

SCIENTIFIC KNOWLEDGE AND SPIRITUAL UNDERSTANDING

by

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The coming of a spiritual age must be preceded by the appearance of an increasing number of individuals who are no longer satisfied with the normal intellectual, vital, and physical existence of man, but perceive that a greater evolution is the recognized goal of the race. In proportion as they succeed and to the degree to which they carry this evolution, the yet unrealized potentiality which they represent will become an actual possibility of the future.

Sri Aurobindo
The Human Cycle

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The Knowledge Which Cannot be Told

There is a story told in the Chandogya Upanishad about the young Brahmin, Svetaketu, who, at the age of twelve was sent by his father to study the Vedas. To be a Brahmin--a member of the priestly caste--one must be born a Brahmin, but Svetaketu's family believed that one could not be a true Brahmin by birth alone. Svetaketu left and, having learned the scriptures, returned home when he was twenty-four. He considered himself very knowledgeable and had an extremely high opinion of himself.

His father said to him, "Svetaketu, you seem very arrogant. I wonder, have you yet asked for that knowledge by which you could hear what cannot be heard, and by which you could know what cannot be known?"

And then Svetaketu realized that even with all his learning he was not yet a true Brahmin. He sensed for the first time a deeper, richer understanding of what being a Brahmin might mean; that it would mean not merely adopting the name but being engaged in a study of Brahman, the Vastness, connected to that aspect of reality which is eternal and unmanifest.

This story could be retold in a modern context, perhaps about a young man who after attending university and gaining a great deal of scientific knowledge feels that he knows all there is to know and that he would know more with any advance of science. What could he say if he were asked if he understood the mystery of

life and knew the secrets of the universe? Perhaps he would say that he had never been told this knowledge. But can such knowledge ever be told? Can it be known?

How can the knowledge which cannot be told be known and how can the mystery be penetrated?

All of the spiritual traditions have claimed that man as he is, no matter how much he has learned, is incomplete--that he is not whole, not holy. This is expressed in many ways: it is said, for example, that man suffers, that he lives in sin, in ignorance or in bondage. Those who do not know the mystery of God are often spoken of in the gospels as: "seeing they may see, and not perceive; and hearing they may hear, and not understand." Mark 4.12 In each of the traditions it is stated that liberation or salvation from this level of existence can be achieved only if man becomes other than he is naturally, only if he becomes a new man and is reborn of the spirit by undergoing a *metanoia*, a radical transformation of consciousness.

Except a man be born again, he cannot see the kingdom of God. ...That which is born of the flesh is flesh and that which is born of the Spirit is spirit.

John 3. 3,6

In order to have new knowledge, a new being is required for knowledge is a function of being. When there is a change in the being of the knower, there is a corresponding change in the nature of the knowledge which is possible. We see this even in the ordinary process of growth which takes place in a growing child:

as he matures the kind of knowledge accessible to him changes. But the transformation involved in a spiritual birth is of a much more radical sort. It is not merely a result of learning new facts, of having more general or more inclusive theories, of building larger structures, of seeing smaller entities or even of having better habits. Rather, those who have achieved a new being, one which is not natural and which is not given at birth, apprehend the whole of reality differently. They are the saints and sages who have new eyes, new ears and who can see and hear what we cannot ordinarily see and hear. Although such a transformation is rare, it is possible for man by way a spiritual path.

The Reasoning Mind of Man

The characteristic which distinguishes man from animal is the possession of a certain quality of mind and the possibility of a corresponding quality of knowledge. This level of mind, which may be called 'the reasoning mind of man', is not only intellectual, but at its best, allows man to function as an intelligent, sensitive and perceptive being capable of producing change in the world. It refers to a certain quality of thought, feeling, perception and technical ability through which an understanding of the world and our relationship with it may be reached and by which what we understand is revealed.

Science, art and philosophy represent several ways of reaching such an understanding, although what is sought may be named in a variety of ways such as reality, beauty, truth or

power. In each of these fields--science, art and philosophy--the use of a different aspect of the mind is emphasized, although not to the exclusion of the others, and each relies on a distinctive methodological approach. The statements and the expressions from these disciplines are the knowledge which we as humankind have.

It is certainly not the case that all men are created equal. Not everyone has the same capacity of mind: some are more intelligent, others more sensitive or perceptive, while others may be more able to produce results. Talent, experience and training of the mind are all required in order to reach and to express the highest possible quality of scientific, artistic or philosophic understanding. The theory of relativity, the Taj Mahal, Bach's fugues, and Kant's Critique of Pure Reason are all products of this mind. But it is also the same reasoning mind which permits even a very rudimentary inquiry about the world, or a primitive expression of a feeling, or allows any question of value to be raised. So although the quality of this mind can vary enormously in different men, or in the same man at different times, animals below the level of man can never be scientists, artists or philosophers in any sense.

This capacity of mind is also responsible for results representing a great range of moral standards, from the good of humanitarian efforts in the world to the evil of the holocaust. The concerns of the reasoning mind vary greatly in size and scale, from a study of the universe to an investigation of sub-atomic particles, and from the development and use of the nuclear bomb to

the decision about the right colour of shirt to wear.

Although it is a very complex issue, this whole level of mind can be characterized by the ability to separate whatever is seen from the process of seeing, and thus to regard what is seen as an object. This is so whether what is seen is external, like a stone, a diagram or an electron, or whether it is internal, such as thoughts, feelings and sensations are, or whether what is seen is the observer himself. Self-consciousness, in the sense one can be aware of oneself as an object and of the things which go on in oneself, together with conceptualization, the naming of objects, memory, judgement, and reflection are all made possible by the functioning of the reasoning mind. It is because we have this level of mind that we have the particular knowledge of the world which we have.

We do not always behave with the kind of objectivity which enables us to separate ourselves from the objects of our perception and thought. There are occasions, more or less often for each of us, when we are lost in a situation, when we do not see what is going on and therefore react in either an instinctive or a habitual way. This sort of response is often spoken of in the vernacular as acting absent-mindedly or blindly, although both mind and sight are present in the physical sense. The sight which is lacking in such an instance, when we operate with less than full human potential, is the sight made possible with the reasoning mind of man. I would suggest, although I do not wish to defend this position here, that this more mechanical way of being

is the usual state. It is difficult to act effectively, or to take thought, or to have sensitivity or to be perceptive and when all of these function simultaneously it is indeed a cause for celebration. The reasoning mind of man allows a wonderful and valuable relationship with the world which has infinite possibilities and which needs to be and can be nurtured and developed.

Scientific Knowledge

In the whole wide and wonderful kingdom of the reasoning mind, science has become the queen. She has become so because of the power that can be realized with the application of the results of scientific knowledge. The prediction and control of phenomena which science allows can be used to satisfy, as far as possible, the fundamental human wish to obtain what we need or desire and to avoid what we dislike or fear. With every advancement of science a greater likelihood of satisfaction is anticipated, a greater power is expected. Science has already given us immense power. Through the amazing achievement of scientific knowledge men have walked on the moon, smallpox has been eliminated, men have been brought back from the dead, and weapons are available which could destroy the nation of any of those whom we fear. What could be more seductive?

The possibility of prediction and control is guaranteed by the very process by which scientific knowledge is produced. Among other requirements, a statement of scientific law is accepted as true only to the extent that, based on the observation of previous

events, its application can be used to successfully foretell what will happen in any one controlled situation. Thus, if the relevant laws of causality are known, then insofar as the causes can be produced or avoided, there is a corresponding control of the results. Science is concerned with the laws of the process of causality--of what follows what; and the secret of the power of science consists in the fact that a knowledge of these laws can be used to effect changes in the world which will be useful for our purposes. What our purposes are or what they might be is another question.

The public nature of scientific knowledge has always been regarded as an important characteristic of its objectivity. In order to eliminate the influence of what is merely personal, all scientific observations are required to be publicly verifiable; that is, given the same experimental conditions they must be repeatable by another who is equally competent. The quality of the person observing is not relevant. In fact, a mechanical or electronic instrument which can take the appropriate measurements is likely to be more reliable than a human since it does not have unpredictable personal idiosyncrasies. As well what is to be observed must also be quantifiable in order to remove the need for any subjective judgement. Any scientific theory or hypothesis must also satisfy the requirement for publicity. A theory or hypothesis must be capable of being formulated so that it could be understood and verified by others of equal competence and training, and it must be consistent with and related to the whole body of accepted scientific knowledge; otherwise it cannot be

considered reasonable.

In science what can be said to be true and, therefore, what can be known is limited to: facts which are empirically observable; statements of laws which can be used to predict events; and theories which can explain coherently a large number of facts and laws. No revelation or insight will be accepted as true or as knowledge unless it satisfies all the conditions of verifiability established within the scientific process. Thus for science, there can be no knowledge except scientific knowledge. This seems a terrible conclusion, but of course it must be so. It does not follow from this that scientists can have no knowledge except scientific knowledge. Only those scientists who acknowledge a larger truth than scientific truth, whether such a possibility is or could be articulated, can have other knowledge. Similarly, only those who acknowledge a larger truth than the reasoning mind of man can have, could have more knowledge. Only when Svetaketu suddenly realized this possibility as his father questioned him was he able to receive a teaching of another order of knowledge.

Science, as well as demanding objective criteria for the gathering of data and the testing of claims, is objective because it studies objects--large and small, internal and external, visible and invisible. It is concerned with the properties of matter and energy and with events which involve the movement or change of matter. Physics is the most fundamental of the sciences because the objects of study are the basic components of matter

and energy and the laws which govern the relationship between them. Since everything which can be investigated is made up of matter which has energy of some kind, the truths of physics are considered to be the most general and the most universally applicable.

Yet some of the objects which are formed of matter and which have energy are also alive. The science which studies these objects is biology, the basic unit of which is the cell. In both physics and biology the presence or the absence of life is exclusively a matter of classification: some things have the property of life, others do not. Those things which are alive are studied as if they were dead matter. In fact it is more correct to say that they are seen to be merely matter, organized to be sure in a complex way. It is assumed that from this complexity the characteristic properties and variety of life arise, yet an increase in complexity is only a quantitative change and not a qualitative one. So although biological substances and processes are regarded as more complicated than simpler physical materials and events, there is a subtle implication that since physics investigates not merely that which is common to everything but is engaged in the study of the basic components of which everything is ultimately made, it knows or might come to know about everything, and thus biology is really a branch of physics.

If science does not acknowledge that the presence of life indicates the existence of a radically different category of

material, rather than being another property of the same material, then it remains basically reductionist and must always conclude that there is nothing else to know about except physical matter and the laws which govern its behaviour.

Just as living beings often are regarded as if they are the same as inorganic substances but with different properties, those higher level beings which have an animal nature or those who have a reasoning mind are often considered to be merely physical material possessing certain properties which arise from the increasingly complex organization of that material. Although the assumptions this attitude springs from are not necessary for a scientific inquiry the materialistic perspective has become the predominant view of modern science and has come to seem to be the only possible one which a reasonable scientist could hold.

Scientific methods of investigation and of theoretical explanation can be and are applied to those things which exist at the level of animal life and at the level of the human mind. The resulting branches of science--zoology, medicine, psychology and sociology--have different domains, yet with an assumption of scientific materialism, they can only be branches of physics in the same way that biology is.

From another perspective, which also regards the emergence of life as completely unaccountable and anomalous yet understands that those things which are alive or which are dead, having been alive, comprise another kind of substance than matter which is not

and has never been alive, physics could be regarded as a science which is true in those cases where there is no life or in the cases where those things which are alive can be treated as if they were not. From such a perspective physics is really a special case or a branch of biology.

Similarly if the levels of life with animal nature and with a reasoning mind are understood to represent different forms of existence from the levels of the simplest classes of life or of matter, then it is clear that a knowledge of the physical substances and the laws of their interactions is a very partial knowledge. All spiritual traditions have considered that the physical sciences are only concerned with a very small part of the world to be studied and learned about and moreover that the knowledge about the world which is reached through the scientific undertaking can be said to be true only within a very limited context.

Objective Knowledge

Modern scientific knowledge is essentially objective knowledge and it is therefore a knowledge *par excellence* of the reasoning mind of man. Because of the great success of the scientific method it has sometimes been assumed that the particular way of seeing objectively which has been developed and codified within the sciences is the only way of reaching objective knowledge, but not all objective knowledge is scientific knowledge.

Although scientific knowledge is impersonal knowledge because

of the need which has been perceived to eliminate the subjective element of observation and judgement in gathering data or in verifying hypotheses, every man, every woman, and every scientist has more knowledge than scientific knowledge, but which is not verifiable in the same impersonal way that scientific knowledge is. That which is sensitive or perceptive or thoughtful within us may have knowledge which is entirely reasonable, produced by the reasoning mind of man about the world which is its object. This knowledge may be expressed in many ways other than by statements of empirical fact and theoretical explanations about them. Knowledge may be manifested, for example, through artistic expression of all sorts, through philosophical reflection and in relationship, both between individuals and within the larger societal structure.

Value judgements, philosophical theory and aesthetic considerations may be merely personal, but they may also be supra-personal; that is, they may express not only selfish concerns and interests but they may represent and call for the highest standards of behaviour, thought, feeling and perception. At their best, they seek what is good, beautiful and true, whereas science seeks what is real. Philosophy and art are objective both in the sense that they seek to understand and know about the world and our situation in it and in the sense that they have standards which are not merely personal.

Einstein wrote of the role of science in ascertaining what is, in determining how facts are related and conditioned by each

other, yet he saw clearly that science could not determine what the goals of human aspiration should be. He realized that value judgements and ethical concerns remain outside the domain of science but that they are always necessary. The feeling he had which arose from his deep conviction of the rationality of the universe and the awareness he had of the marvellous order revealed both in nature and in the world of thought he called "a cosmic religious feeling". It was this sense of wonder which he felt inspired men in their work. Such an appreciation of the world constitutes an artistic relationship with it rather than a scientific one. It is not therefore an invalid one, but a different one.

Many other great physicists, such as Heisenberg, Planck, Eddington and Schroedinger, have also understood that the statements which can be made by modern science are valid only within a limited framework. Those scientists who have worked at the frontiers of science are the ones who can best see the limitations of science, both because they have direct experience of its boundaries and because, in general, they have reached such a position due to an excellent quality of mind.

While science has limited itself to a study of what is material--of the fundamental particles of matter, philosophy and art do not have the same limitation. They are generally not materialistic in the way that science is, although they may be, or it may be claimed that they are vitalistic, idealistic or personal, terms which are frequently used in a derogatory manner

by those whose make the assumption of materialism.

Science, philosophy and art are all produced by that capacity of mind which is able to regard what is seen as object yet they are different enterprises with different approaches even to the same thing. If the object of inquiry were a particular man, a scientist, an artist and a philosopher would treat him very differently. The scientist would subject this person to experiment, take measurements, and gather data from which to draw conclusions based on theory and hypothesis; the artist would try to see his essential nature clearly and express it; and the philosopher would wonder how he could know about this person and what he could say truly about his position in the world. A psychologist, for instance, could engage with this person scientifically, artistically or philosophically, or perhaps in a way which combined these perspectives.

Whereas science is engaged with a discovery of the natural laws which govern the process of causality, art is concerned with an appreciation of all forms perceived in the world, and philosophy is interested in the evaluation of standards and methods, in ethical and moral considerations and a reflection upon the possibility and limits of the situation. There is far more objective knowledge possible for man, who possesses reason, than scientific knowledge alone.

The knowledge of the world available to man as he is has infinite variety, unlimited possibilities for discovery, and a

continuous need for improvement of standards and techniques. Within the scope of this knowledge there will never be an end to what can be gained. We might well be satisfied to stay within this realm, striving for more and more knowledge and more and more power, unless we are faced with some questions which cannot be answered from within this place, no matter how extensive our knowledge. These are the questions which have always been called ultimate questions, such as 'Why is it so?', 'What purpose might we serve?', 'What is death?' or like the one which Svetaketu was asked by his father 'Can you hear what cannot be heard?'.

Or, having heard of or having had the experience of being different, of knowing differently, in such a way that what is known is not a matter of question and answer, of argument and proof, then we can no longer be completely satisfied with this way of knowing, this way of being.

Spiritual Knowledge

There are two kinds of spiritual knowledge and it is important to be clear about the distinction between them. One kind of spiritual knowledge is a knowledge about the spirit as object which can be gained by the reasoning mind of man. The object of study, of inquiry, of attention in this case is what may be called spirit, which has a subtler quality than even an intelligent, sensitive, and perceptive mind and which is said by the sages of all traditions to inform all levels of existence and materiality and to be the origin or the root of all there is. Before any study of the spirit can be undertaken there must first

of all be an acknowledgement that such a quality exists and an ability to recognize it.

The objective knowledge about the spirit may be a scientific knowledge. If a modern scientist were to admit that some things, some people, could be classified as possessing the property of being spiritual and then proceeded to investigate them he would examine the way in which the material of these subjects behaves under certain conditions. He would perhaps measure the brain-wave activity or the changes in body temperature, he might record statements about the subjects' childhood experiences or study their reactions. Reason could then be brought to bear to examine the data in order to explain it and to develop theories which could be used to predict future results.

The scientist, as scientist, is interested in discovering the natural laws that govern the changes which take place, he is interested in the process of causality, and in the consequent possibility of the prediction and control of events; thus what he learns will be useful in producing certain results and avoiding others, such as the prolonging of life or the prevention of illness due to stress--nothing else will count as knowledge. The concerns and methods of science determine what can be known. Science can have no other knowledge except scientific knowledge, although it may be specifically about those things which are said to be 'spiritual', or to have the property of possessing spirit.

But an objective knowledge about that which exists at the level of the spirit may also be artistic or philosophical. An

artist may appreciate the quality of spirit and attempt to express this appreciation in some form of visual, aural or verbal statement with more or less sensitivity and with more or less technical ability.

A philosophical knowledge about the level of the spirit may be gained by a study of the words and works of those who live or have lived through the spirit. Moral injunctions, rules of behaviour and ethical systems may be derived from this and then elaborated, interpreted or followed. The cosmological theories implicit in the statements of the wise ones of the traditions may be discussed, analyzed and clarified; the truth-claims and statements of purposes which they have made may be argued about or explained by reference to an accepted body of knowledge. Norms of social relationships, systems of justice and theological theories, all of which form a part of the philosophical basis of the society, are often based upon an expression of the understandings of those who have a deeper insight into the nature of things.

The attempt to recognize and to understand something of the level of the spirit requires a mind which can be sensitive and attentive to the statements and accomplishments of those who have experienced reality differently--who have had spiritual knowledge of another kind. This other kind of spiritual knowledge is rare. It requires a transformation of being--becoming radically different in mind and body, being reborn of the spirit.

From the level of our ordinary understanding it is impossible

to comprehend this different way of being or to know what those who have this extraordinary sight know, but because we are human, with the possibility of experiencing all levels of being, it is likely we have had some moments when we have been aware of ourselves and the situation more directly. Yet perhaps the kind of knowledge the saints, sages and seers have can most easily be understood by analogy. Their knowledge is related to that of ordinary humanity in a way similar to the way that human knowledge is related to that of animal creatures. Those who have this kind of spiritual knowledge know differently because they are different--they participate in another order of materiality.

The process required to forge a new being is a spiritual path which gradually allows or causes a detachment from the way of being which sees everything as object. This is not a simple accomplishment; it may be gained only at the cost of great suffering and sacrifice of oneself. It is said again and again, in the scriptures of every great religion, that one must die to the self, become selfless or empty of the self in order to make room for a new self. It is sometimes also said that one must empty the mind or become mindless. This is not in order to become brute-like and less than human, but in order to have room for more than this ordinary mind, in order to be able to see from a higher level of consciousness.

Those who have achieved a new being have a different kind of relationship with the world than is ordinarily the case. The characteristic of greater consciousness which is common to them is

marked by a degree of understanding of and compassion for the self, others and everything which exists which is only possible with a more direct awareness of reality rather than from a discursive knowledge about it. If a person in touch with the spirit were to meet the same man who had earlier been studied by the scientist, the artist and the philosopher, the seer would know his whole history and how it would be to be that man. Those people who have met a sage often report that they feel they have been completely seen with great love and without judgement. In sensing this they recognize the presence of a higher level of consciousness. In the gospels, Nathaniel is amazed at Christ's insight. "Whence knowest thou me?" and then acknowledges "Rabbi, thou art the Son of God." John 1. 48,49, and the Samaritan women reports on her meeting with Jesus, "Come see a man who told me all that ever I did. Is not this the Christ?" John 4.29.

These wise ones do not only know about higher objects, but they realize being in the world. It is based upon a different way of seeing rather than on increasing the amount of information. Yet with this greater sight there is a corresponding increase in responsibility; those who are able to see the situation with clarity are required to act from this knowledge.

When a man has undergone such a radical transformation of consciousness that he is able to live from the level of the spirit he will be a new man and he will have new knowledge. With such a transformation Svetaketu would be able to hear what cannot be heard and to know what cannot be known. With such a

transformation the world becomes different and a man becomes one
to whom it can be said:

"Blessed are your eyes for they see, and your ears
for they hear." Matthew 13.16