

Science and the Ancient Wisdom

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The annual science seminar was held this year at Olcott, on November 4-5, 1983. Dr Ravi Ravindra, professor of physics and religion at Dalhousie University, Halifax and Dr Roger Jones, a professor of physics at the University of Minnesota were the guest speakers. Dr Renee Weber, professor of philosophy at Rutgers University participated and was the chairman of the conference. Following the seminar, there was an informal discussion in which participants were joined by Dr Ralph Hannon, Chairman of the Theosophical Research Institute, and Dora Kunz, President of the Theosophical Society in America. The report of that informal discussion follows and has been edited by Emily Sellon.

One of the questions which is very much in the foreground today is the relation of contemporary physical and cosmological theory to the theosophical world view. Numerous books and articles have been written suggesting that the fundamental principles shared by the ancient mystical/occult traditions, both in the East and in the West, are finding new expression and new relevancy in the most recent developments of modern scientific theory. The question remains however: how are these two paths to knowledge interrelated and how widespread can be the influence of the ancient tradition on contemporary thought?

It is obvious that the majority of those working in the physical and allied sciences have no interest in the deeper questions which pertain to the meaning of contemporary physical theories in terms of what might be called human enlightenment or understanding. For example, Bohm's interpretation of quantum phenomena suggests that since every function contains information about the whole universe, another level of order must be implied – an implicate order. The theory further suggests that the implicate order may be either analogous or equivalent to consciousness (or represent a different version of it), which in turn implies that the physical universe and the realm of mind are in some way analogs of each other.

Bohm himself has only carried this correspondence to the point of saying that the physical and mental realms have their roots in something which lies beyond both and which shades off into the infinite. This is a fundamentally theosophical position. Of course, most physical scientists are working in the realm of the explicate order; that is, in the phenomenal world where the data are to be found, but his point is that quantum physics especially can only be understood through reference to a level of experience which is much subtler than the common-sense world, and that this subtler level, consciousness and matter appear to be aspects of the same domain, and thus not separate entities. This again, accords with the theosophical view.

Bohm also conceives of space as that which links or embraces us – within which all phenomena, including man, occur as little wavelets of energy within the enormously greater energy field of space itself – an energy of staggering magnitude. These little wavelets or configurations are mistakenly perceived as being singularities, separate and distinct from one another, whereas they are in reality a kind of phenomenal display of a deeper and more comprehensive order of which they offer momentary glimpses. In such a view, space links, rather than separates, all entities. This radical

interconnectedness extends itself to mind and matter, to consciousness and the physical world, but it does not reveal itself in the explicate order where most physical science operates.

When Bohm was once asked whether there was a degree of consensus in the community of physicists, he replied that there was general agreement about facts, but not about the interpretation of facts. These are usually written off, because there is no cash value in prediction. He regards the current lack of interest in looking behind the equations toward the reality to which they refer as constituting the greatest danger to the future progress of physics. All the great theoreticians of the past, from Bohr and Heisenberg to Einstein, developed imaginative models and asked seemingly impossible questions. But today, pursuit of ideas which have little immediate relation to specific problems is frowned upon, and thus he believes the current generation of physicists is becoming more and more mediocre, content to take the safer routes and leave the difficult questions unanswered. This, according to Bohm, has suppressed the philosophical dimension in physics and put aside the larger questions of meaning and significance.

To some degree, this situation would seem to answer the opening question negatively. On the one hand, the notion of a participatory universe, which has some standing today, as well as the commonality of physical substances throughout the cosmos, point toward what the ancient tradition has called the microcosm/macrocosm doctrine, and to the Hermetic theory of “as above, so below”. Within science also, there is most certainly a drive for synthesis, a concerted attempt at simplifying theoretical models in the hope of arriving at one grand unifying theory. Elegance and simplicity have always been the goal of physical theorists, no less than philosophers; now as always, the search continues for some way of expressing the idea of all and everything in one single principle – either in one equation, or in one name for God – which can stand both as the explanation for, and the foundation of the whole world.

Bohm is not alone in his search for the ultimate wholeness of the world. When the total enterprise of nature, including man, is considered, it seems to reveal a teleological drive towards the achievement of greater and greater wholes. It is as though the universe were tending towards a resolution into oneness. To those who begin to appreciate this tendency in nature, it has a value which transcends the aesthetic and yields an intuition of some deeper reality. The connection between such an apprehension and the doctrines of the ancient tradition is of course apparent: the ancients have always claimed that notwithstanding appearances, everything is not linked but in fact fundamentally one.

Here a question arises. The ancient traditions say that truth or reality can only be comprehended through access to certain higher states of consciousness. Are we therefore saying that those who can understand the philosophical implications of quantum mechanical theory are in a higher state of consciousness? The great traditions are full of such statements as “I and my Father are one”, or “God is love”, or to take an example from the *Bhagavad Gita* “Atman is Brahman”. Now many people can repeat such statements and frequently do, but this does not necessarily make them convincing to the rest of us. On the other hand, to a person in a certain state of consciousness who has fully realized the meaning of such a statement, it is absolutely and unshakably true, and therefore carries a degree of authority. What is more, this truth can be shared with anyone else who has attained the same state of consciousness. Similarly, if a physicist says that every minute particle is a hologram containing the whole of the universe, the effect can be much like that of talking about God as love. The statement will lack meaning for most people either because they do not grasp the theory or because they cannot

make the intuitive leap which will put them in touch with the level of consciousness where the meaning resides.

This may seem a somewhat extreme example, for it is obviously easier to appreciate a tendency towards wholeness or oneness in the world (even if one does not understand the mathematical terms upon which such wholes are achieved) than it is to justify such a statement as “God is love” in the face of so much evidence to the contrary. In other words, beneath the multiplicity which nature displays so lavishly, every existent being senses or intuits some degree of interconnectedness or unity. But to perceive God as love requires a different order of consciousness – one perhaps which can share in that love. If a person has never experienced love in his life, the statement has absolutely no meaning. Thus, if *any* statement is to carry a degree of truth for us, it must resonate with some inner experience in which we participate. And to this degree it is evidential.

The point here is that religious truths exert moral or ethical force to the degree that we respond to them, and this response is far from merely being intellectual acceptance. We certainly do not judge their truth by making critical analyses and comparisons between for example, Plato’s Ideas and the teachings of the Upanishads. The felt truths which they embody are not confined to the rationality of the statements, but rather to what they imply – what they point towards. When we come to scientific statements, the question is whether they are competent to deliver the kind of insight we are talking about without embodying a different effort, one which transcends the purely intellectual. This of course can be said to apply to all knowledge and not merely the achievements of the sciences. Knowledge becomes transformative and leads to a higher state of consciousness only when there is a place for intention or moral effort within the discipline. In other words, knowledge cannot change us unless we make an effort with respect to it which goes beyond pure intellectualism. The question we are raising here is whether the sciences can offer a new approach (or confirm an old one) which will induce people to change their behaviour and their attitudes in the direction of a more altruistic, more encompassing perception of life.

In order to try to answer this question, we should perhaps step back a little and look at the achievements of science as a whole. One of the most striking of these is the amazing generality of the physical laws which have been developed over the last three or four hundred years. They have established for mankind, beyond all doubt the overriding regularity of nature, which suggests an underlying tendency in the cosmos toward order. This order prevails unchanged by the often unpredictable confusion of the so-called commonsense world. Therefore, we should never imagine that ordinary language or the ordinary view of the world represents any finality with respect either to nature or to our own experience. Acceptance of this situation should go some way towards reconciling the scientist to the mystic’s use of paradox and contradiction in describing his own worldview. This is especially so now that quantum and particle physics and relativity have their own paradoxes to contend with, for the language of science today is just as parabolic and metaphoric as the myths and legends embedded in the religious traditions. Capra among others has made a point of the fact that ordinary language and commonsense articulations of the world are very limited in their ability to convey certain realities which mathematics and other symbolic languages have been able to describe quite accurately. Mysticism therefore cannot be dismissed merely because its terms of reference are different from the rules of ordinary language.

Another point to be noted especially with respect to quantum mechanics is that it leads to a different view of logic, a situation which is of course associated with the limitations of language,

since language is founded upon a certain kind of logic. In this case the experimental data have produced the “facts” of quantum mechanics, and they reveal that reality goes beyond the bounds of ordinary logic. Ultimately one is forced to choose between the logic and the data; and in such case logic is of course the loser. Naturally every effort is made to try to bring language, logic and the data together, but if it turns out that this cannot be done, language and logic must be abandoned in favour of facts. The same privilege can be claimed in the case of mysticism, which is based upon experimental data – the “facts” of mystical experience – and cares little for the claims of ordinary logic, though it may and doubtless does have a logic of its own.

It can be said with some justification that quantum mechanics does not abandon or contradict ordinary logic (which works pretty well at the ordinary level) but rather has recourse to another level of reality with a different kind of language and another form of logic – quantum or free-value logic. If this is not logic to most people, who then is to be the judge of what is “right” or “true”? If there are different rules for the macro- and micro-worlds, can either of them be said to describe reality? The question seems to be analogous to the opening statement of the *Tao Teh Ching* which says that the Tao which can be named is not the real Tao. In the context of our problem, this would be tantamount to saying that neither the reality which can be expressed in equations nor the reality which can be described in words is the true reality.

It would probably be fair to say that different levels or orders of reality have their own kinds of language and logic, and none of these exhausts reality. Contemporary physics and especially quantum mechanics are very useful in that they free us from the shackles of the linear logic which is embodied in ordinary language, and which prevents us from appreciating the ambiguity and paradoxical character of life. This kind of linear either/or thinking was the heritage of nineteenth century science, which held that nothing was real that could not be measured. It reached its nadir in Lord Calvin’s remark that unless a theory could be shown to work in mechanical terms it could not be true. The opposite extreme was reached when the physicist Hertz finally pruned matter away entirely, and said that the electromagnetic equations stood for nothing but themselves. One can find fault with his remark and still appreciate its liberating effect, for he was objecting to the excessively mechanistic view that demanded to be told what gears and levers were responsible for the propagation of electromagnetic waves from one place to another. Thus Hertz’s remark constituted a conversion from a simpler to a subtler kind of logic – one which in turn has its own limitations that have to be overcome.

The effort which David Bohm and others are now making concerns the struggle to free ourselves from these subtler limitations. Bohm has pointed out that no matter how precise our mathematical equations become, by themselves they are incapable of delivering the meaning or the philosophical implications of what they stand for. It is very appealing to the scientific mind to make explanatory models, but there is always the danger that we may take the model as substitute for the reality. Nature itself is always tentative and provisional, and therefore all our models can be overturned as new knowledge makes them obsolete. Therefore our picture of reality must always leave room for growth and change – for the fluid character of existence. Yet this very fluidity, according to the ancient tradition, can only be understood by reference to the background reality which permits the dynamic and essentially creative character of the universe to emerge.

This fundamental dynamism has long attracted attention with respect to the development of cosmological theories. Einstein himself, in 1921 or 1922, proposed a solution to one of his equations

which showed that the universe at large is dynamic. However, he felt that this solution was too revolutionary and therefore must have been incorrect, and that is why he introduced the so-called cosmological constant (the speed of light) into the equation. At the time his theory was entirely speculative, and it was not until 1928 or 1929 that the first experimental proof of the expanding universe was obtained by observation of the recession of the galaxy. Thus we now know that the universe is evolving.

This conclusion of science fits well into the theosophical worldview, but how well does it agree with the ancient religious traditions? There seems to be no place in the Judeo-Christian cosmology for an evolving cosmos. Thus, when we speak about the coincidence of scientific and traditional theories, we must be careful to distinguish the specific traditions we are referring to. We may hold that the inner or esoteric wisdom within every tradition embodies the same fundamental truths, but each religion offers its own emphases and aspects of these truths, and the idea of an evolving universe is difficult to fit into the Christian world picture as it has been traditionally enunciated. It is true that an evolutionist could argue that the process of creation outlined in the opening chapters of Genesis is a sketch of a long evolutionary process compacted into the space of a few days – days which may be metaphors for immense epochs of growth and change. However a traditionalist probably would not feel comfortable with such an interpretation, and might argue that although creation itself was an act, and therefore dynamic, God's work was thereby finished insofar as the world was concerned.

What seems to be of importance therefore, in our efforts to perceive the coincidence of science and the ancient wisdom is to make a distinction between the external forms and beliefs of the great religious traditions and their esoteric (or theosophical) teachings. When we speak of the ancient wisdom we are obviously not talking about institutionalized religion, but rather about the understanding attained by those enlightened souls within every religion who have been able to experience or intuit those truths cut across all barriers of creed or custom. These were the true Gnostics of every tradition – the seekers of gnosis, or the wisdom which transcends knowledge. To them, it was not a question of belief but of experience; they were religious or mystical equivalents of the experimentalists who first broke the bonds of scientific ignorance. They may not have talked about an expanding, dynamic universe, but in their own way they pointed to a world which is forever fresh and new – a creative present which embraces all that was and is, and holds the possibility of all that can be. Science's concept of an evolving universe in which the long period of expansion may be followed by one of contraction also fits well with the Hindu conception of world epochs and universal cycles of creation and destruction.

Obviously, scientific theories do not have a perfect match in the cosmological theories of the ancient wisdom. It is more a question of discovering parallels and areas of mutual interest, as well as similar perspectives. Another interesting parallel is to be found in the contemporary interest in symmetry, which has become so fundamental to particle physics. Philosophically, the problem of symmetry is related to the ancient Greek ideal of a universe founded upon harmony and order and beauty – the concept that there is an underlying perfection which is impervious, or invariant, to all possible change. The principle of invariance that symmetry embodies presupposes a completely stable or static condition which is never met in nature, and therefore is ideal rather than actual. It is interesting however, that today symmetry is being placed at the foundation of modern physics with respect to the laws that govern it. When competing theories are in question, the one that wins out is that which not only has the qualities of simplicity and elegance, but also of beauty and symmetry. We wonder, in such a case, whether the theory that wins does so because it most nearly describes the way

nature operates, which always embraces an aesthetic dimension, or because of its aesthetic appeal to us? Or are these both the same?

This aesthetic quality, which symmetry embodies, has always been very important to the great innovative minds in science, from Kepler and Newton to Dirac and Einstein. To them, as to those who have followed them, the laws that codify the progress of scientific knowledge also are progressively expressed in simpler, more elegant, more beautiful mathematical equations. In this sense, Einsteinian relativity theory is simpler than Newtonian theory. But of course by “simpler” one doesn’t mean easier to understand, for often the simplest statements (such as “God is love”) are the most difficult to comprehend. Rather, they are simpler in the philosophic sense that they contain fewer assumptions, fewer functions, fewer independent axioms. In addition, the qualities of elegance and simplicity satisfy the drive toward unification which has motivated scientists ever since the Greeks first sought to identify the underlying *arche*, the origin of all the multiplicities which make up existence.

On the other hand, most physicists do not want to speculate about where the imponderables and paradoxes they encounter might lead. They will admit that much of quantum mechanics is strange and incredible, but they feel that speculation about such mysteries is a waste of time. For example, when a wave function collapses, it has no assignable place. One could say that there is no event; that nothing has happened since we are not able to record it. But in such case we must ask, does the universe have to wait for the physicist to decide whether anything is happening? It is like the old problem of deciding whether anything can be said to exist when there is no observer present to certify its presence. These questions are important because they revert to the role of the human mind or the human being in the world, a problem which is gaining more and more attention from scientists today. This is evidenced in such books as Fred Wolf’s *Taking the Quantum Leap* which postulates that the order of the universe is the same as the order of our own minds – not in the sense of Sagan’s claim that the only order of the universe is that which we impose upon it, but rather in the sense that the hidden order within the universe resonates within the human consciousness. This is certainly a theosophical view.

Another area where bridges between science and the ancient wisdom may be found is related to the age old problem of time. All the evidence which the mystics have offered us shows that time is intimately related to different states of consciousness. Even the most rigid scientist will admit that Einstein’s theory has proven that considerations of time cannot ignore space or matter or energy. The net result is that time is much more closely connected with what might be called substance, although most physicists do not care for such a word. In this context however, it signifies extension in space, and thus stated it would not offend even the orthodox scientist. Of course one could use the term much more loosely or speculatively as, for example in connection with what are called in quantum mechanics conjugate variables – pairs which result from deep-seated symmetries, such as time and energy, and momentum and position. Thus time and energy are related in general relativity, and they are also related, although in a different way, in quantum mechanics. These relationships could lead to interesting possibilities. They at least get us away from the traditional view of time as some kind of linear, sequential, determined connection between events. We now know that time is not an abstraction, but rather an integral part of the world-process.

The relativity of time seems also to point to the kind of experience that William James has gathered together in his *Varieties of Religious Experience*, wherein mystics have attested to the compression of what seemed to them eons of blissful experience into a moment of clock time. This

accords with the scientific evidence that time is different for different observers, although in this case it would be associated with rates of motion in space. However, this might not be stretching the analogy too far, since theosophical doctrine holds that consciousness is an analog of space, and thus different states of consciousness would have different perceptions of what goes on in space – of which time is a dimension. There seems to be very little literature on the analysis of time states in mystical experience, a subject well worth pursuing.

Even more interesting perhaps, is the fact that space is itself independent of time. For example, in one of Eckhardt's conversations with his pupils, he said that if they thought that Jerusalem was farther from him than they were, then they did not understand the nature of real experience. This suggests a kind of spatial unity as well as a temporal immediacy. Although it appears in mystical literature rather rarely, it seems to be related to the famous statement of Angelus Silesius that God is a circle whose centre is everywhere and whose circumference is nowhere. Lama Govinda also speaks of a similar transcendence of space limitations in his *Foundations of Tibetan Mysticism*.

This leads us to another possible bridge: the potentiality of space. One of today's speculations has to do with black holes, and the possibility that anything which falls into one would come out into another universe. This seems reminiscent of the idea that there is any number of different levels or domains of existence within the totality of space – that there is no edge to time, but rather boxes within boxes, all existing simultaneously. These universes are continuous, so that a person could in theory pass from one to another, rather like *Alice Through the Looking Glass*. Black holes are called a singularity in space, in the sense that ordinary mathematical processes or functions cease; they no longer work. This has fantastic implications with respect to time, because to the person falling into the hole the action would occur in finite time, but to the person observing the process from the outside, it would seem to take forever. It is an infinite extent of time converted into a finite experience.

It used to be thought that space was a vacuum dotted with separate island universes, but today space is viewed more as a plenum which can give rise to particles and energies that are created out of nothing at all. In other words, space, which is a state of non-existence, is also potential existence, and the particles that arise in it are manifestations of this potentiality. Thus all kinds of manifestations can arise out of space and fall back into it again – there is no limit to the possibilities.

So today science is beginning to regard space as the creative matrix out of which the cosmos is born. This matrix, like the akashic record of theosophy, contains all possible events – everything that could be, or might have been, or ever was. And this is fundamentally the teaching of the ancient wisdom.