more remained to be done. He continued:

Such an example cannot be generalised. Its object also was special and temporal, to exemplify in the great and decisive experience of a master-soul the truth, now most necessary to humanity, towards which a world long divided into jarring sects and schools is with difficulty labouring, that all sects are forms and fragments of a single integral truth and all disciplines labour in their different ways towards one supreme experience.<sup>19</sup>

Sri Aurobindo believed that the human soul is becoming capable of a more direct and

complete realisation of this integral truth and supreme experience than in the past. He did not pretend that this would be easy. On the contrary, the method he proposed calls for a supreme effort commensurate with the greatness of the result it has in view. Integral Yoga is not a fixed system following a prescribed series of steps without regard for differences between individuals. It is a broad path in which the mental, emotional and physical nature of each person is led towards its fulfillment and transformation by an inner guidance. Its essential movement is a progressive diminution of the element of ego in our thought, feeling and action and an opening to a universal Light, Love and Power whose channels and instruments we are to become.

A shifting of our centre of consciousness from the rational to the supranational level is the fundamental change envisaged in this Yoga. But we cannot expect such a radical change to take place in us if we have not even succeeded in putting our being into some semblance of order by the ordinary human faculties of reason and intelligent will. Sri Aurobindo therefore put a strong emphasis on the need to purify our nature from all sources of confusion, obscurity and wrong working of the different parts of the being. The key to this purification-or, in Sanskrit, *shuddhi*-is the right use of the capacity of understanding which makes us human. And this is not possible unless the understanding itself is pure, clear and disinterested.

This is why an adequate mental preparation of the human race, which science is now doing so much to bring about, is an indispensable condition for a collective spiritual change along the lines of Sri Aurobindo's vision. For without this preparation there would be, as he put it, a danger of "the repetition in old or new forms of a past mistake"<sup>20</sup> such as a revival of sectarian religious obscurantism and fanaticism, rejecting the claims of the reason without substituting a higher authentic illumination.

To counteract the possibility of such dangers, a widespread cultivation of the scientific attitude is highly desirable. This could be an effective training for a Yoga of self-perfection of the kind outlined by Sri Aurobindo as the distinctive movement of an integral Yoga. The scientific attitude is characterised by rational impartiality in the seeking for truth and strict regard for accuracy. These qualities are abundantly evident on every page of the writings of Sri Aurobindo and are most strikingly displayed in his *Record of Yoga*. From beginning to end, this diary resembles nothing so much as the notes of a scientist in his laboratory.

The procedures followed in scientific research are applications of the scientific method, which is a formal expression of the scientific attitude. By perfecting this method, Western civilisation has taken the enormous strides we have seen in recent centuries in terms of the knowledge and mastery of the material universe. On the other hand, the inner realms explored by the civilisations of the East have remained almost untouched by this outward-looking science. Yet with a little adaptation, the simple series of steps constituting the scientific method could be followed in investigating not only the-external! world, but the subtler field of introspective self-knowledge, where greater wonders lie hidden than what the most powerful microscope or telescope can reveal.

Sri Aurobindo has given a precise description of the three principal steps of the scientific method (without calling it that) in an account of the working of the reasoning faculty in general, whether it applies itself to the objective or the subjective field:

The characteristic power of the reason in its fullness is a logical movement assuring itself first of all available materials and data by observation and arrangement, then acting upon them for a resultant knowledge gained, assured and enlarged by a first use

of the reflective powers, and lastly assuring itself of the correctness of its results by a more careful and formal action, more vigilant, deliberate, severely logical which tests, rejects or confirms them according to certain secure standards and processes developed by reflection and experience.<sup>21</sup>

The first step is the gathering of data by exact observation of phenomena using whatever instruments are necessary. The second step is the use of inductive reasoning, proceeding from the particular to the general, to construct a hypothesis or a preliminary generalisation suggested by the data. The final step is verification of the hypothesis by further observations and experiments, testing the validity of deductions that follow logically from the preliminary generalisation.

The rigorous application of this simple method to material phenomena observed by the senses has enabled modern science to look beyond these surface phenomena and give us a surprisingly different picture, as Sri Aurobindo points out:

To the superficial view of the outer mind and senses the sun is a little fiery ball circling in mid air round the earth and the stars twinkling little things stuck in the sky for our benefit at night. Scientific enquiry comes and knocks this infantile first-view to pieces. The sun is a huge affair (millions of miles away from our air) around which the small earth circles, and the stars are huge members of huge systems indescribably distant which have nothing apparently to do with the tiny earth and her creatures. All Science is like that, a contradiction of the sense-view or superficial appearances of things and an assertion of truths which are unguessed by the common and the uninstructed reason.<sup>22</sup>

Sri Aurobindo goes on from such striking results of the physical sciences to the internal field, where Western knowledge compares less favourably with that of the Eastern traditions:

The same process has to be followed in psychology if we are really to know what our consciousness is, how it is built and made and what is the secret of its functioning's or the way out of its disorder.<sup>23</sup>

This is essentially what the Yogis have been doing in India since time immemorial. But there are differences as well as similarities between investigating the laws of Matter and seeking for the truths of the spirit. In the end, these differences force us to make a clear distinction between the scientific and Yogic approaches to knowledge. For, as Sri Aurobindo says,

the experiences of yoga belong to an inner domain and go according to a law of their own, have their own method of perception, criteria and all the rest of it which are neither those of the domain of the physical senses nor of the domain of rational or scientific enquiry. Just as scientific enquiry passes beyond that of the physical senses and enters the domain of the infinite and infinitesimal about which the senses can say nothing and test nothing-for one cannot see and touch an electron or know by the evidence of the sense-mind whether it exists or not...-so the spiritual search passes beyond the domain of scientific or rational enquiry and it is impossible by the aid of the ordinary positive reason to test the data of spiritual experience and decide whether those things exist or not or what is their law and nature.<sup>24</sup>

The ancient Rishis of India probed deeply into the spiritual nature of existence and found that, contrary to appearances, this world is the expression of a single absolute reality which they called *brahman*:

*brahmaivedam amritam purastad brahma pashchad brahma dakshinatash chottarena,  
adhash chordhvam cha prasritam brahmaivedam vishvam idam varishtham.*

All this is Brahman immortal, naught else; Brahman is in front of us, Brahman behind us, and to the south of us and to the north of us and below us and above us; it stretches everywhere. All this is Brahman alone, all this magnificent universe.<sup>25</sup>

Such a proposition contradicts our normal perception of the world as much as do the theories of particle physics. It can be neither proved nor disproved by science as we know it, which is equipped to study the process of things but not their reality. As a mystical experience, it may be overwhelmingly true for the person who has realised it, as Sri Aurobindo did early in his sadhana. For the rest of us, if we take Brahman to be something more than a philosophical concept it is because we accept the testimony of those who have had the experience of it through Yoga, just as we accept the existence of electrons on the authority of those who have verified the theories of atomic physics by appropriate experiments. Every scientist begins by accepting a large part of the knowledge in his field on trust from predecessors or colleagues and does not insist on repeating every experiment himself. To trust conclusions drawn from centuries of Yogic experience is equally sensible. And since the Indian spiritual tradition has never been static, but has been in constant development, there is no reason to reject the innovations of a Yogi like Sri Aurobindo who has been led to venture beyond the tradition into realms that have perhaps not been explored before, or at least have been rarely visited since the dawn of the ancient Vedic age.

Sri Aurobindo wrote in his *Essays on the Gita* that "truth is the foundation of real spirituality and courage is its soul".<sup>26</sup> In a letter, he commented on an example of the bold originality of the real Indian spirit, which does not hesitate to be true to its experience:

Take Vivekananda's famous answer to the Madras Pundit who objected to one of his assertions saying: "But Shankara does not say so", to whom Vivekananda replied: "No, but I, Vivekananda, say so", and the Pundit was speechless. That "I, Vivekananda," stands up to the ordinary eye like a Himalaya of self-confident egoism. But there was nothing false or unsound in Vivekananda's spiritual experience. For this was not mere egoism, but the sense of what he stood for and the attitude of the fighter who, as the representative of something very great, could not allow himself to be put down or belittled.<sup>27</sup>

India needs to stand before the world with such confidence in the truths it represents. Sri Aurobindo termed this confidence *shraddha svashaktyam*, faith in the power within oneself, which is an individualized expression of the universal Shakti. It is not true that the West has arisen because it believes in reason, while India has stagnated because it is a land of faith. On the contrary, the West has arisen because it has faith in its own limited ideals, while India with her higher ideals, possessing the knowledge the world most needs for its future, has gone into a temporary decline because of a loss of living faith in the divine Shakti within her. This decline has already been reversed, but its after-effects still cling to the national life and will require a concerted and enlightened effort to shake off.

This effort has to be made under modern conditions and cannot succeed by trying to go back to the past, because Nature or the mover of Nature, the Lord in the hearts of all, has created these new conditions in order to advance towards a manifestation which is sure to be far greater than anything the earth has seen. It is useful for this purpose to insist on the distinction between religion and spirituality made by Sri Aurobindo. Religion belongs essentially to the past and has often been in conflict with the progressive march of science. Spirituality, on the other hand, belongs essentially to the future and cannot conflict with science, since science and spirituality are both searching for the truth, and the truth is

ultimately one. Science is preparing the human mind for a breakthrough into the spiritual dimension. Therefore it is a natural ally of Yoga.

I will conclude by reading a few words on the difference between religion and spirituality by the Mother, who carried on Sri Aurobindo's work after his passing:

Religion exists almost exclusively in its forms, its cults, in a certain set of ideas, and it becomes great only through the spirituality of a few exceptional individuals, whereas true spiritual life, and above all what the supramental realisation will be, is independent of every precise, intellectual form, every limited form of life. It embraces all possibilities and manifestations and makes them the expression, the vehicle of a higher and more universal truth.

A new religion would not only be useless but very harmful. It is a new *life* which must be created; it is a new *consciousness* which must be expressed. This is something beyond intellectual limits and mental formulae. It is a living truth which must manifest.<sup>28</sup>

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