

**Program Malta 2006: ISSEI workshop “evolution”**

**Thursday 27<sup>th</sup> July PM 1:30 – 5:30; continued on Friday 28<sup>th</sup> July AM 9:30 – 12:30  
(Room 206)**

## **Sri Aurobindo’s Vision and the 20<sup>th</sup> Century: Physics and the Philosophy of Evolution**

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### Nature’s Dialectic

Few among humanity have yet undertaken the challenge, availed the opportunity, transcended their conventional mental formulas, and achieved the clarity of intention necessary to see the vision of Sri Aurobindo. Fewer have gone so far as to integrate his vision into their thought and life, and so to understand it fully, to grasp its historical significance, and to realize its force, its evolutionary potential. Therefore it can truly be said that Sri Aurobindo belongs to the future.<sup>1</sup> And yet his vision, and the thought forms and literary expressions that he created to embody it, are vibrant within the epoch of human achievement known as the 20<sup>th</sup> Century – that moment in time and the history of civilization that can be understood as the culmination of the rational cycle of human development and the beginning of a suprarational, integral cycle - like a subtle ether flowing through everything.

Abundant are the signs of that evolutionary transition of which he was the harbinger, indications of the integral and supramental structures of consciousness that he said would emerge. But the emergence of creative thought formations, and of new evolutionary forms, takes time. And very little is known about this process of emergence in any case. It is not common knowledge, and it is not the way we have been conditioned to understand how evolution happens. The signs, nevertheless, are most evident in the subtler, more spiritual thought of the century, but clearly perceptible also in the arts and literature, and in the human sciences – philosophy, psychology, sociology. They are progressively apparent in the startling theoretical discoveries of the natural sciences, in physics, evolutionary biology, ecology. But there, in the mental disciplines, the fundamental aporias and enigmas of thought that permeate the epoch are still, as always, the questions of man, of consciousness, of our ability, or inability, to know and conquer our human limitations. The new has not yet emerged, but its emergence is presaged by new perspectives, flashes, intensities, forebodings, and irrepressible facts, and by the failure and breakdown of old structures.

In an epoch of incomparable human cruelty, depravity and destruction, paired with almost miraculous advances in the products and processes of global technological civilization, when the human has become godlike in its mastery of nature, humanity is

being forced, at last perhaps, to seek hope shrouded in its most desperate moment of deficient self-revelations, and the self-realization of its shadow identity as creator of the culture of nihilism and extinction.<sup>2</sup> It is perhaps inevitable, then, that we rewrite Sri Aurobindo, that we revision and rethink his vision as the background of this passing age of scientific and technological hubris, and that we narrate the necessary emergence of the trans-human. For, as he saw and wrote in the first few pages of his massive literary life-work, early in the century:

“...today we see a humanity satiated but not satisfied by victorious analysis of the externalities of Nature preparing to return to its primeval longings. ...to convert our twilight or obscure physical mentality into the plenary supramental illumination, to build peace and a self-existent bliss where there is only a stress of transitory satisfactions besieged by pain and emotional suffering, to establish infinite freedom in a world which presents itself as a group of mechanical necessities...

“... all Nature seeks a harmony, life and matter in their own sphere as much as mind in the arrangement of its perceptions. The greater the apparent disorder of the materials offered or the apparent disparateness, even to irreconcilable opposition, of the elements that have to be utilized, the stronger is the spur, and it drives towards a more subtle and puissant order than can normally be the result of a less difficult endeavour.<sup>3</sup>

But the dialectic of progress that evolutionary Nature utilizes to achieve her ends is a difficult lesson for us; it is one that we would in fact prefer to ignore. Or, perhaps it is because of our ignorance and unwillingness to learn, that she chooses to use this method. However that may be, it is by negation that she affirms and by destruction that she creates, as Sri Aurobindo stated unequivocally in those first pages, in 1914:

In our world error is continually the handmaid and pathfinder of Truth; for error is really a half-truth that stumbles because of its limitations; often it is Truth that wears a disguise in order to arrive unobserved near to its goal.<sup>4</sup>

The world today presents the aspect of a huge cauldron of Medea in which all things are being cast, shredded into pieces, experimented on, combined and recombined either to perish and provide the scattered material of new forms or to emerge rejuvenated and changed for a fresh term of existence. ...For the march of Nature is not drilled to a regular and mechanical forward stepping. She reaches constantly beyond herself even at the cost of subsequent deplorable retreats. ...And these self-exceedings are the revelation of that in her which is most divine or else most diabolical, but in either case the most puissant to bring her rapidly forward towards her goal.<sup>5</sup>

The First World War was then upon us, soon to be followed by the Holocaust and Hiroshima. These were followed, in turn, by the liberation of many new nations formerly subjugated by Colonialism, and the ascendancy of the civilization of affluence, with Germany and Japan, ironically, near the top. It appears that the will to power evolved rapidly in these cases, from a lower, inhuman and destructive form into a form of creativity, efficiency and excellence. Perhaps a reverse paradox might be represented

historically by the invention and widespread use of antibiotics during and after World War II, followed by the exponential increase of the human population from 2.5 billion in 1950 to over 6 billion in 2000. (It had already almost doubled from 1.6 billion at the turn of the century, largely in response to the spread of mechanized agriculture.) If, as a result of the population explosion, pollution, global warming, and the depletion of natural resources this “progress” were to bring an end, or a rapid decline, to our species, we might see a parallel with the end of the age of the dinosaurs, which apparently made room for the rise of primates just a few million years later. This pattern of reversals would apparently illustrate and be the justification for what Sri Aurobindo terms, poetically, Nature’s harsh economy, and yet the indication of a process of change that is neither random nor arbitrary, but is rather characterized by order and purpose. It is one in which Nature sets up the oppositions necessary to create the circumstances, structures, conditions for the emergence of that next stage of development, without which her processes could not continue to evolve. Therefore it might be said, to reaffirm the theoretical insights of critical thought with Sri Aurobindo’s more holistic, spiritual vision: if the apparent oppositions are terms of Nature’s intentional process, there are in fact no oppositions.

Could it perhaps then be said, that the extraordinary developments of scientific thought, knowledge, and technology in the 20<sup>th</sup> Century have set the stage for the further evolution of consciousness, not so much by what they have accomplished for humanity and the Earth, but rather by having created the possibility of such catastrophic circumstances that survival can only be achieved by overcoming and transcending this “intelligent human” with his righteous violence? Such speculation is at least not out of place in the context of the English literary traditions of Blake and Huxley to which Sri Aurobindo’s prophetic writing might also be said to belong.

### Uncertainty and Complementarity

In 1914, Sri Aurobindo wrote, in the context of his speculations about the development of scientific thought, “It will be evident that essential Matter is a thing non-existent to the senses and only... a conceptual form of substance; and in fact the point is increasingly reached where only an arbitrary distinction in thought divides form of substance from form of energy.”<sup>6</sup> He was making a comparison between the truths of the ancient Vedic knowledge and the new discoveries of modern science, for the purpose of illustrating a possible trend of the latter towards “a Monism which is consistent with multiplicity, towards the Vedic idea of the one essence with its many becomings.”<sup>7</sup> And then, within a few short paragraphs, he formulated the integral knowledge, towards which science only now, at the beginning of the next century, tentatively begins to move: “Life...begins to reveal itself as an obscure energy of sensibility imprisoned in its material formulation; and when the dividing ignorance is cured which gives us the sense of a gulf between Life and Matter, it is difficult to suppose that Mind, Life and Matter will be found to be anything else than one Energy triply formulated, the triple world of the Vedic seers. Nor will the conception then be able to endure of a brute material Force as the mother of Mind.”<sup>8</sup> As we shall see, this understanding is still a step before which scientific thought hesitates. And the one beyond, the final destined leap, it does not yet dare to think: “The

Energy that creates the world can be nothing else than a Will, and Will is only consciousness applying itself to a work and a result.”<sup>9</sup>

Einstein had published the special theory of relativity in 1905 and then developed the general theory of relativity in 1915, definitively altering the traditional conceptions of Space and Time. Commenting on the subsequent development of quantum theory in the 1920s, Capra (1982) says, as if to confirm Sri Aurobindo’s prediction, “The most important consequence of the new relativistic framework has been the realization that mass is nothing but a form of energy.”<sup>10</sup> And the Nobel physicist, Ilya Prigogine (1984), currently at the forefront of cosmic evolutionary theory, writes: “Quantum mechanics teaches us that... on all levels reality implies an essential element of conceptualization.”<sup>11</sup>

The seminal discoveries of quantum mechanics in that theoretical “golden age” of physics in the 1920s, made by Einstein, Bohr, Planck, Heisenberg, Dirac, Shrodinger, etc., have been described by Hawking (2001) as “a new picture of reality” in which, “No longer did any particles have a definite position and speed. Instead, the more accurately one determined a particle’s position, the less accurately could one determine its speed, and vice versa.”<sup>12</sup> Thus it became uncertain whether matter is something stable and solid or something fluid and in motion. And this “uncertainty principle,” as formulated by Werner Heisenberg, has become perhaps the most often cited, because the most profoundly disturbing, discovery of scientific thought in the Twentieth Century. Let us therefore ask why this should be so, and how it happens to be especially significant in the context of Sri Aurobindo’s evolutionary vision.

The theory of relativity presented a conception of the universe in which Space was not a boundless container lasting through an eternal Time, in which material objects move and change in predictable ways. Rather it replaced this static view of the physical universe, which had been held by scientific and philosophical thought at least since Plato and Aristotle, with the view that space and time are relative dimensions of a universe in which everything is in motion. As Capra puts it: “In such a framework space and time are intimately and inseparably connected and form a four-dimensional continuum called “space-time”. ... Physicists have now lived with relativity theory for many years and have become thoroughly familiar with its mathematical formalism. Nevertheless, this has not helped our intuition very much. We have no direct sensory experience of the four-dimensional space-time...”<sup>13</sup>

Moreover, with the development of quantum mechanics, which presents a picture that Capra says “clashes with our deepest intuition of reality,” subatomic particles, or quanta of matter-energy, do not really appear to exist except insofar as they are defined by observers. Matter is a conceptual form of energy as Sri Aurobindo said. And according to quantum physics, the behavior of this matter-energy is determined by non-local events, as if the “particle” were spread throughout great expanses of space as a “wave” and the existence and behavior of this energy - of which everything is made - is known only through a mathematics of probability. Thus, the principle of uncertainty, which defines a dynamic world that appears to be, as Heisenberg said, “a complicated tissue of events, in which connections of different kinds alternate or overlap or combine and thereby

determine the texture of the whole.”<sup>14</sup> Contrary to the conventional, analytical, and mechanistic paradigm, the part is determined by the whole, rather than the other, common sense, way around.

Hawking, who helped to prove, in the late 60s, that space-time had a beginning with the Big Bang and that the universe is continually expanding and evolving, says that Einstein himself refused to accept these bounded implications of his theory, preferring the classical view of a static, essentially unchanging and eternal universe. And of the implications of quantum theory, Einstein reportedly said, “It was as if the ground had been pulled out from under one, with no firm foundation to be seen anywhere, upon which one could build.”<sup>15</sup>

And so, the universe at bottom is not mechanical and not made up of well defined building blocks (atoms, quarks, etc.), with cause and effect relationships that determine the whole in predictable ways, but is rather a whole which determines its parts through an interconnected web of vast energy fields, and this whole appears to be somehow self-determining, and unpredictable by our way of understanding. Several troublesome implications seem to follow. One is that, if the universe is not deterministic and predictable, it must be ultimately random, chaotic, irrational; another is that, if we can neither know nor determine the structures and processes of Nature with certainty, then we haven’t much reason for hope. It would seem that we are led necessarily to a position of existential nihilism. And in fact, the 20<sup>th</sup> Century has often been characterized as such an irrational age of nihilism.

However, our mathematical understanding of the physical universe has also led to a very impressive sort of control, extraordinarily effective within certain limits, and we are able to construct quite an orderly “picture” or “concept” of this uncertain “reality.” As Hawking says, the quantum laws of physics have been “the basis of modern developments in chemistry, molecular biology, and electronics, and the foundations for the technology that has transformed the world in the last fifty years,”<sup>16</sup> referring of course primarily to digital computer and laser technologies. In addition, the visionary inclinations of many physicists has tended more and more toward the conclusion that the universe is not only orderly and self-determining, but it evolves in ways that tend to produce consciousness. It would seem that Niels Bohr, in formulating the principle of complementarity as a corollary to the uncertainty principle, had given a nod to the idea with which we began: that the contrariness of Nature is quite meaningful in its results. Bohr’s principle suggests that both terms of any empirical duality, such as particle/wave, position/velocity, space/time, structure/process, order/chaos, stability/change should be recognized, measured, and considered holistically as aspects of a unity. Thus the uncertainty principle leads in fact to a more complete and complex grasp of reality.

### Evolution and Consciousness

Many scientists, including especially Capra, Prigogine, Penrose and others who have applied the principles of uncertainty and complementarity, analogically and metaphorically as well as computationally perhaps, in the domains of chemistry and

biology, have been led to the proposition that apparently stable structures in nature are the product of processes of constant energy transformations at all levels: subatomic, molecular, and biological. According to Prigogine's theory of dissipative structures, all physical systems, from electromagnetic fields to molecules, weather systems to amino acids, cells and organs to organisms, are self organizing and self replicating as a result of energy flowing through their systems. The structures of physical systems reproduce their own stable forms through constant structural interactions with their environment. Such self-making, self-sustaining structural transformations are on-going within and between organisms, according to this theory, exhibiting patterns of deliberate response and reaction, memory and choice, which are thought to be parallel to and indicative of mental processes, or intelligent behavior. The ability of organisms to co-exist and co-evolve, through processes of non-local energy field causation, whether at the quantum, biological or mental levels, and at moments of extreme disequilibrium to diversify or evolve new structures and processes of ever greater complexity and viability, are leading some scientists to conclude that the organization of life itself is in fact a kind of mental process. As Capra puts it in *The Web of Life – A new scientific understanding of living systems* (1996):

To understand the nature of life from a systemic point of view means to identify a set of criteria by which we can make a clear distinction between living and nonliving systems. ...the recent formulations of models of self-organization and the mathematics of complexity indicate that it is now possible to identify such criteria. The key idea of my synthesis is to express those criteria in terms of the three conceptual dimensions, pattern, structure, and process. ...I propose to understand autopoiesis, as defined by Maturana and Varela, as the pattern of life; ...dissipative structure, as defined by Prigogine, as the structure of living systems; ...and cognition, as defined by Gregory Bateson and more fully by Maturana and Varela, as the process of life. ...Autopoiesis (self-making) and cognition (process of perceiving and knowing) are two different aspects of the same phenomenon of life. In the new theory all living systems are cognitive systems, and cognition always implies the existence of an autopoietic network.<sup>(p.160)</sup>

Although these theories are still based on observable physical, chemical, and biological processes, and as such remain materialistic and structural theories, it is clear that the wave-fluctuations of this line of thought, from Heisenberg and Bohr to Capra, Prigogine, and Penrose, approach that knowledge of which Sri Aurobindo spoke, and perhaps herald a time when, as he said, scientific knowledge would reach conclusions similar to those of the Vedas. It seems that matter, life, and mind are in fact beginning to be understood as different formulations of one unknown Energy. But a strong reductionist bias is still evident, even in Capra's attempts to formulate a synthetic, unified theory of life and mind, and even more so in Hawking's positivist version of anthropomorphism.<sup>17</sup> Maturana and Varela, two scientists of consciousness whose work forms a substantial part of Capra's synthetic point of view, state the bias unequivocally: "as scientists we can only deal with unities that are structurally determined."<sup>18</sup> And in their interpretation of apparently conscious linguistic behavior, they state the qualifying paradigm "to operate in languages is to operate in a domain of congruent, co-ontogenic structural coupling."<sup>19</sup>

What this means is that what the observer perceives and interprets as linguistic behavior in animals is accompanied by a parallel but dissimilar underlying set of nervous and muscular system behaviors characterized as “structural coupling.” For these scientists, there is ultimately no difference between structural coupling and conscious behavior or “cognition;” the latter is reduced to the former.

The next step that Sri Aurobindo predicted, “at which stage of development the conception of material Force as the mother of Mind would not be able to endure,” has obviously not occurred. If it had, instead of reducing consciousness to structural coupling or an emergent quantum event, there would be the realization that Consciousness was the first principle, from which the structures and processes of the universe proceed, rather than being the penultimate outcome of those physical processes. This next step would make it evident that the reason why stable structures appear to evolve in matter by means of self-determining processes, and why patterns or forms persist without change even though everything of which they are composed is constantly changing, is that there is a Will in them, infinitely diverse and omnipresent, a will of self-manifestation and self-being, and not a merely physical evolutionary dynamism, whether inherently one of chance/necessity or of chaos/order.

This is a form of understanding that is of course more characteristic of philosophy than of science, especially if we look back to the time, in ancient Greece, and perhaps as early as Vedic India, when the distinction between these modes of thought was not yet clearly defined. Aristotle’s works are burdened throughout with the attempt to understand the relationship between form, which is apparently unchanging, and matter, energy, motion, which are the elements of change from potential to actual form. And at that time the distinction was also not being made between form as such, and form as *concept* derived from perceptions and observations of the material world; the idea that the material world is separate from mind, or consciousness, had not yet intervened in the history of knowledge. For Aristotle, who was a biologist, mind was a form of nature whose activity was to know and understand other forms like itself. And especially important to the history of knowledge, the idea had also not yet intervened that our measurements of matter, energy, motion – and on a macro level, patterns, structures, processes - tell us what “reality” is. For the ancient thinkers, the world of stable forms and values that we experience, and that the invisible physical micro-world of change upholds, was the reality. This inversion of the known and unknown, and the reduction of form to mechanical forces or subatomic measurements and mathematical probabilities has been precisely the work of modern scientific thinking.

It would be ironic indeed, if as Hawking and others seem to half-seriously suggest, the universe has evolved from an invisible world of Platonic forms to a world of Platonic solids, through the vast infinitude of the forms of cosmic life and mind, just so that physicists could reduce everything to mathematical probabilities, parallel universes, and imaginary dimensions of time. But Hawking’s colleague, Roger Penrose, seems to have reached a considerably more serious point of departure, and one quite pertinent to our present concerns. In his book *Shadows of the Mind – A search for the missing science of consciousness* (1994), Penrose states:

If Einstein's general relativity has shown how our very notions of the nature of space and time have had to shift, and become more mysterious and mathematical, then it is quantum mechanics that has shown, to an even greater extent, how our concept of *matter* has suffered a similar fate. Not just matter, but our very notions of actuality have become profoundly disturbed. How is it that the mere counterfactual *possibility* of something happening – a thing which does not actually happen – can have a decisive influence on what actually *does* happen? There is something in the mystery of the way that quantum mechanics operates that at least seems much closer than is classical physics, to the kind of mystery needed to accommodate mentality within the world of physical reality. I have no doubt myself that when deeper theories are at hand, then the place of mind in relation to physical theory will not seem so incongruous as it does today. <sup>(p.419)</sup>

Penrose argues in this book that consciousness – which he defines as awareness, understanding, and will or intention – will be explainable when physical science itself evolves its own theories and methods beyond their present limitations, because consciousness is beyond any possibility of computational understanding. And yet he believes that the ground of consciousness will ultimately be found at the interface between the world of quantum effects and the world of biological structures. While still adhering to the reductionism and structuralism characteristic of the scientific paradigm, he is able to foresee the possibility of an entirely new understanding yet to come: “For physics to be able to accommodate something that is as foreign to our current physical picture as is the phenomenon of consciousness, we must expect a profound change – one that alters the very underpinnings of our philosophical viewpoint as to the nature of reality.”<sup>20</sup>

Perhaps what this means is that the next quantum leap in consciousness, one foreseen by Sri Aurobindo as necessary in order to resolve the dilemmas of matter and mind, will be an even more disturbing paradigm shift than the ones already brought about by the new physics of the 20<sup>th</sup> Century. In Sri Aurobindo's interpretation of the Vedic cosmology, everything in the universe, from the physical to the mental plane, is an expression of the will-force of consciousness. Therefore it is possible that the non-computational interface between the quantum world and cellular structures theorized by Penrose, which brings about the “objective reduction” of quantum reality to the real-time world of phenomena that we know, is one level where consciousness-will can indeed be found. Penrose's intuition is that the phenomenon of objective reduction will be related to gravity; though the phenomenon must be a Force, it is likely to be one that is as yet unknown to science. To observe this phenomenon will require a movement of consciousness toward such an understanding, which is not currently a movement characteristic of science. At the beginning of his discussion of this possibility of scientific knowledge, Sri Aurobindo said, “If modern Materialism were simply an unintelligent acquiescence in the material life, the advance might be indefinitely delayed. But since its very soul is the search for Knowledge, it will be unable to cry a halt; as it reaches the barriers of sense knowledge and of the reasoning from sense knowledge, its very rush will carry it beyond and the



rapidity and sureness with which it has embraced the visible universe is only an earnest in the conquest of what lies beyond, once the stride is taken that crosses the barrier.”<sup>21</sup>

The “stride” that Sri Aurobindo hints at here, and which he refers to in the same context as being “attainable by a supreme effort of consciousness” but also as “escaping the grasp of our thought and speech, instruments which proceed always by the sense of difference and express by the way of definition” implies another methodology than the one normally employed by science, which is always based on observation of the external world, on “sense-knowledge”, and on reasoning from that knowledge, even if it is sometimes accompanied by a more global phenomenon of inspired seeing. The proposed methodology entails a process often referred to by Sri Aurobindo as a transformation of consciousness. Vedic knowledge apparently used that method and was of that type. But it was at the same time not “other worldly.” It was, however, “spiritual knowledge” achieved by a supra-mental consciousness which can know the world from within. It is knowledge of the Self, which is one with everything in time and space because everything is essentially That. This is obviously a rather mystical view of things, and yet the philosophy of evolution proposed by Sri Aurobindo, in which consciousness and force, spirit and matter are complementary, non-dual polarities at each level of existence – physical, vital, mental, and spiritual – has as its foundation precisely this premise. And such a theory is in fact consistent with the underlying connectedness and evolutionary self-determination of everything in the universe, as proposed by quantum physics. What is missing from that theory is the principle that would explain the emergence of a highly ordered self-determining physical universe in the first place, and then the emergence of consciousness from such a material base. Sri Aurobindo’s basic argument for the evolution of consciousness in a material universe is that it could not happen from an inconscient base; consciousness must be a fundamental principle of the universe itself in order for it to emerge; it is “a self-involution of Consciousness in form and a self-evolution out of form.” Therefore the fundamental complementarity of consciousness-force provides an explanation at every level of the order that exists in the observable universe, and of every other complementarity that we can identify as being essential to an adequate understanding of things. In this vision of reality, the ancient and modern dualities that have always presented insoluble paradoxes, such as form and substance, stability and change, chaos and order, life and death, self and other, are finally resolved into unities rather than contraries.

Do the current limitations of our knowledge therefore indicate something essential about the limited nature of “mind,” or do they indicate an essential indeterminacy and consequent unknowability in the nature of “reality?” Both of these questions, surprisingly, must be answered in the negative. The sense mind, the rational mind, and the inspired imagination, etc., as we know them, are limited, but the limitations are evolutionary, temporal, structural limitations; they are not essential. And the indeterminacy of process, beyond the conservation of structural histories and patterns of adaptation, especially at the point of disequilibrium where novel forms can emerge, are not essentially unknowable simply because they are non-computational. Reality is infinitely complex but it is also only What Is; the evolutionary structures at every level of matter, life, and mind are only structures *of consciousness*, knowable by the Self through

Identity. But that requires the evolutionary emergence of another potential of consciousness beyond mind, which Sri Aurobindo chose to call “supermind.” In his descriptions of its characteristics, he speaks of the necessity of realizing in oneself an extraordinary force of concentration, an absolute stillness, and a cancellation of the mind’s normal patterns of reactions and responses to external stimuli. It is a process in which the personal will merges with the universal Will, the individual mind with universal Consciousness.

So, if we ask then, Is reality Finite or Infinite? the Unchanging or Change? Being or Time? Spirit or Matter? Substance or Form?, the answer in every case is “both,” although any particular definition will depend on the point of view, just as Heisenberg said. And after a century of unparalleled advances in both scientific and spiritual knowledge, a scientific mind like Prigogine’s can therefore now think, along with the mystic philosopher:

Each great period of science has led to some model of nature. For classical science it was the clock; for nineteenth-century science, the period of the Industrial Revolution, it was an engine running down. What will be the symbol for us? ...In some of the most beautiful manifestations of sculpture, be it in the dancing Shiva or in the miniature temples of Guerrero, there appears very clearly the search for a junction between stillness and motion, time arrested and time passing. We believe that this confrontation will give our period its uniqueness.<sup>22</sup>

During the brief period of historical time known as the 20<sup>th</sup> Century, as the discoveries of the new physics were taking place, and Sri Aurobindo’s discovery of the supermind was being formulated, in the forefront of the “human sciences” also many barriers of consciousness were ceding: Husserl wrote *The Idea of Phenomenology* in 1907 and *The Crisis of European Sciences and Transcendental Phenomenology* in 1933. Freud published his theory of the three-fold structure of mind in 1923, Heidegger published *Being and Time* in 1927, Whitehead’s *Process and Reality* was published in 1929. And one could go on: Merleau-Ponty’s *Phenomenology of Perception* in 1945, Jean Gebser’s *The Ever-Present Origin* in 1949/53, Sri Aurobindo’s later works, 1940-50, Heidegger’s writings on technology and language, 1950-60, to the newer physics of the 1960s, the post-structural philosophies of the 1970s, the quantum biology of the 1980s, and the super-technology of the 1990s.

As we shall perhaps see, if we explore in greater detail the explosion of ideas that characterized this epoch in the development of thought, within the context of the century’s equally dramatic “outer” developments, the arc of the entire project of human consciousness throughout may appear to have been delimited by one evolutionary formula for human advancement: to reconcile Spirit and Matter. To achieve the realization of their unity; to consciously perceive the stillness and force that combined constitute the essence of the infinite energy of existence; and to know directly by a “supramental consciousness” - one with the world it perceives - that unity and diversity, identity and difference are the principles of all Being in Time, could be the outcome of the pursuit of Knowledge, as Sri Aurobindo indicated. But for it to be so, he said, the

human mind “must traverse the degrees which our inner consciousness imposes on us and, whether by objective method of analysis applied to Life and Mind as to Matter or by subjective synthesis and illumination, arrive at the repose of the ultimate unity without denying the energy of the expressive multiplicity.”<sup>23</sup> A study of the 20<sup>th</sup> Century in relation to the vision of Sri Aurobindo should reveal the progress made along this arc of potential human development, and also give us a clear indication of the distance still to be traversed if we are to complete the journey.

## Physics and the Philosophy of Evolution

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3. Sri Aurobindo (1970ed.), *The Life Divine*, pp.1-5
4. Ibid., p.12
5. Sri Aurobindo (1970ed.), *The Synthesis of Yoga*, p.1,6
6. Sri Aurobindo, op.cit. (LD), p.14
7. LD, p.14
8. LD, p.14
9. LD, p.14
10. Fritjof Capra, *The Turning Point*, p.90
11. Ilya Prigogine and Isabelle Stenger (1984), *Order Out of Chaos*, p.226
12. Stephen Hawking (2001), *The Universe in a Nutshell*, p.12
13. Capra, op.cit. p.89
14. Capra, op.cit., p.81
15. Capra (1996), *The Web of Life*, p. 39
16. Hawking, op.cit., p.26
17. Hawking (p.85) gives this rather droll characterization of the anthropic principle: “While it may be that intelligent beings can evolve without galaxies and stars, this seems unlikely. ...The anthropic principle says that the universe has to be more or less as we see it, because if it were different, there wouldn’t be anyone here to observe it.” And although he frequently equates the physical universe with “reality,” he qualifies his position as a positivist in a manner that is pertinent here (p.59): “From the viewpoint of positivist philosophy, one cannot determine what is real. All one can do is find which mathematical models describe the universe we live in. It turns out that a mathematical model involving imaginary time predicts not only effects we have already observed but also effects we have not been able to measure yet nevertheless believe in for other reasons. So what is real and what is imaginary? Is the distinction just in our minds?”
18. Humberta Maturana and Francisco Varela (1987), *The Tree of Knowledge – The biological roots of human understanding*, p.96
19. Ibid., p.211
20. Roger Penrose (1994), *Shadows of the Mind*, p. 406

21. LD, p.13
22. Prigogine & Stenger, op.cit., p. 22-23
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## 2

### Science and Philosophy

#### The language of reason

We have the habit of reasoning. Especially, we reason about the cause and effect relations of the things. Philosophy throughout the past 2500 years may be said to have been a long commentary on this activity, how it works, and what “truths” it has produced. Science, during the same period, but most prominently since the 16<sup>th</sup> Century, has been the systematic application of this way of thinking and knowing to the material world. By this, we mean the world of tangible, observable human experience. Many terms from classical Greek thought have defined this activity of reason, such as *logos*, translated as logic and science, *noesis*, translated as thinking and knowing, *episteme*, truth, *theoria*, reasoned knowledge and mental vision, and so on. Our concepts and understanding of how we think, how we manage to know and understand things, as well as what we actually know, have been the result of thinking about, and commenting on these processes, especially as defined by Plato and Aristotle, in 4<sup>th</sup> Century Athens, and as interpreted after their rediscovery in the 12<sup>th</sup> and 13<sup>th</sup> Centuries by the Catholic doctors. The modern European mathematicians and scientists, such as Descartes, Newton, and Leibnitz studied these ideas in Greek and Latin, as did Hume, Kant and Hegel, and in the 20<sup>th</sup> Century so did Husserl, Heidegger, and Sri Aurobindo (who was a highly accomplished scholar of Greek at Cambridge, before mastering the classical Sanskrit language and tradition of India).

As we consider the status of science and philosophy today, and reflect on issues such as those raised by a survey of the current debates of physics, biology, and philosophy, for example, it is important that we reconsider the history of human thinking on the questions of knowledge in general. For when a question such as What is consciousness? is raised, as is being done more and more frequently within and between a variety of different disciplines, and we find ourselves thinking within a conceptual paradigm of, for example, uncertainty and complementarity, or identity and difference, we must realize that neither the problems being raised nor the language being used are new; we may have access today to more information, to more sophisticated research tools, and to a larger span of history, but the terms, the concepts, and the problems posed have been around for a very long time. The basic problems of existence, and the perspectives of human consciousness and knowledge with which we are concerned today, are perennial and global. And therefore, if we pose a set of definitions, such as those below of “consciousness” for example, we should expect to find that they can be fairly easily understood by anyone

with a reasonably mature mind and developed linguistic faculty. It should be especially easy for us, of course, since we have already prepared the soil.

Tentative definitions:

**1. Consciousness** is a word often used to denote awareness; we humans are somehow aware of what's going on in and around us, at least superficially; we perceive forms and patterns of things and we give them names; we remember them and pull them up into our 'consciousness' almost automatically for all kinds of practical daily actions. The close association of consciousness and action has led philosophers, in the history of both western and eastern traditions, to mention the will as a part or function of human consciousness. Generally then, consciousness conventionally includes our awareness of things, our perceptions, our memories, our thought processes, like the logical associations that the mind sort of naturally performs, our feelings, judgments and choices, and other mental activities such as imagination, reasoning, vision, inspiration, foresight and planning. And then it is also our ability to focus our energy on achieving the goals we envision. But this broad category of mental functions is sometimes also referred to as "intelligence," in the Western tradition. (And we are often in fact not really conscious of it when it is working.) But what this mind or consciousness actually is, where it is located and how it works – rather than what it does – is the more difficult question. Neuroscience is trying to find out through measuring chemical and electromagnetic changes in the brain, etc.

**2. Consciousness** is the most central idea in Sri Aurobindo's philosophy, but he uses the term very broadly. For him it is the essence of everything, and he therefore asks us to get away from associating its meaning with human mental awareness. All the biological organization of life, from the functioning of cells and organs to the behavior and evolution of species and ecologies is apparently an "intelligent" process though not self-aware as it is in the mind, and even the underlying motion of energy and matter which forms the basis of biological and mental forms and forces is characterized by a high degree of "order" and therefore seems to be an effective energy of consciousness and will. Sri Aurobindo's *theory*, which is based on the Vedas, is that chit-shakti, consciousness-force, is what constitutes matter, life, mind, as well as the higher spiritual planes of truth-light-bliss beyond. His *argument* is that our mental consciousness could not have emerged from matter and life if it wasn't already an inherent principle of existence on every plane. His yogic *vision* is that Consciousness-Force at the highest level is everything that is, whether potential or actual, and it brings out of itself all the levels and forms and forces in time and space by a process of evolution. For him, the transformation of consciousness means raising the vibration-vision-force of human awareness to a level of universal consciousness-force where everything that we know, will, do and experience would be divine. SA says we can only understand consciousness through consciousness itself, not through measuring physical and biological phenomena.

There is nothing in either of these definitions that will not be understood by an "Aristotelian" of either the classical or medieval variety, nor by a 20<sup>th</sup> Century student of

either science or philosophy. For the western reader of the 2<sup>nd</sup> definition it might be helpful for us to further qualify and define the Sanskrit terms, as we have the Greek. For example *chitta* is mind and the nervous activity of response and perception; *shakti* is energy or force; and some other related terms of this psychology of knowledge such as *buddhi* or intelligent will; *purusha* or observing mind; and *prakriti* or nature, as in all the energy formations of the physical, biological, and mental processes of life. The idea of “yogic vision”, as opposed to theoretical knowledge, is covered by the term *vijnana*, which means a more holistic or global grasp of the truth of things, similar to the Greek *gnosis*. *Jnana* means knowledge. A science or field of knowledge in Sanskrit is referred to classically as a *darshan*, which also has the connotation of revealed understanding or wisdom, and its teaching or formulated principles is a *shastra*, similar to *doxa* in Greek. And there were several periods of highly sophisticated philosophical development in classical and medieval India devoted to the development of logic and metaphysics, which produced many systems of thought similar to those developed during the classical and medieval periods in the West. Consequently, we share a history of intellectual development, as students of the early 21<sup>st</sup> Century, that enables us to communicate without much concern about linguistic or cultural limitations; the concepts that we are using to explore human consciousness are common to most languages and are as natural to thinking as language is to speaking and writing. We shall, however, examine the meanings of words and concepts, as well as traditions, cross-culturally, whenever they present an opportunity for reaching a clearer understanding. What neither the Greek nor the Sanskrit traditions had, however, is the language of modern science, and of a world-view determined by such technological extensions of consciousness as the Hubble telescope and the electron microscope. When we speak of science and philosophy, therefore, and the ways in which the former has disrupted the traditional viewpoint of the latter, we may in fact be speaking more about different epochs and world-views in the history of human evolution, than about different disciplines. And to do this all we need is an adequate *lingua franca*, in this case English, and an enquiring mind.

Homepage > Catalog > Philosophy > Philosophy of the 20th century. Evolutionary, spiritual conceptions of life - Sri Aurobindo, Teilhard de Chardin and Ken Wilber in comparison. Essay, 2006. 43 Pages.Â - The Big Picture - The Evolutionary Process according to Sri Aurobindo and Teilhard de Chardin. - Sri Aurobindo - Basic Tenets. - Some Important Differences. - An Alternative View of Holism and Integral Thinking - Elmar Holenstein.Â With spiritual evolution goes often the idea of progression and development of the individual along, either after death or through successive reincarnations. Often ideas of a cyclical cosmos go along with spiritual evolution. There is the concept of progressive deterioration of the universe, sometimes also of the Fall. Drawing from the Sankhya system of Indian philosophy, Sri Aurobindo and The Mother expounded the notion of involution, as the reverse of evolution, which became a central feature of Integral Yoga. Though the notion of involution has existed for long in theosophy, especially in Indic systems of thought, Sri Aurobindo refined it, being influenced especially by the rapid breakthroughs in particle physics that the 1920s and 1930s witnessed. From Heisenberg's uncertainty principle, to Planck's discovery of energy quanta, from de Broglie's hypothesis on the dual nature of matter to Niels Bohr's revo Sri Aurobindo was a great political reformer and a spiritual master. This biography profiles his childhood, career, achievements and timeline.Â Aurobindo's inclinations to social reforms and evolutions can be attributed to his great-grandfather's close involvement in the Brahma Samaj religious reform Movement. At a tender age of seven he was sent to England and stayed there for fourteen years. Starting from St. Pauls School (1884), he attained scholarship and made it to King's College, Cambridge (1890). The Philosophy of Evolution in Sri Aurobindo and Teilhard De Chardin. Jan Feys - 1973 - Calcutta, Firma K. L. Mukhopadhyay. Educational Philosophy of Sri Aurobindo. Desh Raj Sirswal - 2010 - Centre for Sri Aurobindo Studies, Ambala City. Sri Aurobindo and the Theories of Evolution. Rama Shanker Srivastava - 1968 - Varanasi, Chowkhamba Sanskrit Series Office. Sri Aurobindo.Â Sri Aurobindo and Hegel on the Involution-Evolution of Absolute Spirit. Steve Odin - 1981 - Philosophy East and West 31 (2):179-191. Analytics. Added to PP index 2009-01-28.