SCIENCE AND THE SACRED

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Introduction: The main purpose of this paper is to assert, celebrate and recover the sacred nature of scientific activity, and by implication of all intellectual work. When the intellect is not oriented towards and in the service of Divine wisdom, it is bound to become a force for fragmentation, self-serving and evil.

Science has been for some of the greatest scientists a spiritual path, a way to connect with and serve the Sacred. Rightly understood and oriented, it can be so again. The best of the scientists have always approached science as a sacred activity –an activity that could yield 'the secrets of the Old One' (Einstein[1]). In his own words, Kepler was –and by extension, every scientist potentially is– 'a priest of God in the temple of Nature.'[2]

"It is, of course, universally agreed," said Einstein, "that science has to establish connections between the facts of experience, of such a kind that we can predict further occurrences from those already experienced. Indeed, according to the opinion of many positivists the completest possible accomplishment of this task is the only end of science. I do not believe, however, that so elementary an ideal could do much to kindle the investigator's passion from which really great achievements have arisen. Behind the tireless efforts of an investigator there lurks a stronger, more mysterious drive: it is existence and reality that one wishes to comprehend." [3] On another occasion, referring to the very high quality scientific work of Max Planck, Einstein said, "The state of mind that enables a man to do work of this kind is akin to that of the religious worshipper or the lover."[4] "Certain it is that a conviction, akin to religious feeling, of the rationality or the intelligibility of the world lies behind all scientific work of a higher order."[5]

The Sacred: It is important, however, to note that Einstein does not use the phrase 'religious feeling' in any sectarian or churchly sense; he means a feeling of awe, mystery, subtlety and vastness –precisely the feeling one has in the presence of the Sacred. In another context he called it a 'cosmic religious feeling' which he regarded as the "strongest and noblest motive for scientific research." This feeling is "one of rapturous amazement at the harmony of natural law, which reveals an intelligence of such superiority that, compared with it, all the systematic thinking and acting of human beings is an utterly insignificant reflection.... The most beautiful thing we can experience is the mysterious. It is the source of all true art and science.... To know that what is impenetrable to us really exists,

manifesting itself as the highest wisdom and the most radiant beauty which our dull faculties can comprehend only in their most primitive forms –this knowledge, this feeling, is at the center of true religiousness. In this sense, and in this sense only, I belong in the ranks of devoutly religious men."[6]

What Einstein here refers to as 'true religiousness' is a subtle combination of feeling and knowledge, a total human response to the Sacred –which is immeasurably higher than any human faculty can comprehend but which touches human beings as It touches everything else in the cosmos. It is This that human beings have –at their best– always wished to know, have always loved and have always tried to serve. Labels and designations have naturally varied from culture to culture and from century to century, but the Super-personal Wisdom, Intelligence, Being, God, Mystery, Vastness, Truth, Love, Tao, One, That is the Sacred. This is what enlightens the Buddha, anoints the Christ, motivates Socrates in his love of Wisdom, and makes Krishna draw human beings to Himself as the embodiment of the Highest. And This is what enthralls Einstein in his search for Cosmological Order.

Obstacles to Recognizing the Sacred: How is it then that science is viewed by many people these days, some of them thoughtful and of good will, as a force opposed to spirituality and as chiefly responsible for the widely sensed impoverishment and desacralisation of Nature? What seems to have been the highest motivation and aspiration of great scientists –understanding the Divine wisdom through a study of Nature and serving of humanity through technological applications of science– seems now more associated with control and exploitation of nature in the service of a military-industrial complex, underpinned by fear and greed. What is the reality behind this perception? Have the motivations of the scientists in fact changed? Or are there historical and social pressures on the scientists –thus on science, as a general activity– to serve ends which may not be in accord with their highest aspirations? Are some of these changes parallel to the differences between the aspirations of the great saints and the concerns of the established churches?

It is a fact of history that since the end of the eighteenth century, most scientists –the vast majority of whom have been of European extraction with a cultural background of Biblical religions– do not describe their relationship with the Sacred in conventional religious terms, especially in terms of faith in a personal God. There is a feeling of a fundamental incompatibility between science and such a faith. The relationship which the scientists feel towards the Sacred is much more likely to be expressed these days in terms of Wonder, Beauty, Mathematical Harmony, search for Truth, Cosmological Order or for Unity of laws and forces –all the exalted feelings highly valued in the Great Traditions of the world as marks of a truly spiritual, or religious, mind. Perhaps it is the confining of the Divine Intelligence to a particular

and exclusivist theological formulation in terms of a personal God that makes scientists shy of admitting a sense of the Sacred. To quote Einstein again: "The main source of the present-day conflicts between the spheres of religion and of science lies in this concept of a personal God.... In their struggle for the ethical good, teachers of religion must have the stature to give up the doctrine of a personal God, that is, give up the source of fear and hope which in the past placed such a vast power in the hands of priests. In their labours they will have to avail themselves of those forces which are capable of cultivating the Good, the True and the Beautiful in humanity itself. This is, to be sure, a more difficult but an incomparably more worthy task."[7]

As Western religions have more and more emphasized faith as against reason in the last three centuries, scientists have been pushed in the apparently opposite camp of knowledge, experience and insight.[8] Also, in the face of the long drawn-out warfare in Europe among the various sects of the Christian faith, many people –among them some very spiritually oriented scientists– wished to separate their activities from sectarian religion altogether. It has erroneously appeared to many that a separation from sectarian religion is the same as a separation from the Sacred.

Because of the impact of large scale institutionalization of science, especially in this century when the contribution of basic science and technology to the war effort has been more and more appreciated, science and technology get deeply intertwined in the minds of the policy makers and the general public. The very close connection of science with technology and the emphasis on the utilitarian aspects of knowledge is bound to have deleterious effect on the purer aspirations of the scientists, especially when the power of mastery over nature is sundered from the spiritual impulse of transformation of our inner nature for the purpose of serving the Divine. When we can control much of nature without submitting ourselves to spiritual disciplines mitigating against ambition, greed and hubris, exploitation of the other –of nature, of other cultures or of other species– becomes unchecked by our uncultivated higher impulses of compassion and love. It is easy to forget what Einstein said, echoing the insight of all the great spiritual sages of the world, "The true value of a human being is determined primarily by the measure and the sense in which he has attained liberation from the self."[9]

Modern science and technology are the most developed expressions of Western rationality and constitute the major forces of modernity –not only in the West but throughout the world. Everything that is good and desirable about our modern age, as well as everything that is bad and troublesome, has something to do with science and technology, directly or indirectly. Science and technology underline the specificity of contemporary life. Everywhere, people wish to cultivate and use science and technology; it is considered the *sine qua non* of development. Every

nation seems convinced that without scientific and technological expertise the country would lose its competitive edge which would lead to a slide in its standard of living.

On the other hand, a great many thoughtful people everywhere, including those in the hyper-industrialized Western societies, are rather uneasy and feel a sense of helplessness in the face of the accelerating march of technology. The role which was performed by *fate* in primitive societies is now played by the juggernaut of technology in industrially advanced countries. There is an increased sense of threat –to the environment, to our physical, emotional and mental well-being, to family and social values, to spirituality, to a sense of relatedness with the cosmos, to other modes of knowing– arising from the consequences of unbridled technology. Owing to its perceived intimate connection with technology, science itself is sometimes viewed as the source of this threat.

The very success of science in the past four centuries in understanding the mysteries of the universe, and its relationship with power structures through its coupling with technology, has in some circles led to a sense of hubris about the scientific approach to nature. Whereas great scientists have seldom held that scientific approach to Nature is the only way to understand the whole of Reality, some scientists and philosophers of science have concluded that 'non-science is non-sense.' Not only does such an attitude serve badly the open ended nature of scientific inquiry itself, it also tends to impose on Nature a particular and limited view. At any stage of development of science certain assumptions about Nature are necessary in order to make the observations manageable and communicable to others. But that does not mean that externally measurable and quantifiable aspects of Nature are all there is to Nature –not to speak about the rest of Reality. As was said earlier, 'The most beautiful thing we can experience is the mysterious' (Einstein). To insist on the fixity of only one particular view of Nature, as is often done in the name of science –as if science is, contrary to the major lessons of history of science itself, a finished or a dead activity which cannot undergo radical changes in its assumptions and procedures– is to impoverish Nature as well as humanity. The future science, to the extent it radically departs from the present science, would naturally constitute an alternative science with different assumptions and procedures. Those who have concluded that science has brought about disenchantment and death of Nature, need to remember that science has been a wonderful path to the mysteries of Nature, and it is likely to keep bringing at least some people to the gates of Mystery.

Any sensible world order cannot be imagined without the contributions of science and technology which come bearing the promise of prosperity and health. At the same time, there is a sense in some circles of an erosion of values and of meaning in human life which is associated with the rapid industrialization brought about by the developments in

science and technology. These attitudes and concerns about the promise as well as the threat of science and technology are felt by thoughtful and sensitive people everywhere, but even more strongly in non-Western traditional societies. Are their traditional modes of knowing –some of which have long histories and outstanding practical applications, especially in the areas of physical and emotional healing, and family and social relationships– simply going to be marginalized by modern science and technology? Are these cultures required to accept some fundamental Western philosophical, religious and social ideas and practices in order to adopt science and technology? Military and industrial power depend on science and technology, and no one wishes to be without power. But from the point of view of some of the leaders of traditional cultures, Western societies have won these powers at the cost of spiritual and human values, acquiring power without wisdom and compassion.

A recovery of the spiritual values inherent in the practice of science, even though overshadowed by many internal and external forces, would help heal our modern world in which science plays such a crucial and vital role, both in the West as well as in the East. This would certainly be in harmony with the ideals and aspirations of the great scientists.

Science in the Insight-Traditions and in the Faith-Traditions: Scientific knowledge has a very different function and place in the Western culture which has been spiritually nurtured by faith-oriented Biblical traditions, especially Christianity, than in the Eastern cultures which have been nourished by insight-oriented traditions of Hinduism or Buddhism. Let me take just one example for a closer look:

There is a remark of Einstein that "Science without religion is lame, religion without science is blind."[10] It sounds so congenial and heart warming –especially for those whose religious feelings are usually assaulted in the name of science. But let us explore this remark a little further.

There is a parallel remark of Ishvarakrishna in *Sāmkhyakārikā* from the second century B.C.E. This is a very important text in the Indian tradition as it deals with the theory of Sāmkhya which is very closely allied with its practical counterpart, namely, Yoga. Yoga in its turn is at the very heart of Indian spirituality. The much better known *Yoga Sutras* of Patanjali –the very slim volume which has had an incalculable influence on the spiritual life of India– was almost certainly influenced by the *Sāmkhyakārikā*. What Ishvarakrishna says, talking about *Purusha* and *Prakriti* –which we may translate as Spirit and Nature– is that "Purusha without Prakriti is lame, Prakriti without Purusha is blind."

Now, these two statements sound so close to each other that a professor seeing similarly close remarks on two student papers would

naturally suspect plagiarism! But the two statements are so widely separated in time, space and cultures –and so clearly from independent and seminal minds– that we should simply celebrate the happy similarity. If we look at the two statements closely, however, we shall discover a whole world of difference: Whatever else we understand by the metaphors of 'blind' and 'lame', we certainly associate insight, clarity, light, illumination with the opposite of being blind, namely the ability to see. All the great teachers say in one way or another that we have eyes but we do not see, and that we have ears but we do not hear. To see clearly is a mark of wisdom. Being lame, on the other hand, implies inability to act, lack of will, incapacity, lack of movement and of involvement.

Therefore we understand Einstein to say that vision –insight, wisdom, clarity, illumination– comes from science, but motivation, action, will and emotion come from religion. For Ishvarakrishna, on the other hand, insight –*jñāna* (knowledge), *prajña* (wisdom), *bodhi* (enlightenment)– belong to Purusha. Action, movement and emotion, the whole realm of *gunas*, constituents of Nature, belong to Prakriti.

Now, we have a very interesting situation emerging: we would all agree, including Einstein if he were here and willing to engage with us using the same language, that the whole realm of science has to do with Prakriti which literally means Nature which is what the natural sciences try to study. Also the word *physis* in Greek, from which we get the word physics, means nature. Religion on the other hand, Einstein might agree with the general popular opinion, deals with what is beyond nature, thus with what is supernatural. If we appreciate the delicacy of the situation, we shall see immediately some very interesting features of what we understand by science and by religion and of our expectations of these two, and about the contrasts in the views of the East and of the West.

In the East, the basic diagnosis of the human situation is that our whole predicament arises from ignorance (*avidyā*). The root cause of all our difficulties is ignorance. From that arises the confusion between the Self and the non-Self (Vedanta), or between *nitya* (eternal) and *anitya* (transient) and a clinging to the world of *anitya*. Thus arise fear and fantasy and *dukkha* (suffering), *māyā* (illusion), *asmitā* (egoism). For the Buddha, Shankara, Patanjali and all other great teachers of India, the root of all our problems is ignorance. If we know rightly, right action will naturally follow. If insight leads to and controls action and guides it, then there is right order –both internally and externally. In other words, when Purusha –consciousness, spirit, seeing (which is the sole function of Purusha the Seer, according to Patanjali[11])– sees and leads Prakriti, there is awakening, enlightenment, freedom, moksha, nirvana, and the like. Otherwise, a person is bound in *dukkha*, *māyā*, *asmitā* and *kleshas* (obstacles)!

In the Western Biblical religions, the situation is quite different. The basic human problem is not ignorance; it is rather self-will. In general, from the Biblical point of view, to say that we are waiting to engage in right action until we know rightly is just excuse making. {Maybe that is what explains lack of action and sitting around in India!} God has revealed what needs to be known; we know what the right action is. Our problem is that we do not want to obey the commandments and get on with the right action. We want to do our own self-will, rather than God's will. "Nothing burneth in hell except self-will," says *Theologia Germanica* (chapt. 34). And the whole exquisite agony of the cross –the way of the Christ[12]– is in his last words in the Garden of Gethsamane: 'If it is possible, let this cup pass me by. Yet, not my will, but thine be done' (*Mark* 14:36).

In the East, the need is for true knowledge, for right knowledge leads to right action. In the West, the need is for the true action –in obedience to the will of God; that is the definition of faith according to St. Paul– for right action leads to right knowledge. In the West, one is likely to be told: 'Don't just sit there do something.' In the East, the wise are likely to advise, 'Don't just do something, sit there.' When Bodhidharma went to China to bring the dharma, what do we think he did on arrival there? To study the social political situation? To meet the leaders? To have religious evangelical crusades, to organize a poster campaign, to have social elites sit with him on the podium impressing the folk? No, he went and sat in a cave, facing a wall! We might think he would soon get up. Maybe after a few hours or days or months. No, Siree, he sat and sat for twelve years –alone in a cave, facing a wall. Then he understood the way it is, what needed to be done, and he got up and started doing it –activities such as teaching Tai Chi to prepare the Chinese bodies for meditation, to undertake massive translation projects, but above all to teach how to do nothing and just to sit. To sit is what is *jazen* in Japanese. According to Dogen Zenzi of the 12th century, 'Zen is nothing but jazen.' As we know, Bodhidharma is one of the major patriarchs of Zen. He is the last Indian patriarch in the line from the Buddha through his great disciple Mahakashyapa; then the line of the patriarchs moves to China, and later to Japan.

The heart of meditation is to do nothing, to just sit, with stillness and silence of the body, mind and the emotions –so quietly that one can hear a rose petal fall, one can hear the sound of the thoughts arising, and hear the silence between thoughts. Arising of the thoughts and emotions is a part of the play of Prakriti, and watching this play with complete equanimity, without being disturbed, belongs to Purusha. Without the presence of the seeing Purusha, Prakriti is blind, in agitated movement and action; but Purusha needs Prakriti for purposive activity. Thus, a sage does nothing, but everything is accomplished. Lao Tze says, 'The Tao of the sage is to work without effort.' Krishnamurti said, 'Be totally attentive and do nothing.'

Given this fundamental difference between the East and the West in their understanding of what religion is about, it is not surprising that Einstein should place religion on the side of action, movement, motivation and the like. Insight, practically by default, falls on the side of science, a study of the dance of Prakriti, and itself a part of Prakriti. To the extent that science deals with measurement –remember what Planck said, 'What cannot be measured is not real'– and with space and time and materiality, it cannot be Purusha. Spirit, by very definition, is not restricted to space, time or materiality. The word 'maya' is derived from the same root as 'meter' and 'measurement'. The sages of India could have easily said that 'What can be measured cannot possibly be Real.'

Reconciliation of the Paradox: Thus we are in an interesting situation with respect to two very similar sounding statements, from two very great minds. How do we reconcile these? A paradox can lead us to conclude that only one side must be right and the other wrong. This kind of conclusion may be warranted in matters involving ordinary contradictions, but a profound paradox –it is almost the definition of profundity– does not provide a contradiction to be removed by choosing one side or the other. Such paradoxes often remind us about the limitations of language, logic and thought when it concerns really important things. Niels Bohr used to say that the opposite of a great truth is another very great truth.

Every great teacher has said that what is really True and Real cannot be expressed in words or grasped by the rational mind. What can be said is not really worth saying in some Ultimate sense. And what is Really Worth Saying cannot be said. On the other hand, it is true that on any large scale, in any institutional sense, science is the only activity in our modern world, especially in the West, which is truth or intellect or knowledge oriented. Since these are the characteristics in the same general ballpark as insight –or as Einstein said that is the area of vision– it is not surprising that so many intelligent and sensitive young people in the West, who have a scientific mode in their bones but who still have a sense of the Sacred, are naturally drawn to the spiritual traditions of the East. However, the nature of insight, of knowledge, and of the related perceptions, in the domain of science is quite different from that in the realm of spirituality –as different as are the realms of Prakriti and Purusha. We can take examples from the actual practice of science and the practice of spirituality –such as in yoga.[13]

How should we now recast the statement of Einstein or of Ishvarakrishna? Should we say, for example, that 'Insight without compassionate action is lame, and that compassion without wisdom is blind'? After all, all the sages have said that true insight naturally flowers into compassion and love, like the fragrance of a rose. To say that a Buddha –one who is awake– is without compassion is an oxymoron. But,

we can certainly have a stupid saint –remember the road to hell is paved with good intentions– and we can also have an ineffective learned being, or a philosophy professor who cannot change a light bulb!

Any true reconciliation of science and spirituality is not in a coexistence of abstractions.[14] Spiritual truth –unlike the scientific one– is always a matter of direct perception which is whole and precisely because of that reveals 'Minute Particulars' (Blake). Patanjali says that "The knowledge based on inference and testimony is different from direct knowledge [obtained in the higher states of consciousness] because it pertains to a particular object" (*Yoga Sutras* 1:49). This is why, the Biblical traditions have tenaciously held to the experience of God who is a Unique Person –or *purusha vishesha* in the language of *Yoga Sutras* (1: 24). It may even be that in still higher states of consciousness, perception shifts from that of minute particulars embedded in wholeness to that of Undifferentiated Oneness so that what remains is Pure Seeing without any thing seen apart from it, but spiritual vision always remains a matter of direct perception. Whatever difficulties Einstein may find with the notion of a personal God –as mentioned earlier in this essay– religious perception is not of the same kind as a philosophic or scientific generalization or abstraction. 'Reasonings like vast serpents infold around my limbs, bruising my minute articulations' (Blake). Pascal is truer to the Biblical understanding of God whose experience led him to forever keep on his person the declaration 'God of Abraham, Isaac and Jacob –not of the philosophers and scholars' because for him God is a matter of experience, not an inference from a philosophical proposition or a scientific hypothesis.

Both the direct religious super-sensuous perceptions and reasoned scientific theorizing and experimentation, and corresponding philosophic abstractions, can in principle reside in the same person –however rare the actual instances of this may be. It is in the soul of the same whole person that a reconciliation needs to take place –so that there can be purposive action without self-centredness, individuality without egoism, wholeness without loss of uniqueness. One in fact senses this very reconciliation in the life and activities of Einstein himself –in spite of his occasional lapses into polemic theologizing behind the shield of science. For him, as for so many great scientists, the Sacred was not discovered or proved by their science. The Sacred called them, pervaded their lives and gave significance to their scientific activity –as It would have to their other activities, such as music or poetry or painting, if they had been called to celebrate the Sacred through these, as had been Bach, Kalidas and El Greco.

Could we say that 'Religion without scientific knowledge is ineffective, but science without religious perception is insignificant'?

Endnotes

[1] See R. Ravindra, "Science as a Spiritual Path" in *Science and Spirit* , ed. R. Ravindra; Paragon House, New York, 1991.

[2] See R. Ravindra, "Kepler, Johannes", *The Encyclopedia of Religion*, eds. M. Eliade, *et. al.* ; Macmillan Publishing Co., New York, 1987, vol. 8, pp.275-276.

[3] Address at Columbia University, New York, January 15, n.d., in *Essays in Science*; Philosophical Library, New York, 1934, pp. 112-113.

[4] "Principles of Research" in *Essays in Science*, op. cit., p.5.

[5] "On Scientific Truth" in *Essays in Science*, op.cit., p. 11.

[6] Albert Einstein, *Ideas and Opinions*; Crown Publishers, New York, 1954. See also R. Ravindra, "Einstein, Albert", *The Encyclopedia of Religion*, op.cit., vol. 5, pp. 71-72.

[7] "Science and Religion" in Albert Einstein, *Out of My Later Years*, 1950.

[8] In this connection see R. Ravindra, "Physics and Religion", *The Encyclopedia of Religion*, op. cit., vol. 11, pp. 319-323. {Also reprinted in *Science and Spirit*, op.cit., pp. 21-32.}

[9] *Ideas and Opinions*, op.cit., p.12.

[10] "Science and Religion" in *Ideas and Opinions*, op.cit., p.46.

[11] *Yoga Sutras* 2:20.

[12] In this connection see R. Ravindra, *The Yoga of the Christ*; Element Books, Shaftesbury, England, 1992, especially chapt. 12, last section, pp. 151-152.

[13] See R. Ravindra, "Perception in Yoga and Physics" in *Science and Spirit*, op.cit., pp. 279-294. {This article was originally published in *Re-Vision*, vol. 3, 1980, pp. 36-42.}

[14] See R. Ravindra, "Where are Religion and Science Complementary?" in *Science and Spirit*, op.cit., pp. 367-372.