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Bridging the gap between science and spirituality:
The role of scientific investigations of paranormal
phenomena

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Introduction

The quest for understanding the world around us, namely Man, Nature and the Universe and their interrelationship, began thousands of years ago. The existence of two varieties of objects, namely inert 'matter' and 'living conscious entities' driven by a life-force called spirit was obvious. There was an intuitive awareness of the unseen hand of an immense intelligence behind it all which gave birth to the concept of an all-powerful, omnipresent 'God' and its offshoot establishment called 'Religion'. The mind of humanity grappled with this mystery and tried to make sense of it all. In the beginning there was only a single integrated quest—the quest for 'Knowledge of the Universe' (referred to in ancient Greece as 'Natural Philosophy') and the men engaged in this quest were respected as learned and wise teachers of society. This quest encompassed diverse approaches that we presently recognize as Religion, Philosophy, Metaphysics, Science, etc.

In this context the scientific approach as we know it today is relatively new, having emerged only four or five centuries ago. What has come to be known as 'modern (western) science' began with people like Galileo, Kepler, Copernicus and Bacon followed by Newton, Boyle, etc. Historically it was around this time that the practitioners of Science, Religion and Philosophy/Metaphysics began to part ways and establish separate specialist schools of inquiry for each of these disciplines. (Interestingly even today a Doctorate, be it in science, mathematics, engineering or the humanities is still referred to only as a 'Philosophy Doctor' or Ph.D!)

There is a substantial difference in the methodologies adopted by Science on the one hand and the other streams of inquiry. The Scientific method is characterized as being 'objective' and 'experimental', based on logical/rational analysis of observations etc, while spiritual inquiry is primarily 'experiential' and is therefore highly 'subjective'. The fundamental distinction it would seem

is not between Science and Spirituality per se since both proclaim to seek an understanding of 'Reality', but rather between the scientific method of investigation and the intuitive nature of spiritual inquiry.

However it is obvious to anyone with a sensitive and open mind that in the pursuit of 'Truth', Science and the scientific method have their limitations. There comes a point in the process of scientific inquiry into the nature of things, of man and his place and purpose in the universe, when logical analysis and reasoning are unable to provide all the answers; there are many questions that are not answerable based on sensorial data alone. Many great scientists have also come to precisely this conclusion.

The 'wisdom tradition' (or 'perennial philosophy') emphasized in Theosophical literature has brought out in a very exemplary manner the intuitive, contemplative, introspective and 'experiential' process that needs to be adopted to carry us forward beyond the point where Science reaches a dead end. This approach inevitably leads us into a path that has been described as the 'Spiritual Quest'.

Unfortunately the mesmerizing and astounding success of Science (and its spin off branch, technology) in recent times, has given the false impression (especially to the younger generation) that Science 'knows all', that Science has mastered all of Nature, and that the whole Universe can be explained and understood through 'Science' alone, etc. Some over-enthusiastic and self-styled 'Rationalists' also reinforce this impression. In the following text, some points are put forward for consideration as to how the gap between Science and Spirituality may be sought to be bridged and how the apparently diverse 'deductive/reductionist' and the 'intuitive/contemplative' approaches may be reconciled. How may one attempt to impress upon the 'down to earth rationalists' that there is indeed a significant component of Reality that Science is missing out on?

This article does not dwell either upon the paradigms of 'mainstream science' nor the essential features of spiritual inquiry, but rather examines the various investigative efforts under way which may be said to lie in the 'interface domain between Science and Spirituality.

Nineteenth century physics, 'Kelvinitis' and materialism

It is worth recapitulating that one can identify three clear epochs in the progress of Science: (a) Pre-sixteenth century or 'ancient' science which was pursued as part of the study of Natural Philosophy; (b) The post sixteenth century period or the era of Newtonian Physics: and (c) Post Einstein/Relativity/Quantum Physics era, essentially twentieth century physics.

At the end of the nineteenth century, Newtonian physics, also referred to as 'classical physics' or 'mechanistic physics' or 'deterministic physics', dominated scientific thinking, giving birth to the era of 'materialism'. Scientists proclaimed that they had understood all of Nature with the aid of the language of mathematics. When the young Max Planck expressed to his professor his desire

to pursue a career in physics, Planck was advised that he would be better off taking up studies in commerce as there was nothing more to be discovered in physics!

Astronomers could describe precisely the motion of planets around the sun and predict eclipses; engineers could design massive bridges and skyscraper buildings and construct gigantic ships made of steel; they could fabricate powerful steam engines to draw lengthy freight trains and make deadly guns, cannons and bombs. Intricately designed clocks could measure time very accurately. Electricity was being generated from dams and coal fired power stations to drive the wheels of industry, while Edison's invention of the light bulb was lighting up whole cities. Crude oil (petrol) had just been discovered and the foundation laid for a thriving chemical industry. Science surmised that the entire universe was basically a gigantic clockwork machine whose progress could be precisely calculated and predicted using Newton's Laws of Motion, the Laws of Thermodynamics, the various Laws of chemistry and Maxwell's electromagnetic equations all of which could, between them, explain almost anything! The scientific establishment was convinced that mankind had at last mastered all of Nature! One of the leading proponents of this type of thinking was Lord Kelvin, admittedly a brilliant physicist in whose honour we measure the absolute temperature of a body in units of degrees Kelvin even today! But his type of 'arrogant thinking' has now also come to be described as 'Kelvinitis' for we now know that physics had still to go a long way in its quest of unraveling the secrets of Nature! The physics of the atomic nucleus and the concept of the equivalence of mass and energy which were to send shock waves around the world were yet to be born!

Quantum revolution of the twentieth century

The twentieth century saw the emergence of both Relativity and Quantum physics. Starting from the experiments of Max Planck on radiation in 1900, Einstein's Special Theory of Relativity which established time as a 'fourth dimension', through the development of Quantum theory to explain the Bohr atomic model followed by the concept of wave-particle duality, the Heisenberg Uncertainty Principle etc, and culminating in the stunning experimental observation of 'entangled particles' (repeated more elegantly as recently as 1998), physics now accepts 'non locality' as a fact of Nature. This has completely changed the attitude of physicists to spirituality. Relativity and quantum physics have been largely instrumental in rendering Science less materialistic in spite of the fact that proponents of Relativity (Einstein) and quantum physics (particularly Neils Bohr) were at loggerheads with each other almost until Einstein's demise! In this context readers may recall Einstein's famous quip 'God does not play dice'. After the advent of quantum physics, eminent scientists, particularly physicists, have had less scruples in pursuing spirituality-related studies, as popularized for example by Schroedinger, Fritjhoff Capra, Roger Penrose, Paul Davies, David Bohm etc. Likewise there has also been a revolution in Biology and life sciences (DNA, genetic code), generating renewed interest in spiritual questions.

'Objectivity' is claimed to be a cornerstone of scientific methodology especially

classical physics which swears by the separability of the observer and the observed. There is a fundamental/inherent/implicit assumption that there exists a 'reality out there independent of the observer' and that the act of observation does not perturb the object being observed. This postulated characteristic of the scientific approach was a basic tenet of Newtonian physics, but is not valid any more in the post-quantum era, especially in matters pertaining to the microcosmic world of atoms and fundamental particles.

It is not clear if it is proper any more to state that the objective of science is to understand Reality. It is fair to say perhaps that understanding Reality was the original stated objective of Science when the scientific enterprise first began. But perhaps it is more appropriate to say now that Science today is more concerned with deriving mathematical models that describe and predict the behaviour of physical systems than with providing a conceptual description of Reality. It appears that Nature follows a peculiar form of logic (or language) evolved by Man that we refer to as 'mathematics'! Physicist Paul Davies ('Mind of God' and others have for example dwelt upon the 'unreasonable effectiveness of mathematics in the natural sciences'. However the mathematical models and theories are not sacrosanct but are subject to revision based on new observations. Science today is thus perfectly content with establishing theoretical models which explain the experimental observations and predict the future behaviour of physical systems under a new set of conditions, and is least concerned with the question of whether its mathematical models have anything to do with 'reality' at all!

Paranormal phenomena and 'fringe science'

An observation was made earlier that 'mainstream science' seems to have completely bypassed certain aspects of Reality. Phenomena that science is unable to understand or explain are dubbed as paranormal or supernatural or psychic phenomena. Scientific investigation of such phenomena falls under the purview of the branch of Science called 'Parapsychology'. There is a 'Parapsychological Association' which is affiliated to the American Association for the Advancement of Science. It would seem that the mainstream scientific establishment has been publicly tolerant of research into these twilight realms but in practice the majority of the mainstream scientists characterize research into such topics as 'pseudo science' or 'fringe science'. Among the many recent books which have summarized the current status of scientific investigation of paranormal phenomena, this writer has found Dean Radin's book *The Conscious Universe — The Scientific Truth of Psychic Phenomena* (1997), Claude Swanson's book *The Synchronized Universe — The New Science of the Paranormal* (2003), and John O'M Bockris' book *A Confrontation between Physics and the Paranormal Phenomena* (2005) very convincingly written.

Some of the paranormal phenomena that are being investigated using scientific methodology are:

(a) Anomalous Mental Phenomena and 'Subtle Energies': The extraordinary properties of the human mind (at least the mind of some persons) such as telepathy, extrasensory perception (ESP), mind-matter interaction phenomena psychokinesis, etc.

In this context the attention of the skeptics and rationalists is drawn to three very interesting pieces of research. The first is the scientific investigation (and its subsequent application for military purposes) of the faculty of the human mind, (known since ancient times in India as *Divya-Drishti*), to directly see objects/scenes/events located at a geographically remote (and possibly even temporally separated) location. There was a top-secret highly classified programme sponsored by the US government's military intelligence agencies during the cold war years (1972-1995), which was formally called 'Remote Viewing' programme but was popularly referred to as 'Psychic Spying'. Major findings of this research programme which was coordinated by physicists at SRI International, Menlo Park, California, as well as some glaring examples of actual 'spy missions' carried out under the direct supervision of the Pentagon ('Project Stargate') are available on the internet (search under 'Remote Viewing' in Google).

To theosophists however all this is 'old hat'. But it is interesting to note the strong parallels between the scientific findings emanating from the Remote Viewing programme and the observations of Leadbeater in his 1899 book titled *Clairvoyance*.

The second scientific study is an ongoing experimental research programme titled the 'Global Consciousness Project' (GCP) wherein a chain of about 60 personal computers, each having a special plug-in card (actually a random number generator) is presumably monitoring the whole world's 'Group Consciousness Field' on a round the clock basis. The details of this project and some of its very interesting findings are available in the website of GCP at: <http://noosphere.princeton.edu>. The most interesting and astounding response of the GCP network occurred on 11 September 2001 when terrorists rammed commercial planes into the World Trade Centre Towers in New York city. A peer reviewed paper on the data gathered on that one day alone has been published in the prestigious journal *Foundations of Physics* in 2003. It is postulated that simultaneous reaction of billions of humans watching the telecast of the unfolding events in real time created a coherence in the world's group consciousness field which in turn affected the properties of the random number generators.

The third impressive scientific investigation is the recent experimental work of Prof. William Tiller (see <http://www.tiller.org>) who is considered the 'father of subtle energy physics'. Tiller, a distinguished physicist and professor emeritus of Stanford University, appears to have stumbled on to the basic physical mechanism by which human (and possibly even animal) consciousness might possibly be interacting with both animate and inanimate matter. He has arrived at a novel but as yet a speculative theoretical model, based on his 'Intention Imprinted Electrical Device' (IIED) experiments wherein he claims to have succeeded in implanting 'specific thoughts and intentions' into an electrical device. These experiments if they stand the test of replication and independent verification are truly pioneering and may well herald the 'third scientific revolution.' His studies are however too vast a subject to be dealt with casually in an article of this nature. But those interested may like to consult his book 'Some Science Adventures with Real Magic (2005)'

The mechanism by which one mind interacts with or influences another mind

or an object ('spooky interactions at a distance' as Albert Einstein characterized it) has been a persistent puzzle for the scientific community. There is an 'International Society for the Scientific Study of Subtle Energies and Energy Medicine (ISSSEEM)' with its publication, the *Journal of Subtle Energies* whose objectives are 'scientific inquiry into all forms of energetic and informational interaction in biological systems'. Tiller's experiments seem to suggest that subtle energies are also a variant of electro-magnetic interactions; he has introduced an associate concept of 'magneto-electric' interactions to explain subtle energy phenomena.

(b) The question of the possible existence of a soul or spirit animating every human being, which survives death, and study of the related question of reincarnation is categorized in Parapsychology as 'Survival Research'. The Society for Psychic Research (SPR) in the UK and its US counterpart the ASPR, have been scientifically investigating the survival of the soul or spirit after death for almost a century now, especially purported communication from 'discarnate' entities through mediums.

Is there any scientific validity for claims of post death communication from the 'other side'? At the fall 2003 meeting of the Society for Scientific Exploration, the secretary of the UK Survival Research Committee presented details of an interesting murder case which was solved in August 2001 after a gap of 18 years, following receipt of '125 specific pieces of accurate information' relating to the murder, allegedly from the dead victim. Subsequent investigations based on the medium's report, eventually led to conviction of the suspect. Likewise the official SPR report on the 'Scole Investigations' published in December 1999 have confirmed the genuineness of the 'production of a wide range of physical phenomena such as visual, auditory, tactile and oral phenomena' by a team of 'communicating spirits' through a mediumistic group. (JSE, Vol 15, No.2, pp167-182, 2001). There is a large collection of research papers (and books) dealing with accounts of 'Near Death Experience (NDE)' and 'Investigation of claims of Reincarnation by children'.

Just because it is not possible to 'detect/measure' a dead spirit using scientific instruments or write down an equation describing an NDE experience is one to dismiss all this as non-scientific?

The intriguing issue of the possible existence of 'astral' entities referred to in almost all ancient cultures called variously as fairies, angels, devas etc needs to be inquired into. Here again for theosophists this is a topic whose 'reality' based on the clairvoyant studies of Leadbeater, Geoffrey Hodson, et al is taken for granted. The rationalist would ask the question whether there is any 'scientific' evidence for all this or is it all a total figment of imagination? While this question is beyond the scope of this article, it may not be out of place to mention that these questions have been dealt with in at least a dozen new books published in recent years on this topic.

One of such books that may be of interest to theosophists is the book 'The Secret Life of Nature' (1997) by Peter Tompkins, the author of the popular book of yesteryears, 'The Secret Life of Plants'. The Preface to the former book starts with reference to Besant and Leadbeater's work on Occult Chemistry (discussed in detail in the next section) and goes on to suggest that if Besant and

Leadbeater could be so correct in describing the detailed structure of Atom and Nuclei, then their description of the 'angelic kingdom' using the same psychic abilities must also be trustworthy. But for those not familiar with Occult Chemistry a brief introduction to it is given below.

Occult chemistry/occult sciences

One important piece of work which greatly helped this 'student' appreciate the validity of the 'Siddhi' method of perception, namely the ability of gaining 'direct knowledge of Reality' (sometimes referred to also as 'Occult Sciences') practiced by ancient rishis and sages, is the remarkable clairvoyant investigations into the detailed structure of atoms and nuclei carried out by the theosophists Annie Besant and C. W. Leadbeater over a century ago. (see <http://www.ts-adyar.org/occultchemistry> for a brief introduction). For a trained nuclear physicist this amazing work served as a great eye-opener and convinced him that the occult or yogic method of 'knowing' reality directly is entirely plausible and valid. With this background, the 'Ashta Siddhis' of Patanjali for example makes much more sense. As noted earlier, Besant and Leadbeater, using the Siddhi power known as 'Anima', 'directly observed' the ultimate fundamental subatomic particles which constituted the building blocks of matter, as early as 1895. They also counted the number of such 'ultimate' subatomic particles in each and every one of the 92 naturally occurring elements, discovered the existence of 'isotopes' and published the atomic weight of all the elements and several naturally occurring isotopes correct to the second decimal place, five years before Aston experimentally detected an isotope of Neon for which he was later awarded the Nobel Prize.

Interestingly an article titled 'Occultism and the Atom' published in the September 2003 issue of *Physics World* by Jeff Hughes, a historian of Science of Manchester University, has unearthed evidence from Aston's archival papers that Aston in fact got the inspiration to look for Isotopes experimentally, from the Besant-Leadbeater clairvoyant findings. Jeff Hughes who is currently writing a book on Aston's theosophical connection, has thus set the record straight as to who should be given the credit for the discovery of isotopes. In view of this, the general skepticism as to the ability of 'occult sciences' to provide information of 'scientific value' needs to be toned down.

The exact meaning and scope of 'occult sciences' has been elaborated upon by Taimni in his book *Science and Occultism* (1974). Taimni has put forward clear arguments as to why in his analysis, occultism encompasses and integrates the essentials of the three different approaches of Science, Philosophy and Religion. In his new book *The Snake and the Rope* Edi Bilimoria, a long standing Theosophist, has carried out a scholarly analysis of the major findings of modern science in areas such as cosmology, consciousness, biology, evolution etc, in the context of the tenets of Esoteric Philosophy contained in the ageless wisdom of mankind as revealed by Madame Blavatsky in her works.'

Concluding Remarks

There will perhaps always be a component of reality that can only be directly

experienced to a greater or lesser extent/depth/degree by the higher and subtler levels of human consciousness. For convenience 'this higher or subtler component of reality' may be referred to as 'Inner Reality'. As far as outer reality is concerned, it must be recognized that besides the well-known scientific method, the siddhi technique or 'occult science' method of direct intuitive perception does provide an alternative and complementary method of obtaining knowledge, although each of these techniques has its own drawbacks and limitations.

Thus even a down-to-earth skeptical rationalist who thinks there is nothing more to know beyond what Science offers, is forced to recognize that the different streams of inquiry, namely 'modern (western) science' and 'occult science' which goes hand in hand with spirituality, complement each other, and together strive to provide an integrated picture of the 'external' and 'internal' worlds.

To this student it does appear that the boundary between the two streams of inquiry, namely 'science' and 'spirituality', is slowly becoming blurred. I am using the word 'spirituality' within quotation marks in the absence of a more appropriate word to describe all the supposedly non-scientific streams of inquiry.

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