

MIRAGES  
IN  
WESTERN SCIENCE  
RESOLVED BY  
OCCULT SCIENCE

THE 1997 BLAVATSKY LECTURE  
of The Theosophical Society in England

by Edi D. Bilimoria, D. Phil



Olcott Library and Research Center  
THE THEOSOPHICAL SOCIETY IN AMERICA  
WHEATON, ILLINOIS 60189-0270





HENRY S. OLCOTT MEMORIAL LIBRARY  
THEOSOPHICAL SOCIETY IN AMERICA  
PO BOX 270 / 1926 N. MAIN STREET  
WHEATON, ILLINOIS 60189-0270





# **MIRAGES IN WESTERN SCIENCE RESOLVED BY OCCULT SCIENCE**

EDI D. BILIMORIA

The Blavatsky Lecture  
delivered at the Annual Summer School of  
The Theosophical Society in England  
on 3rd August 1997

NATIONAL LIBRARY  
THE THEOSOPHICAL SOCIETY  
IN AMERICA  
WHEATON, ILLINOIS

The Theosophical Society in England  
50 Gloucester Place, London W1H 4EA



This lecture is dedicated to the memory of H P Blavatsky,  
Dr Paul Brunton and Dr I K Taimni, who showed mankind a path  
to his empyrean abode—for those who care to listen.

THE THEOSOPHICAL SOCIETY  
IN AMERICA  
WASHINGTON, D.C.

# Contents and Sequence of Presentation

Mirages in Western Science  
Resolved by Occult Science

Part I Western Science	Part II From Western Science to Occult Science	Part III Occult Science
1. Introduction 3	3. The Investigation of Truth-Contrasting Philosophies and Methods of Western Science and Occult Science 55	5. The Nature, Structure and Dynamics of Divinity-A Practical Overview Appreciation 105
2. Nature <i>In Abscondito</i> -Investigations by Western Science into Cosmology, Consciousness, Sound and Light 7	4. An Occultist's Apologia to a Scientist 99	6. Unity-Duality-Diversity 125
		7. Mechanism of Manifestation and Dualities in Nature 139
		8. The Role of Sound and Light and the Unfolding of Cosmos 179
		9. Mirages in Western Science Resolved by Occult Science 195
		10. Predictions and Speculations 243
		11. The Ultimate Formula-The Way of the Heart 247





# Preface

Contemplative readers will undoubtedly have discerned the vivid contrast between the plethora of ever-shifting theories in contemporary, orthodox science and the dogmatic assertions of various religious institutions, in contrast to the always-consistent doctrine of Occult Science about the origin, nature and purpose of the our world and ourselves. This exposition attempts to provide the basis for some progress towards a reconciliation and reuniting of the wise old parent, Occult Science, with its adolescent prodigal son, Western science. This is done by establishing some common ground for further investigations and research. It is intended that the outcome should be eminently *practical* and up to date, for we are justifiably weary of learned theses and verbose, hand-waving lectures oozing a mixture of holy platitudes and arid, Occult technicalities that may be wonderful in heaven but which are useless on earth for answering the pressing needs of daily life.

One of the great problems with disseminating esoteric matters is confusion in terminology. A glossary of terms—both Sanskrit and English—has therefore been prepared and no effort spared to ensure precise and consistent use of terms along with semantic correctitude, even at the expense of according greater importance to accuracy of meaning over elegance of style. But it will be appreciated that it is humanly impossible to define or explain each and every shade and subtle nuance of meaning of every term used—even if interminable pedantry and tedium were permissible. The old adage of a finger pointing at the moon is apposite, for if we fix our gaze on the fingertip, rather than the direction of its pointing, we fail to see the moon. So the reader is implored always to read *between the lines* and *through the words*, to wrest out the *inner* meaning that is necessarily obfuscated by the veil of words, and to discern what the various descriptions and diagrams are *pointing towards*, not their literal, dead-letter meaning. It is fatal to confuse the maps with the territory.

Finally it is always important to emphasize that the Occult doctrines presented are in absolutely no way the brain-child of the writer, but rather the ageless wisdom that is every man's birthright and no man's fanciful invention. Whereas it is quite impossible to mention all sources of inspiration, the writer is especially indebted to Helena Petrovna Blavatsky, Dr Paul Brunton and Dr I K Taimni. The writer's contribution to the Occult Science sections of this lecture has therefore been a distillation, concentration and expression through a scientific idiom of some appropriate portions of the perennial wisdom germane to the subject matter under consideration. Any inaccuracies, errors or confusions are therefore the sole responsibility of the writer—not the subject. For Occult Science is an *exact* science abounding in pristine clarity—the traditional vagueness so liberally attributed to it by superficial critics being entirely to do with the near-insurmountable hurdle of striving to describe in words on two-dimensional paper what is essentially a sublime subject, transcendental and ineffable. To this end,



since the scope for improvements is quite limitless, the writer welcomes any suggestions on how some necessarily abstruse passages or diagrams could be better expressed so as to elucidate their inner meaning ever more clearly and concisely.

# Glossary and Editorial Method

No word is an island unto itself. Words imperceptibly overlap, with their meanings in borderless touch with other words; and it is often the disarmingly simple and seemingly innocuous words such as *like, as if, as though, so to speak*, that cause more confusion than the big words. Each word has its centre, or core-meaning with a surrounding sphere of influence. Where the spheres of influence overlap there is no confusion, but when the orbit of one word overlaps the core-meaning of another, mayhem reigns. Hence this glossary. It has been compiled chiefly from: *The Theosophical Glossary* (H. P. Blavatsky), *Glossary of Sanskrit Terms* (G. A. Barborka), *Occult Glossary* (G. de Purucker) and *The Concise Oxford Dictionary* (ninth edition).

Akasha – primordial, undifferentiated Space-Substance in the manifest.

Ananda – bliss.

Antahkarana – the bridge between the lower and higher Manas or the personal soul and spiritual ego of man.

Atom – in the original Greek sense meaning ‘that which cannot be divided’. It is a fundamental Occult teaching that the ultimates of Nature are atoms on the material side and monads on the spiritual (or energy) side (see *Monad*).

Bindus – ideal (mathematical) Points (Monadic centres). Their function in manifestation is to differentiate a principle, or Tattva from an integrated state into its corresponding differentiated forms. (Bindu is a similar term to Monad, but has a more specific sense.)

Bhakti – devotion.

Chidakasha – mind-substance.

Chaitanya – Consciousness.

Chitta or Chit – mind, or pure thought.

Cosmos – the order and harmony applied to the whole scheme of evolution, not necessarily restricted to the physical Universe of scientific cosmology. It is a wider term than Universe.

Evolution – Latin *ex, volvere*, meaning ‘to roll out’, signifying something which is unfolded from an originating centre in an orderly manner according to the laws and doctrines of its development.

Existence – Latin *ex, sisto*, meaning ‘to stand out’ (not to be confused with reality, which is that from which the out-standing is done).

Express – Latin *ex, premere*, meaning ‘to press out’, signifying to bring out by a particular effort.

Gunas – a quality or characteristic. Differentiated matter, or Nature (Prakriti) is pervaded by three qualities termed the Trigunas: Sattva, the quality of harmony, or goodness; Rajas, the quality of energy, or activity; and Tamas, the quality of passivity or stability.

Involution – Latin *in, volvere*, meaning ‘to roll in’, signifying the enfolding of something towards its originating centre.

Jnana – knowledge.

Kala – differentiated forms in time of any principle in the realm of manifestation (see *Mahakala*).

Kala-Anu – ideal unit of time that regulates the rhythm of manifestation as periodicity and alternation of Universes. *Ksana* is an equivalent term.

Krama – the process and mechanism of manifestation (a similar term to Fohat, but having a more specific sense).

Ksana – see *Kala-Anu*.

Logos – literally meaning ‘Word’ or ‘Sound’, it refers to the Collective Being of a system (solar or planetary).

Maha- – The prefix denotes the highest, or ultimate state of a principle in an integrated form in the unmanifest, and which can exist in differentiated aspects of itself in innumerable forms on different levels of manifestation.

Mahabindu – Great, Ideal Point, or Logoic Centres, or Gods (unmanifest).

Mahakala – ultimate principle of time in the unmanifest (see *Kala*).

Mahakasha – literally Root-matter; hence originant, undifferentiated Substance-principle in the unmanifest. It is equivalent to Mulaprakriti and corresponds to Akasha in manifestation.

Manvantara – the period of activity throughout the life-cycle of a cosmic scheme such as a Universe, solar system or planet (see *Pralaya*).

Matter – Latin *materia*, meaning ‘stuff for building’, derived from *mater*, meaning ‘mother’, applied to the objective realization, as phenomenon, of Substance, its noumenon. It is a generalized and abstract term covering the different grades of matter on the various planes of existence.

matter – Occult definition: the Matter of the different planes of existence. Scientific definition: the material of which physical bodies are composed and which endows the latter with their tangible realism cognized by the five physical senses.

Maya – literally that which may be measured. In simple terms, something that is other than what it appears as. Philosophically it means that which is subject to change, hence illusion, also limitation and restriction.

Monad – an ultimate and indivisible unit; a divine-spiritual life-atom. Monads are eternal, unitary, and individual centres, or Points of life and consciousness. In this sense Monads may be regarded as the souls of atoms which constitute their material clothing (see *Atom*).

Mulaprakriti – literally Root-matter; hence originant, undifferentiated Substance-principle in the unmanifest. It is equivalent to Mahakasha and corresponds to Prakriti in manifestation.

Nada – integrated ‘Sound’, being the source and origin of all powers, forces, etc., in the manifest (see *Shabda*).

Nature in *abscondito* – the manifold behaviour of Nature, always deceitful in appearance on the physical plane, where Nature alludes, or absconds from any attempt to grasp and understand her essential and true nature. (See also *Maya*.)

Nature *in actu* – being Nature in her essential and true self, in contradistinction to her various presentations and behaviour.

Parabrahman – the field of Absolute Consciousness.

Power – The polar correlate of Consciousness (the scientific definition of power as the rate of doing work is its distant correspondence on the physical plane).

Pralaya – Dissolution, signifying a period of rest or suspended being (see *Manvantara*).

Sat – the enduring fundamental essence; the Real as pure being, Be-ness.

Shabda – Motion-Principle as Power in the form of potential ‘Sound’ in the unmanifest; it represents the dynamic aspect of Reality (see *Nada*).

Shakti – Divine Power (see *Power*).

Shiva – Divine Consciousness.

Substance – the generalized and abstract subjective term applied as noumenon to the form-making principle of which the objective realization is Matter.

Tattva – the eternally existing ‘That’ as the abstract principles of existence.

Vehicle – Latin *vehere*, ‘to carry’, meaning a carrier-principle or channel enabling something to express through.

Objective – Latin *obicere*, meaning ‘to lie, or cast in the way’, signifying the thing that lies in one’s way. Something outside of ourselves—the thing that presents itself to mind or consciousness. The objective puts itself in the foreground. (Not to be confused with actuality or existence.)

Objectivize – The means and mechanisms for bringing about objectivity.

Subjective – Latin *subicere*, meaning ‘to lie, or cast under’, signifying that which is thrown underneath—the thing forming the groundwork. The subjective remains in the background.

UNITED State – an acronym for Unmanifested and super-Integrated State. It is referred to as the First ‘ONE’ in *The Secret Doctrine*.

Unity State – the term used to designate the plane of emanations, being so to speak, the reflection of the UNITED State. This is referred to as the Second ‘One’ in *The Secret Doctrine*.

Universe – Latin *unus*, *vertere*, meaning ‘turned into one and combined into a whole’. The term is generally restricted to the visible Cosmos as investigated by Western science.

Universes – see *Cosmos*.

Verbum – An essentially Christian term denoting the coming into existence of a spiritual power which is unborn and eternal. It starts as a Centre, or Point of conscious power at the commencement of Cosmic activity, or Manvantara. Similar terms are Divine Christos, (unrevealed) Logos, Mahabindu and Avalokiteshvara, the last by the Buddhists.

**Note:** Despite its unconventional use, some words like *express*, *existence*, *understand*, *metaphysical* have deliberately been hyphenated as *ex-press*, *ex-istence*, *under-stand*, *meta-physical*, in order to emphasize the root meaning and origin of such words (for example meta-physical means higher or beyond the physical).

## SYMBOLS

The swing-dash '~' denotes a duality. For example, space~time means: the duality of space and time.

The underscore '\_' denotes counterparts of the same principle in the unmanifest and in the manifest. For example, Shabda\_Nada means: Sound in the unmanifest and Sound in the manifest.

## REFERENCES

All references are provided in the footnotes. References to the appropriate parts of *The Secret Doctrine* are given as SD-A, p. B, where A and B refer to the volume and page number, respectively, of the six-volume Adyar edition (for example SD-1, p. 67 refers to volume 1 and page 67).

## DIAGRAMS, SIMILES AND ANALOGIES

All diagrams, similes and analogies must be clearly understood as being just aids to understanding, or ladders to progress, to be cast aside once their use is exhausted. They must never be taken in a literal or dead-letter sense and every effort should be made to transcend their limitations.

# PART I

## WESTERN SCIENCE



### **In this Part:**

- ❖ Introduction, objective, methodology and outline of this work
- ❖ Classical science on cosmology, consciousness, and the nature of sound and light
- ❖ Factors that contributed to the breakdown of classical science around the turn of the twentieth century
- ❖ The latest ideas and theories in modern science on cosmology, consciousness, and the nature of sound and light
- ❖ The effort and intended purpose of particle physics research chiefly at CERN
- ❖ The major role of quantum physics in providing strong pointers to the esoteric wisdom
- ❖ The contribution and drawback of Western scientific work into the investigation of Nature and truth
- ❖ Misgivings and optimism of a truth seeker surveying the overall endeavour of Western science

# Section 1 Introduction

When he was dying, the great Nobel physicist Werner Heisenberg, who enunciated the principle of indeterminacy, said to his student von Weizsäcker:

**It is very easy: I did not know this before. I see now that physics is of no importance, that the world is illusion.**

When the shadow of death became his tutor and Heisenberg was able to see real facts for what they truly are, what he uttered through actual experience was similar to what was stated unequivocally nearly a century earlier by the great Occultist and seer, originator of the modern, world-wide Theosophical movement and a co-founder of The Theosophical Society,<sup>1</sup> Madame Blavatsky:

**Nature behaving ever esoterically *in actu*, and being . . . *in abscondito*, can only be judged by the profane through her appearance, and that appearance is always deceitful on the physical plane.**

Three centuries after Sir Isaac Newton, Nobel-laureate Albert Einstein, possessor and so presumably a reader of Mme Blavatsky's magnum opus, *The Secret Doctrine*, captured the essence of both the above quotations when towards the end of his own life, he distilled the quintessence of his wisdom in the words:

**Science cannot solve the ultimate mystery of nature –**

a statement virtually echoed by one of the greatest characters in recent times—Nobel scientist, Richard Feynman, who stated bluntly that:

**Science fails to admit that it has not the slightest idea what energy is.**

A strictly impartial survey of the current incursion of science and technology into virtually every department of life reveals that whereas Western science abounds in numerous theories on deep issues such as whether or not there is a God, the nature of our Universe and the origin and evolution of all life, yet there is little consistency or durability in this scientific body of knowledge founded upon the shifting sands of limited data, sensory information and at times quite arbitrary assumptions. It cannot have escaped the attention of a discerning seeker after truth that many a scientific theory about our life and origins promulgated as gospel truth at one time, is completely revoked or overturned, often within a few decades as new data and fresh evidence become available. For example, in 1996 it was reported that the discovery in 1984 of a grapefruit-sized Martian meteorite

---

<sup>1</sup> Along with Henry Steel Olcott and William Quan Judge, both of whose contributions can never be overstated.

that landed in Antarctica over 13,000 years ago provided compelling evidence for life on the planet Mars, a fact that was categorically refuted by the Viking space probe in 1976. Not only are there contradictions of doctrine between the major scientific disciplines, but there are also deep schisms within any one of them. A case in point right now is the heated and abusive controversy between Richard Dawkins and Stephen Jay Gould, a fracas that is not just a struggle for the survival of the fittest ego amongst the two scientists—*both* of whom are passionate Darwinists, but also a conflict about the very fundamentals of evolutionary theory itself. Likewise, a few years ago, Francis Crick informed the world with total authority that human consciousness is *nothing more* than inter-molecular processes within the brain; and Gerald Edelman countered by saying how foolish it was to reduce a theory of human behaviour to just a theory of molecular interactions—and both these scientists were Nobel laureates. Other than their arrogance, there seems to be little else to unite some world-famous scientists of the present day, whose books sell in millions and who have become the icons of the popular scientific culture.

In view of the above, our declared purpose in this exposition is to show how Occult Science provides a basis of consistency and the common thread that not only binds and unites all the apparently conflicting and changing theories in Western science, but also reconciles and unites them into one body of unshakeable and unassailable truth to withstand the test of all time. For this we have to widen somewhat the strict definition of the terms *in abscondito* and *in actu* as used above to mean, for our purposes, the following:

- Nature *in abscondito* refers to the manifold behaviour, or the various personalities, so to say, of Nature ‘always deceitful [in appearance] on the physical plane’. Here Nature presents alluring, chameleon-like mirages of herself, but always *absconding* from and evading all efforts to understand her real self. This is the domain of Western science (physical or materialistic science are equivalent terms), limited to the physical plane where science observes and faithfully records the changeful behaviour, but finds it impossible to pin down and grasp the essential nature of Nature. Nature *in abscondito* is interrelated with, but not the same, as the whole enigma of maya.
- Nature *in actu* is none other than Nature-in-herself—the *actual*, essential or real. This is the sphere of Occult Science that includes, but is by no means restricted, to the physical plane, which it regards, in fact, as the least important of all the various planes of Nature.

By Occult Science, we mean, of course, one of the principal subsets of the perennial wisdom otherwise known as *Theos-Sophia*. Naturally, then, Western science is also a subset of Occult Science—albeit very far removed, since it deals with the manifestation of Occult law on the physical plane.

We must perforce restrict the scope of our enquiries. Therefore we have chosen to concentrate upon three chief areas of endeavour in the contemporary world of physical sciences, namely, the nature of reality and matter, the origin of our Universe, and the basis of consciousness, which has recently become a hot

subject of scientific debate. Quite arbitrarily, biological science is excluded from our scope, other than as a component in our discussions of consciousness. The Contents page shows the range and order of our presentation. Whereas it is obviously preferable to read in the sequential order shown, this is not an absolute necessity because we have made each section, as far as practicable, self-contained so as to mirror the overall theme and general tenor of our arguments. A reader may therefore peruse individual sections without undue loss.

The objective of Part I is to prise open the Pandora's box of Western science in order to expose the contradictions and inconsistencies in scientific dicta on the above three topics. We also state, in fairness, the fine contribution of the crown jewel of Western science—quantum physics—in supplying pointers in corroboration of the esoteric doctrines.

In Part 2 we contrast the different approaches to investigating Nature and discovering truth by Western science and Occult Science. The former is based mainly on the Aristotelian inductive method comprising an iterative cycle of observation, hypothesis and experimental verification. The reports of the physical senses are all-important and so Nature is seen in *abscondito*. The Occult method is largely deductive in the Platonic sense, and includes an arduous period of training, not so much in learning and accumulating information but, so to speak, in UNlearning those conditioning factors that block clear perception: in other words an eradication of all possibility of distortion caused by unconscious motives, unacknowledged driving assumptions, confused perceptions and the desire for power, fame and recognition that unfortunately blights so much worthwhile scientific work at present.

We open Part III by attempting to remove the greatest obstacle in the path of a genuine appreciation by Western science of the esoteric principles, namely the false idea of an external 'Creator God' preached by popular religions. Thereafter we present the Occult doctrine, first showing why and how a fundamental unity appears as duality and diversity. We continue with some details on the mechanism of manifestation and explain the nature and role of Space, Time and Matter, and also Sound and Light in the overall unfoldment of the Cosmos. Then follows the resolution of problems in Western science by Occult Science. Here our treatment is necessarily of a general nature, covering the whole spectrum of topics within our purview, without becoming bogged down in excessive details. Nevertheless we stress that a resolution has to be more than just a set of metaphysical mirror-image analogies and correspondences, for it must provide the universal solvent in which all apparent contradictions are dissolved. It is emphasized that our approach here must be pragmatic: grandiose statements and over-generalizations will not suffice if we are to demonstrate the eminently practical value of importing the wisdom of Occult Science into the matrix of contemporary Western science. We move on to speculate about the course of Western science in the coming century before closing with an ultimate 'formula': from Occult Science to Western science.

The writer wishes to place on record his indebtedness to the works of Dr I K Taimni that he has used for guidance on the contents and structuring of large portions of Part III.

Throughout our exposition we make it crystal-clear that our purpose is not to denigrate Western science or calumniate individual scientists but, on the contrary, to give full credit to the achievements and contributions of Western science that have justly earned for it the epithet of the best ally of Occult Science. Nevertheless, it is imperative to curb the wild excesses and exaggerated claims of Western science (or, rather, of *some scientists*, for one can take issue only with the practitioner, not the practice) on subjects outside its legitimate boundaries and about which it knows absolutely nothing (a mass of contradictory opinions notwithstanding), because, unaided by the wisdom of Occult Science, it 'cannot solve the ultimate mystery of nature', as Einstein said.

It is high time we hurled the spear of Occult Truth to shatter the haughty MASK of science, while leaving its handsome face unharmed but all the better for lack of constriction. Let us begin.

## Section 2 Nature *In Abscondito* – Investigations By Western Science Into Cosmology, Consciousness, Sound and Light

Sir William Groves said that:

*“Science should have neither desires nor prejudices. Truth should be her sole aim.”*

HELENA PETROVNA BLAVATSKY<sup>1</sup>

The purpose of this section is to lay bare the *in abscondito* feature of the multifarious theories and hypotheses in Western science in three principal disciplines of its research. Referring to Fig. 2.1(a), these are the:

1. origin of the Universe, including the search for the ultimate building block of matter;
2. origin and nature of consciousness;
3. search for reality in the form of the investigation of the nature of sound and especially, of light. Esoteric pointers from quantum physics are highlighted.

Whereas classical science is included in our scope, emphasis is placed, naturally, on the latest tenets of modern, twentieth-century science.

Inconsistencies and contradictions in theory and outlook are found to exist in both the vertical, and the horizontal dimensions, so to speak—see Fig. 2.1 (b). The former concerns paradigm shifts connected with the evolutionary development and forward progression of Western science as a whole. The latter is to do with anomalies in doctrine across the three disciplines mentioned above, and also within any one of the latter itself, that exist during any epoch of classical or modern science. It is however not intended to delve into the details of any one or other scientific theory, but instead to stress the *different interpretations of*

*Nature that they provide*; hence to demonstrate the inability of Western science, as a whole, to settle down towards a unified and consistent view of Nature, despite all its valiant efforts and vast expenditure towards such an undertaking.

---

**Part I highlights the inconsistencies and numerous, contradictory accounts of Nature provided by Western science, both classical and modern.**

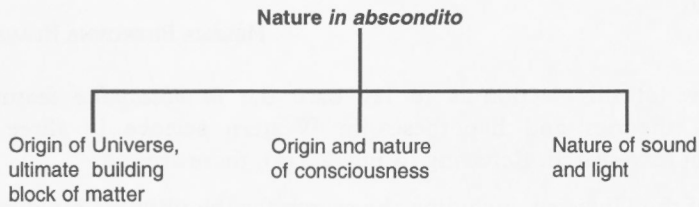
---

<sup>1</sup> SD-2, p. 234. Upon perusal of Part 1, the reader is invited to evaluate how faithfully this quotation reflects what ought to be the motto of science.

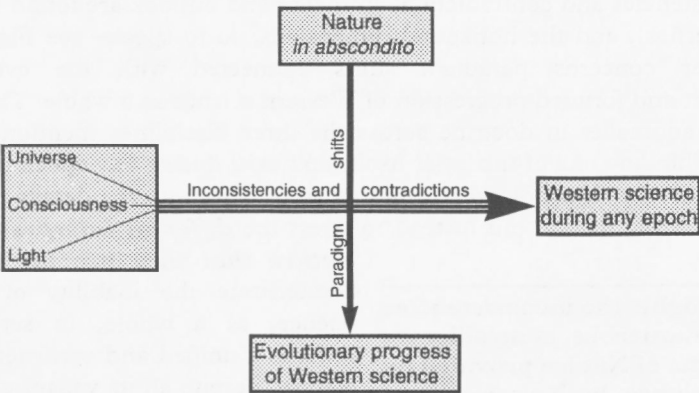


In Part III we attempt to show how Occult Science—ever-consistent in its doctrines, and not subject to the vagaries of any epoch or geographical location—provides both the general solvent in which such *abscondito* differences are resolved, as also the universal ‘glue’ that aligns and fuses together the three pieces of the jigsaw puzzle mentioned above.

Classical science comprises the Age of Scientific Revolution during the Renaissance, onwards through the Age of Enlightenment, and towards the end of the nineteenth century. Modern science pertains to our present, twentieth century. We have resisted including in our scope the science of classical antiquity or earlier, since this is too vast a subject to treat in limited space. In fact the writer deplores the frequently dismissive and superficial remarks made in quality encyclopaedias, etc. about the science of ancient cultures—in particular the



(a) Three Principal Disciplines of Western scientific Endeavour



(b) The Changing Face of Western science on the Cross of Matter

Fig. 2.1 Nature In Abscondito

cosmogony of the Indians, Babylonians, Egyptians and Greeks.<sup>2</sup> Such commentaries tend to treat of the subject from an almost entirely dead-letter literal point of view, with little understanding of the symbolism, allegory and myth used by the Ancients to shroud so many of their deepest and most sacred secrets. For the Ancients tended to treat the body and soul of Nature (astronomy and astrology with regard to cosmology, for example) as an undivided whole. Whereas Western science has tended increasingly to strip out the soul (and spirit)—hence the problems and conundrums facing it, as will be described.

Whereas the writer has eschewed using mathematics (beyond the ability to read a simple, three-term equation), he makes no apology for delving into quantum physics, a subject that has inaugurated higher orders of abstraction and thereby undermined the popular notion of 'objectivity' as well as the 'realism' philosophy of scientific materialism. Quantum physics, even more than relativity in the writer's opinion, thus offers the greatest promise and points towards the means for Western science to become a stronger ally of Occult Science.

## **COSMOS IN ABSCONDITO – RESEARCH INTO THE ORIGIN OF THE UNIVERSE**

This section describes Western scientific effort to discover the origin of our Universe. The subject can conveniently be divided into two main areas of endeavour: cosmology, comprising theoretical modelling coupled with astronomical observations, and fundamental particle research.

### **Cosmology and the Origin of the Universe**

**KEYWORDS:** Steady State, Big Bang, redshift, singularity, vacuum, general relativity, high-energy particles, ultimate building block of matter

### **BACKGROUND TO MODERN COSMOLOGY**

Classical science in the main regarded the Universe as static and infinite. An excellent elucidation of the implications of various theories of classical cosmogony is given in Volume 2 of *The Secret Doctrine*, Section 4 'The Theories of Rotation in Science' and Section 12 'Scientific and Esoteric Evidence For, and Objections To, the Modern Nebular Theory.' What now follows is a brief history of key developments in modern cosmology involving an interlacing of astronomical observations and theoretical predictions that have radically altered the way in which Western science nowadays views the Universe.

<sup>2</sup> For example, the Ptolemaic system which places the earth at the centre of the Universe is not concerned with a quantification of linear distances of the planets from the sun, nor with physical structures, but deals in a *symbolic sense* with the correspondence of the planets and stars with the human principles, in regard to the journey of the human being into and out of incarnation. An admirable account of this system is given in a talk by Professor John Algeo, *The Mystery of the Labyrinth*, 29 July 1996. Audio tape copies may be obtained from The Theosophical Society in England.

Vesto Slipher (1875–1969) was the first person to identify that the spectral lines of galaxies were shifted towards the longer (red) wavelengths.<sup>3</sup> This observation paved the way for Hubble's discovery that the Universe is expanding. In 1917 Albert Einstein (1879–1955) proposed a model of the Universe using his own (new) general theory of relativity, which includes time as the fourth dimension and shows that gravitation is equivalent to a curvature of this four-dimensional space. His solution indicated a Universe that was either contracting, or expanding, but not static. However since the expanding Universe had not yet been discovered, Einstein arbitrarily introduced a 'cosmological constant' in his equations to produce a static Universe, such that the cosmical repulsion (outwards) and self-gravitation (inwards) were exactly in balance. Thus the Einstein Universe was finite in volume, but unbounded; it was static and timeless. Einstein later referred to his cosmological constant as the 'biggest mistake of my life'. Also in 1917, Willem de Sitter (1872–1934) solved Einstein's equations for a Universe without matter, so that gravitational forces were unimportant.

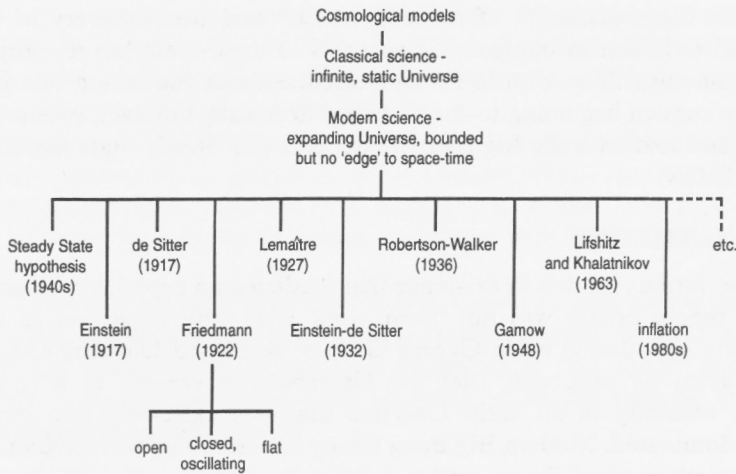
In 1922, Aleksandr Friedmann (1888–1925) was able to obtain exact solutions of Einstein's equations by making two simple symmetry assumptions known as the 'cosmological principle': that the Universe is entirely homogeneous, and that it is isotropic (having the same properties at all places in all directions). In other words, the Universe would look the same to an observer looking in any direction, and standing at any location. Friedmann showed that the fate of the Universe depended directly upon the average density of matter in the Universe. His model is one of the currently accepted models of the Universe, and in fact predicted what Hubble found seven years later.

George Lemaître (1894–1966) in 1927 also solved the Einstein equations in a similar fashion to Friedmann, of whose work he was apparently unaware. Lemaître was the first person to introduce the idea of a 'primeval atom' out of which the Universe exploded. His suggestion marked the beginning of the Big Bang theory of cosmogony. In 1929, Edwin Hubble (1889–1953) building upon the work of Slipher, discovered what has become known as the law of redshifts, or Hubble's law: that the recession velocity of a galaxy is directly proportional to its distance from any point of observation. It was realized that the predictions of Einstein's general theory of relativity, as applied in the cosmological models of Friedmann and Lemaître, matched Hubble's observations. But despite the success of Friedmann's earlier prediction of Hubble's observations, Friedmann's work remained essentially unknown in the West until similar models were formulated in 1936 by Robertson and Walker in the wake of Hubble's discovery. Then in 1948, George Gamow (1904–68) adapted Lemaître's theory into the Big Bang theory currently in vogue.

Also in 1948, Fred Hoyle *et al* proposed a steady state hypothesis to account for the expansion of the Universe. This idea was taken up again in 1963 by Evgenii Lifshitz and Isaac Khalatnikov in order to circumvent the issue of a beginning of time associated with a big bang, but their later work actually showed

---

3 The Doppler effect of elongation of wavelength of light towards the red end of the spectrum caused by movement of a light-emitting source, such as a star or galaxy, away from the observer.



**Fig. 2.2** *Cosmos In Abscondito*: Evolving Ideas in Cosmology

that there could have been a big bang ‘start’ to the Universe (assuming the general theory of relativity to be correct).

These various models of an expanding Universe have evolved into several ideas about cosmogony which can all be categorized as shown in Fig. 2.2 under two principal headings—Steady State hypothesis and various models that incorporate the Big Bang theory.

## STEADY STATE HYPOTHESIS

In the 1940s, Fred Hoyle (1915– ), Hermann Bondi (1919– ), Thomas Gold (1920– ) and later, Jayant Narlikar presented the Steady State model of the Universe. The essential concept was that the large-scale properties of the Universe would appear the same to an observer anywhere, and at all times. Hence, the decrease in density of the Universe caused by its expansion would have to be balanced exactly by the continuous creation of new matter. The first idea was that matter would appear throughout intergalactic space in the form of new hydrogen atoms at a rate of one new atom for each ten cubic kilometres of space in one year. A subsequent development of the hypothesis postulated matter creation as a localized, energetic event in the region of intense gravitational fields, such as in the nuclei of quasars<sup>4</sup> and active galaxies.<sup>5</sup> This matter would then ‘condense’ into galaxies that would take the place of galaxies that are moving apart. (Note that steady state does not imply static—an expanding Universe is fully admitted in the Steady State hypothesis.)

The original form of the Steady State hypothesis has been proved to be erroneous by virtue of astronomical observations showing that the large-scale properties of the Universe have changed with time. Accordingly, this hypothesis was discarded in the 1960s following the enormous success of the Big Bang

<sup>4</sup> A quasar is the intensely energetic core of an active galaxy.

<sup>5</sup> An active galaxy is one that emits large energy from its nucleus, or central core.

theory, plus the explanation of nucleosynthesis<sup>6</sup> and the discovery in 1964 of background radiation in intergalactic space. The theory still has its proponents, especially amongst those who feel uncomfortable about the notion of a big bang providing a sudden beginning to the Universe. Ironically however, recent inflation theories associated with the Big Bang model echo the Steady State hypothesis, as explained below.

## BIG BANG THEORY

Despite the various models in existence that predicted an expanding Universe, the Big Bang theory proper was not 'born' until 1948 (the same year as the rival Steady State hypothesis) when George Gamow developed Lemaître's idea of the primeval atom by proposing that the Universe was created in a cataclysmic explosion, resulting in an early Universe that was extremely hot, dense and radiation-dominated. Modern Big Bang theory in cosmology is erected on the two pillars of mathematical theory and a progressive accumulation of astronomical observations that appear to be corroborating the theoretical predictions.

### Theoretical Precepts

1. Einstein's general theory of relativity (which incorporates Newtonian physics as a special case) is to date the most satisfactory physical theory of space and time, and the gravitational interaction of all matter. It has been experimentally verified on numerous occasions. This theory predicts an unstable universe that is either expanding, or contracting with time (i.e. the space between galaxies is not constant). This is because general relativity regards the gravitational effect of all bodies such as planets, stars and galaxies as a distortion or stretching of space-time.
2. A cosmological principle which states that an observer's view of the Universe would depend neither on his location, nor on the direction he looks.<sup>7</sup> This means that the Universe has no 'edge'.

### Astronomical Observations

1. Measurements of the redshifts in the light from distant galaxies have led astronomers to conclude that galaxies in all directions are moving apart (Hubble redshift in 1929). This is rather like blowing up a balloon with evenly spaced dots, so that an observer on each dot would see all other dots expanding away from him. This has led to the major conclusion that the Universe must be expanding.
2. Residual background microwave radiation in intergalactic space discovered in 1964. This is thought to be a remnant of the intense radiation emitted by the tiny, immensely hot and energetic Universe immediately after the bang.
3. Anisotropy of the cosmic microwave radiation detected in 1992.<sup>8</sup> This provides evidence for temperature fluctuations and is a necessary pheno-

6 Nucleosynthesis is the process of building the nuclei of heavier elements from the 'building block' of the nuclei of the lightest element, hydrogen.

7 This principle applies essentially to the large-scale properties of the Universe.

8 In other words, the microwave radiation is not the same in all directions.

menon to explain the large-scale structure of the Universe where galaxies are not symmetrically distributed, but clumped together in some regions, with empty space in other regions. (If the Big Bang were a perfectly symmetrical event, galaxies could not have formed.)

4. Many galaxies in the Universe have been found to emit radio power (such as Virgo A, Centaurus A, Cygnus A and the Milky Way). The change in radio source counts suggests that the average properties of the Universe in the past were different from those of today, indicating that the Universe is indeed evolving.
5. The abundance of light elements in the Universe, particularly hydrogen, deuterium, helium and lithium, which is consistent with the nucleosynthesis of the Big Bang theory. (Note that according to this theory the 'heavy' elements were missing in the early Universe—they can only be created in stellar fusion and supernovae.<sup>9</sup>)

Theory and observation both suggest, therefore, that by regressing this expansion backwards in time, we arrive at a moment in time—the so-called Big Bang—when all the space-time and all the energy-matter<sup>10</sup> in the whole Universe was concentrated in a single point, known as a singularity. A singularity is a place in space-time where the curvature of space-time becomes infinite, resulting in a breakdown of the known laws of physics. In the 1960s, Stephen Hawking and Roger Penrose showed that the observed expansion of the Universe, and the general relativity equations taken literally and at face value, mean that the Universe was born 15–20 billion years ago, out of a singularity—a point of zero volume and infinite density. (Part III explains how Hawking has mathematically surmounted the disturbing problem of the singularity, or 'edge' of time, at the beginning of the Universe.) Quantum physics however states that it is meaningless to think in terms of a point of zero volume and infinite density, but instead considers the initial expansion of the Universe to have commenced from a region no larger than the Planck length ( $1.6 \times 10^{-35}$  metre), when the density was not infinite, but around  $10^{85}$  tonnes per cubic millimetre.

The above considerations have led scientists to conclude that since the Big Bang did not occur at a particular point in space, or instant of time, but rather the Big Bang was the *origin* of space and time, *so to inquire about events before the Big Bang is meaningless and futile, because science has no observational or other means of establishing their existence, or otherwise.* Note that Western science is not stating that nothing existed before the Big Bang,<sup>11</sup> but that such factors lie outside the legitimate boundaries of Western science. Pre-Big Bang events or causative

9 A supernova is the extremely violent and explosive death of a star resulting in a period of intense brightness.

10 The tilde '~' is used in preference to the common hyphen '-' to indicate a dual, polar principle. For example, matter is 'imprisoned energy'; energy is 'released matter'.

11 An external 'Creator God' in the anthropomorphic, exoteric religious sense seems to be as far as *some* scientists (e.g. Stephen Hawking) are prepared to speculate about such causative influences. Other scientists (e.g. Richard Dawkins and Carl Sagan) firmly believe that the methods of Western science alone will, in the fullness of time, unlock the deepest mysteries of the Universe. Part II deals fully with the dilemmas and conjectures that arise when the finite, concept-manufacturing (lower) mind of man tries to fathom the infinite and eternal.



influences cannot be measured or observed; nor can theory cope with them. Accordingly, Western science has (arbitrarily) excluded them from any kind of a scientific concept of cosmology.

## CURRENT EXPANDING MODELS THAT INCORPORATE BIG BANG THEORY

All cosmological models currently in vogue use Einstein's field equations relating the curvature of space-time to the distribution of matter, in order to determine the large-scale structure of the Universe. But the equations do not yield a unique answer and several mathematical solutions are possible according to whether interest is focused on the overall fate of the Universe in time, or its contents. By adjusting the input parameters to the equations, it is possible to determine how well the calculated results compare with observation of equivalent phenomena in the Universe, hence to determine how well the theoretical predictions describe the physical world—the real and only world to the cosmologist. These diverse solutions constitute the various Big Bang models, the chief ones of which are summarized below—refer again to Fig. 2.2. (Further treatment on the principle of modelling in science is given in Part II.)

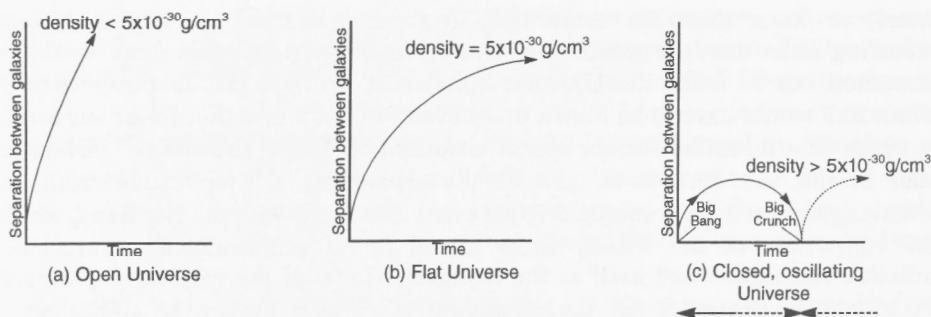
### Friedmann Models

The fate of the Universe depends directly upon whether the average density of matter is such that self-gravitation can decelerate and eventually overcome the cosmical expansion. The currently estimated critical value of density is  $5 \times 10^{-30}$  grams per cubic centimetre, resulting in three possibilities:

1. *low density, ever-expanding model predicting an open Universe*—Fig. 2.3(a): if the density is below the critical value, the expansion process will continue for ever, at a decreasing rate. The current age of the Universe would be greater than 7 billion years;
2. *critical density model predicting a flat Universe*—Fig. 2.3(b): if the density is equal to the critical value, the Universe will reach a state where self-gravitation exactly matches the outward expansion;
3. *high density, gravity-dominated model predicting a closed and possibly oscillating Universe*—Fig. 2.3(c): the self-gravitation of matter will eventually succeed in reversing the expansion of the Universe into a contraction, resulting finally in a Big Crunch. By appropriate choice of parameters, an oscillating Universe is predicted in terms of a Big Bang following immediately upon the Big Crunch, and so on. This model indicates the current age of the present Universe to be less than 7 billion years.

The observed density of the Universe is between 1% and 10% of the critical density needed to reverse the current expansion, i.e. at least 90% of matter is still missing. However, Western science has good inferential evidence that a large proportion of the total mass of the Universe must be in the form of 'dark matter'; but the latter has not been directly detected. The question of dark matter is taken up again in Part III.





**Fig. 2.3** Cosmological Models – Three Main Possibilities for Fate of the Universe

### Lemaître Model

This model is characterized by a very rapid initial expansion which is then slowed down by gravity to reach a quasi-static period favourable to the formation of galactic condensations. Thereafter the expansion accelerates again and this is the stage of the Universe today. This model is considered to explain certain peculiarities in the redshift data on quasars. However it differs from all other expansion models in that it predicts an acceleration in the rate of expansion, whereas other models indicate a deceleration in expansion owing to self-gravitation.

### Einstein-de Sitter Model

This is a special case of a flat Universe as depicted in Fig. 2.3(b). Much favoured by Einstein himself from 1932 onwards, this model predicts that the current expansion of the Universe continues indefinitely, but tends to an asymptotic limit as the expansion velocity approaches zero. It predicts the present age of the Universe as around seven billion years (which is reasonably compatible with the estimated age of the Milky Way).

★ ★ ★

It is seen that the above models give (at times radically) different answers to two crucial questions: the fate of the Universe, and its contents. The former can be open, flat or closed (and oscillating), depending largely upon the density of matter; and for the latter, all models assume that the cosmological principle holds exactly, i.e. the contents of the Universe can be represented in terms of an averaged, smoothed-out value of what prevails in practice.

### Inflation and the Vacuum Fluctuation

Inflation is a general term for cosmological models developed in the 1980s by Alan Guth (1947–), Andrei Linde (1948–), Edward Tryon and others. It deals with the very first moments of creation when what is now the observable Universe expanded at a phenomenal rate from a size of roughly less than a proton ( $<10^{-15}$

metre) to about that of a tennis ball, in about  $5 \times 10^{-33}$  seconds (a process occurring faster than the speed of light). During this period, space-time would be smoothed out to make the Universe almost flat. To put this in perspective, a tennis ball would have to be blown up to over 300,000 times the size of our earth, in which case its surface would appear virtually flat. The entire visible Universe is seen as just one bubble in an eternally expanding, self-replicating froth, so removing the need for a unique original event associated with the Big Bang, which the supporters of the Steady State model found philosophically untenable. Inflation has established itself as the Standard Model of the very early Universe. Paradoxically it applies the understanding of particle physics to cosmology—thereby combining the study of the very small, with the study of the very large.<sup>12</sup> If the inflationary model is correct it appears that there may be an indefinite number of other expanding ‘bubbles’ of space-time, i.e. other Universes incommunicable with our Universe.

Associated with inflation, some cosmologists postulate that the entire Universe may be a vacuum fluctuation, i.e. the appearance of a tiny bubble of space-time out of the vacuum state, which in modern science is not regarded as ‘nothing at all’ but rather as a seething plenum of potential activity. So in overall terms: (a) after the initial appearance of the ‘bubble Universe’ out of the vacuum; (b) the inflationary process took over; then (c) the Universe expanded more gently, and continues to do so at present. It is ideas of this sort that made Alan Guth describe the Universe as the ‘ultimate free lunch’.

## Fundamental Particle Research – Science for the New Millennium

The European Laboratory for Particles Physics, CERN, is at the forefront of world research into particle physics and will undoubtedly provide a springboard to launch science into the twenty first century. CERN states its avowed objective in unequivocal terms: ‘pure science, [to] explore nature’s most fundamental questions [like,] what is matter, where does it come from, how does it stick together into complicated objects like stars, planets and human beings?’ Such particles are studied ‘because we are made of them and so is everything else in the Universe.’<sup>13</sup> The essential task is to provide beams of high energy particles for physicists to use in their experiments. These particle beams ‘are used to probe the heart of matter and take us back to the beginning of time, the Big Bang.’

The heart of the CERN complex is the Large Electron Positron Collider, LEP. Operating since 1989, it is the largest particle accelerator in the world. It is designed to study one of Nature’s fundamental forces, the weak nuclear force (which, incidentally, fuels the sun and is responsible for some types of natural radioactivity). This is accomplished by investigating the effects of electrons and

<sup>12</sup> Particle physics includes quantum physics allied to grand unified theories (GUTs), also referred to as a theory of everything (TOE), that attempt to describe the physical behaviour of all forces and particles under a single set of mathematical equations.

<sup>13</sup> All quotes are taken from CERN Annual Report, Vol. 1, 1995, plus related material.

their antimatter counterparts, positrons, colliding at high energies and speeds just less than (by some 0.035 kilometres per hour), the speed of light. LEP is buried between 50 to 175 metres below the Jura foothills inside a 26.7 kilometre circular tunnel straddling the Swiss-French border outside Geneva. LEP is so sensitive and its beam energy measurement so precise that it is influenced by disturbances such as the orbit of the moon, heavy rainfall, changing water levels in Lake Geneva and TGV trains running near Geneva station—which all cause slight movements in the tunnel rock, which in turn has a subtle influence on the beam energy.

An even more sophisticated particle accelerator, known as the Large Hadron Collider, LHC, is about to be installed in the underground tunnel. This will launch particle physics into the twenty first century, by studying another of Nature's fundamental forces, the strong force operating in the atomic nucleus. The scheme will also enable scientists to investigate, by virtually reproducing, the fraction of a millionth of a second of time following the moment of creation when the Universe consisted entirely of a quark-gluon plasma.<sup>14</sup> This involves creating laboratory temperatures of over ten thousand million degrees centigrade, for which superconducting magnets are used to accelerate protons travelling in opposite directions to near the speed of light. When they collide they have a combined energy of some 16 million, million electron volts. The collision events are recorded by particle detectors as large as houses and crammed with ultra-sophisticated electronics to detect around 800 million collisions each second, and to pinpoint particle tracks with thousandth-of-a-millimetre precision. The underground cavern for LHC would easily contain a six-storey office block. In fact CERN refers to its underground experimental halls as 'being called the cathedrals of modern science'—perhaps presaging, unconsciously, the day when science and religion, *shorn of their respective superstitions*, will eventually meet. The LHC scheme was approved by Europe's science ministers in December 1995, and will cost the European taxpayer some £10 billion over the next twenty years (about the same cost as the Channel Tunnel). Additional funding will also be granted by non-Member States, including Japan, which paid 5 billion Yen to CERN in 1995.

It is hoped to discover the Higgs boson which might explain the origin of mass. Besides many other features of particle physics, intense interest also centres around antimatter<sup>15</sup> because one of the limitations of the six-quark Standard Model of the Universe is the way it deals with antimatter. (Before the Standard Model only four kinds of quarks were known.) Although there seems to be little antimatter in the Universe, it is believed that matter and antimatter were created in equal amounts at the Big Bang. Therefore it is hoped that experiments using

14 Quarks are a class of charged, elementary particle of matter that experience the strong nuclear force, and are contained within other particles like protons and neutrons. A gluon is an elementary particle carrying the strong force responsible for binding quarks together inside particles like protons and neutrons—what scientists call 'Nature's glue'. In Part III we shall realize that it is in fact a force field of 'sound' emanating from the centre of the atom that constitutes the ultimate 'glue on' uniting the nucleus with its orbiting electrons.

15 Every kind of matter particle has its mirror-image antiparticle. Antiparticles have the opposite electric charge to their particle counterparts, such as the negatively charged electron and its positively charged antiparticle, the positron. The esoteric doctrines fully account for this polar duality.

the LHC (which will virtually reproduce, on a small scale, the first moments of creation), will refine the Standard Model by resolving issues relating to a six-quark theory. The outcome may perhaps unravel the mystery of the matter-antimatter imbalance in the Universe. (Antimatter in the form of antiproton and antihydrogen atoms have already been created at CERN.)

*CERN states that the Holy Grail of particle physics is a simple theory in which all of the apparently different forces in Nature are unified<sup>16</sup> into a single force that could, according to some physicists (slightly tongue-in-cheek), be written on the front of a T-shirt.* Data suggests that this would only happen if a new idea, supersymmetry, or SUSY, is correct—for which the LHC experimental facility is also a prerequisite. A harvest of new particles such as Higgs, SUSY, chargino, plus antiparticles are expected to make their appearance on the stage of the twenty first century.

## A Truth-Seeker's Commentary and Quandary

### COSMOLOGY AND THE ORIGIN OF THE UNIVERSE

It is not difficult to sense that behind such stupendous efforts to unlock the secrets of the stars, Man's true motive, often unbeknown to himself, is to unlock the secrets of his own self, to liberate the immortal, inner being from its transient, fleshly encasement—for it is no mere statement of sentiment that Man's inner nature and true abode lie one with the stars. But until his inner eyes are opened, his quest, restricted only to the use of physical eyes and mechanical apparatus, is doomed to remain a blind groping towards an ill-defined goal. This appears to be the quandary in which a sincere seeker after truth finds himself regarding the outcome to date of Western scientific effort to interrogate the Universe.

A truth seeker cannot rest contented with all these representational models of cosmos *in abscondito*. Whilst appreciating their value in describing some or other aspect and behaviour of the *physical and visible* Universe, he remains dissatisfied with the partial and inconsistent information they provide (for example, regarding the ultimate fate of the Universe). He needs more than just quantitative information based on mathematical equations loaded with simplifying assumptions. For example, knowing that the density of the early Universe was about  $10^{85}$  tonnes per cubic millimetre adds to his stock of data and information, but how does this enable him to be any *wiser* about Nature, or more reverential towards the nameless Higher Power behind all creation? He looks around dispassionately and finds cosmologists uncertain about, and trying hard to find which mathematical solution of Einstein's field equations amongst other mathematical equations of GUTs and quantum theory, best corresponds to the actual structure of the Universe, as physically observed. He wonders whether mathematics and physical observation, highly useful up to a point, are however, a

---

<sup>16</sup> It is not difficult to 'dis-CERN' Man's longing for Unity, albeit in the most materialistic sense, in the search by particle physicists for a supreme GUT or TOE. Part III explains that it is in fact nada, or integrated 'sound'—an entirely *meta*-particle-physics concept—that is the integrated unity of all powers, energies and forces in manifestation..

downward slippery slope in connection with probing the *ultimate verities* of existence. Surveying the plethora of mathematically-based theories and counter-theories amongst modern cosmologists, he cannot discern a durable and self-consistent doctrine. For example, Hawking and Penrose in the 1970s proved that there must have been a big bang singularity (based on the assumption of the correctness of the general theory of relativity and the Universe containing as much matter as currently observed). But Hawking himself has undergone a complete U-turn (as he himself freely admits) and is now convinced that once quantum effects are included, there was in fact no singularity at the beginning of the Universe.<sup>17</sup> Even now, new cosmological models are being proliferated and Western science seems not to have settled down to a unified and comprehensive view of cosmogony—let alone one that includes the dimension of human feeling and other subjective aspects of experience that are just as much, if

not more, 'real' than the physical aspects of Nature to which Western science confines itself.

Besides the mechanical aspects and behaviour of the Universe, in other words, WHAT happens (so admirably described by Western science), he also

needs to know THAT out of which the Universe emerges, HOW and WHY it does so, what LAWS govern its periodic emanation and dissolution, and to what PURPOSE. In short he needs more **TRUTH**. A truth seeker is simply not prepared (in fact regards it as naive) to wield Occam's razor and arbitrarily slice off those awkward issues that are beyond the intellectual horizon<sup>18</sup> of Western science, such as the state of affairs before the supposed Big Bang. Western science may, if it chooses, regard questions about pre-Big Bang factors (when time and space did not exist) as a mark of intellectual adolescence. But the deeper reflection of a seeker indicates that the visible Universe is the outward projection of innate *intelligence*; therefore *not* to inquire of causative influences before the Big Bang is surely a sign of philosophical immaturity. Nothing short of a self-consistent doctrine of Cosmos *in actu* will suffice.

## FUNDAMENTAL PARTICLE RESEARCH – PURE SCIENCE OF THE TWENTY FIRST CENTURY

A truth seeker wonders whether the secrets of the Universe can ever be unlocked by the mega-costly machines around the world, and especially at CERN, ostensibly on the frontiers of pure scientific research. Fully appreciating that for a modern age, appropriate money must be spent on physical experiments, yet he wonders whether it is now time to call a halt—enough is enough. Would not a

17 Stephen W. Hawking, *A Brief History of Time*, Bantam Press, 1988, p. 50.

18 Interestingly, Western science speaks of an 'event horizon' as the boundary of a region of space-time from which it is not possible to escape, such as the boundary of a black hole. But Western science itself has its own 'intellectual horizon' beyond which it finds itself well-nigh impossible to penetrate, and therefore in the last resort uses the principle of economy known as Occam's razor, or the intellectual knife, to cut out what it cannot physically observe, or cannot explain in terms of its own models—see Part II.

---

**Cosmology has not as yet provided a consistent account of physical Nature, let alone one that caters for human experience, which is just as much a part of 'reality'**

---

---

**If well over £10 billion is needed supposedly to unlock the secrets of the Universe, could it not be that a radical change of approach is needed by science in preference to gargantuan sums of taxpayer's money. Were not the very greatest of scientific discoveries, by Newton, Leibniz and Einstein for example, accomplished with concentrated mind, paper and pencil, the simplest of physical apparatus, and the human eye as the sensitive instrument of perception?**

---

small fraction of this money be better spent on technology of greater humanitarian benefit, such as pollution-free cars and solar heating?

A seeker wonders whether Western science is hopelessly confusing science with technology. Did not Churchill once remark that 'science should not be on top; it should be on tap'? He is alarmed by the irreconcilable statements emerging from Nobel laureates in physics: for on the one hand, they authoritatively declare consciousness to be the fundamental reality—with matter (as Western

science understands it) being an illusion of the senses (e.g. Nobel-laureate Wigner<sup>19</sup>); whilst on the other hand, (Nobel physicists from CERN for example) state with equal authority that their clear research objective is to 'probe the heart of matter'—the fundamental building block of matter being what pure science is all about.<sup>20</sup> How do CERN physicists view Einstein's declamation, 'Science cannot solve the ultimate mystery of nature'? *Even more pertinent is Heisenberg's comment that 'We will have to abandon . . . the concept of fundamental elementary particles. We should accept instead the concept of fundamental symmetries, which is a concept out of the philosophy of Plato.'*<sup>21</sup> There is no doubt that an obsession with matter *per se* is (again) at the very forefront of Western scientific research. The promising insights from quantum physics, such as the interaction of the physicist with his experiment and the role of consciousness, seem all to have been swept aside by a new upsurge of technologically-fuelled materialism promised for the early twenty first century. Are super-expensive particle accelerators used like toys to generate particles *ad infinitum* ever going to bequeath to science (let alone to humanity) its elusive Holy Grail? Perhaps the Higgs boson could be Nature's ultimate 'particle *par excellence in abscondito*'. Perhaps there may even be still undiscovered subquarks corresponding to the 'ultimate physical atom' clairvoyantly observed by Annie Besant and C. W. Leadbeater.<sup>22</sup> There appear to be scientific grounds for such an assertion.<sup>23</sup>

\* \* \*

Our truth seeker, a genuine scientist at heart, is saddened that so many Western scientists seem to think that, at rock-bottom, there is **nothing more** than a

19 E. P. Wigner in E. P. Wigner, ed., *Symmetries and Reflections*, Indiana University Press, 1967, p. 172.

20 For example the discovery by Simon van der Meer and Carlo Rubbia of important new particles, W and Z bosons. (Boson is the collective name for mediating particles that carry forces between particles of matter.)

21 Werner Heisenberg, *Science*, March 19, 1976, 1165.

22 Annie Besant and C. W. Leadbeater, *Occult Chemistry*, Theosophical Publishing House, 1919. Also in C. W. Leadbeater, *The Chakras*, Theosophical Publishing House, 1977, p.43.

23 Stephen M. Phillips, *Extra-sensory Perception of Quarks*, Theosophical Publishing House, 1980; and Stephen M. Phillips, *ESP of Quarks and Superstrings*, New Age International Publishers (to be published).



---

**A truth seeker wonders whether these fame-aspiring scientists who are trying to understand Nature and the Universe actually understand themselves, their own minds and above all else, their *motives*<sup>24</sup>, and if not, with what authority they speak about the Universe. Perhaps if scientists truly understood themselves, they would understand the Universe, for how can these two facets be disconnected?**

---

chance coming together of nuclear particles and forces to make a cosmos and man. Without a Divine impress and reflection in matter, how can the latter behave as they do with such consistency and variety according to what Western science calls the 'laws of Nature'? Hence, discovering for himself (not merely by hearsay word of mouth) how Western science—locked in its frenzied excesses to find that 'ultimate fundamental particle'—finds it hard to distinguish the 'map from the territory', and

confuses quantitative, machine-generated data with in-sights, our truth-seeker is increasingly haunted by Heisenberg's<sup>25</sup> dying words that 'the world is *illusion*'. Finding that the grand Occult doctrines on cosmogony provide a superbly self-consistent 'Sutratma' thread of wisdom encompassing all ages, since time immemorial, he is now all the more convinced about what HPB said over a century ago:

**Now that they have studied Nature in the length, breadth, and thickness of her physical frame, it is time to remove the skeleton to the second plane, and search within the unknown depths for the living and real entity, for its SUB-stance—the noumenon of evanescent Matter. . . . Kosmos, besides its objective planetary inhabitants . . . is full of invisible, intelligent Existences.**<sup>26</sup>

## CONSCIOUSNESS IN ABSCONDITO

**KEYWORDS:** brain, molecular interactions, reductionism, non-material stuff, coincidence, experience

Along with the single-minded determination of Western science to track down the fundamental material particle and understand the nature of light is the other subject of recent frenetic research—consciousness. (An Occultist would immediately see the reason for the close relationship between the Holy Grail and the Holy Cow of scientific research, i.e. light and consciousness.)

We deal only with the latest, modern scientific theories on consciousness. But it is interesting to recall briefly what was arguably the most renowned concept about consciousness and soul from classical science—the ideas of René Descartes (1596–1650). Fig. 2.4 shows Descartes' notion that the seat of the soul was the teardrop-shaped pineal gland, situated in the main cavity in the centre of the

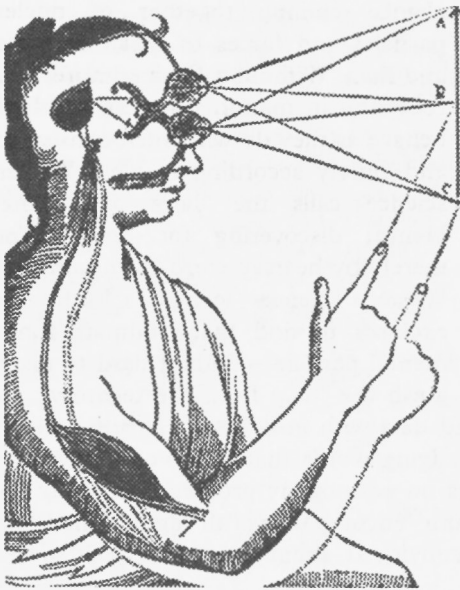
---

<sup>24</sup> We must ask whether the motive is predominantly truth or fame and fortune, i.e. the gratification of ego.

<sup>25</sup> Previously quoted in Section 1.

<sup>26</sup> SD-2, pp. 335–6.





**Fig. 2.4** Consciousness and Soul According to Descartes

brain, where he believed that matter and spirit intersected. It was through the agency of the pineal gland that the immaterial soul (*res cogita*) could affect matter (*res extensa*).

## Modern Scientific Theories on Consciousness

The explosive ascent of sophisticated modern technology has encouraged mega-costly research into brain function, which has until recently, lagged behind other areas of research in the physical sciences because of the difficulty of investigating a living organ without destroying or damaging it. Since the mid-1980s however, scientists have used non-invasive techniques such as micro-electrodes, and scanning methods using positron emission tomography (PET) and magnetic resonance

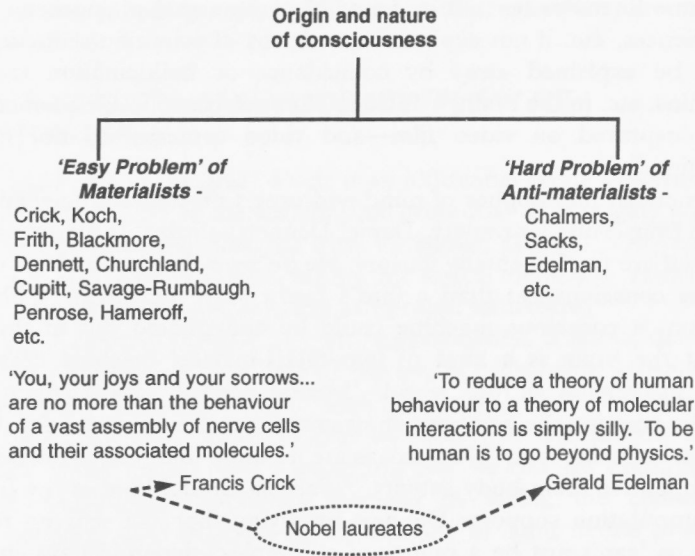
imaging (MRI). This new brain science which is supposed to challenge our deepest convictions about self, who we are, where we come from, etc., is currently producing an avalanche of theories on consciousness *in abscondito*. The problem divides neatly into a duality (not surprising): materialists and anti-materialists. The former group regard consciousness purely as a function of brain activity. Their goal is the 'easy problem'—explaining how the brain executes its various data processing tasks. The latter belong to the 'hard school' and force the issue of the 'hard problem'—that understanding brain functions does not necessarily mean an understanding of consciousness.

The following is a representative cross-section, by no means exhaustive, of the very latest ideas from the materialist and the countering anti-materialist group of science researchers of world standing, many of whom have written tomes explaining their version of what consciousness is all about—see Fig. 2.5.

## MATERIALISTS – THE 'SOFT PROBLEM' OF CONSCIOUSNESS

This group is championed by Nobel prize-winner Francis Crick,<sup>27</sup> co-discoverer of the double-helix form of DNA. Crick confidently claims he knows what consciousness is—quite simply the effect of brain cells oscillating across the neocortex at a frequency of 40 hertz (cycles per second). He says:

<sup>27</sup> A full exposition of Crick's invincibly reductionist philosophy may be found in Francis Crick, *The Astonishing Hypothesis: The Scientific Search for the Soul*, Simon & Schuster, 1994.



**Fig. 2.5** Consciousness *In Abscondito* – Conflicting Modern Theories on the Origin and Nature of Consciousness

**You, your joys and your sorrows, your memories, and your ambitions, your sense of personal identity and your free will, are no more than the behaviour of a vast assembly of nerve cells and their associated molecules.<sup>28</sup>**

In an organ like the average human brain which has more nerve cell connections than there are particles in the whole of the known Universe (i.e. some  $10^{80}$ —thanks to science<sup>29</sup> we know this) the above is certainly a bold statement to make! Crick's close collaborator, Christof Koch, knows that consciousness is all in the brain. For him the principal challenge is to discover a 'neural correlate of consciousness,' i.e. states of consciousness correlated to their corresponding, specific brain activities. Koch explains that the neural correlate is the interaction between 'naively put, neurons in the visual part of the brain project[ing] forwards to the prefrontal [cortex], and the prefrontal look[ing] back at the high-level visual output.' Crick and Koch postulate that a *fully conscious experience* is generated when explicitly coded brain cells (for a musical tune for example), somehow align with numerous other neurons related to them. They must also link to the motor cortex so that the experience can generate a response. *How such links occur is not stated.*

Professor Chris Frith, a London-based cognitive neuropsychologist states categorically that consciousness is a straightforward mechanical process of molecules and material particles and no more. The psychologist Susan Blackmore

<sup>28</sup> Except where stated otherwise, quotations are taken mainly from material in the *New Scientist* and the proceedings of the Tucson Conference in 1994 and 1996.

<sup>29</sup> Stephen W. Hawking, *A Brief History of Time*, Bantam Press, 1988, p. 129.

tows the same line. For her, all evidence of para-normal phenomena or out-of-body experiences, etc. if not explainable in terms of scientific reductionism, can adequately be explained *away* by coincidence or hallucination triggered by endomorphins, etc. in the brain.<sup>30</sup> Incidentally such inexplicable phenomena have even been captured on video film—and video cameras do not operate on endomorphins.<sup>31</sup>

The American philosopher of mind and expert on neurobiology and artificial intelligence from Tufts University, Daniel Dennett informs us that consciousness, mind and self are fundamentally illusory. He believes that brain cells are no more essential for consciousness than a bird's feathers are for flight. With the right configuration, a conscious machine could be constructed out of tin cans. He asserts that the brain is a kind of hypothesis-making machine ceaselessly re-patterning its version of the world. 'Mental states,' says Dennett, 'become conscious by winning the competition against other mental states for domination in the control of behaviour.' We humans are no more than just the organization of all this competitive brain-body activity.<sup>32</sup> Patricia Churchland of the Institute for Neural Computation supports Dennett by saying that she sees no reason why consciousness 'can't just be a matter of a complex, dynamical system doing its thing.' And for Sue Savage-Rumbaugh from Georgia State University, 'The mind of the ape cannot be that much different from our own.' She passionately believes apes to have a well-developed consciousness.<sup>33</sup>

The Reverend Don Cupitt is a prominent philosopher of a materialistic religion underpinned by the latest work on artificial intelligence. For him 'consciousness is just electronic waves of excitation. What we are used to calling the mind or the soul is entirely on the surface of our heads and bodies—understanding finds its origin in the motor nerves . . . The days are gone when we [meaning he<sup>34</sup>] believed in the soul and free will, that the inner life is of supreme importance. The soul, the self, has died. The self is an animal . . .' (Why then does he still retain his title of Reverend?)

An interesting pseudo-materialistic stance is taken by Roger Penrose of Oxford University and Stuart Hameroff of the University of Arizona. Drawing on quantum theory, Penrose argues that the human mind can perform feats that neural networks and computers modelled on them can never do—the uncertainty of quantum events providing a non-computable way for understanding to arise in the brain. They propose that cylindrical tubes of protein molecules inside nerve cells, called tubulin, might provide a containment in which quantum events could multiply until they became powerful enough for uncertainties to resolve into outcomes. Consciousness therefore, arises from quantum-mechanical processes taking place within these tubes of protein, and each time hosts of tubulin

30 Susan Blackmore, *Dying to Live*, Grafton, 1993.

31 The writer has some personal experience of this.

32 All this is detailed in his book *Consciousness Explained*.

33 The anthropogenesis sections of *The Secret Doctrine* explain in detail the true relationship between man and his product, the anthropoid apes.

34 By 'we' he means he himself. The reader should *beware* that the term 'we' as used by such scientists and materialistic philosophers really means 'they themselves and their followers'. The 'we' is not as universally acknowledged as they would like to imagine.

molecules suddenly and spontaneously resolve their quantum uncertainties, we have an experience.

## ANTI-MATERIALIST – THE ‘HARD PROBLEM’ OF CONSCIOUSNESS

On the opposite side of the great divide is an influential group of scientists known as holists or dualists (and to the materialistic orthodoxy as surrogate mystics) who insist that consciousness is different from all known physical phenomena. Their anti-materialistic stance is driven mainly by logical demands, rather than any inclination towards a religious, mystical or spiritual dimension.<sup>35</sup>

For Australian-born David Chalmers, consciousness is not of this world, the Universe being constituted not only of matter, but also of a non-material stuff that is beyond the scope of science. ‘Merely by saying that consciousness arises from the mind,’ he says, ‘indicates that we believe it is somehow beyond the material facts of the world.’ Whilst accepting that we can, for example, trace the optical and neurological processes involved in seeing the colour red, yet explaining consciousness in terms of wavelengths of light, neural processes, etc. does not solve the problem of how we *experience* the colour red, or ‘what it is like to be me.’

The neurologist Oliver Sacks says ‘Many of these new mechanistic versions of the human person are not only unsatisfying, they are outrageous.’ He believes that a human being is not just like a watch or a computer and that science will never fully explain consciousness.

Nobel laureate Gerald Edelman describes the simplistic, materialist reductionism of Crick *et al* as absurd, saying

**To reduce a theory of human behaviour to a theory of molecular interactions is simply silly.’ Quoting Diderot, he declares that ‘To be human is to go beyond physics.’**

But while the anti-materialists are alarmed at the prospect of mechanistic neuroscience downgrading humanity to the level of robots and animals, the countering materialists—the official arm of science, declare that they have won the day. Crick says that ‘A modern neurobiologist sees no need for the religious concept of a soul . . . Our minds can be explained by the interactions of nerve cells and molecules.’

## A Truth-Seeker’s Commentary and Dismay

A strictly objective and impartial bird’s-eye view of the current consciousness debate (or row!) shows that amidst the jungle of conflicting theories, each scientist upholds his particular view as the supreme, one-and-only answer to the

<sup>35</sup> One of several exceptions to this is the fine book by E. Lester-Smith F.R.S., *Inner Adventures*, Theosophical Publishing House, 1988. It is a comprehensive study of the mind that combines scientific rigour with spiritual wisdom in equal measure, and shows that consciousness cannot possibly have its seat in the material brain.

mystery of consciousness, to the virtual exclusion of other viewpoints. The inconsistencies and contradictions within the materialistic camp alone, quite apart from those between materialist and non-materialist are transparently obvious. For example, tin cans, or any other material for that matter, would have to vibrate at precisely 40 hertz across the neocortex for the ideas of Crick and Dennett (both materialists) to be compatible with each other. More significantly in terms of their absurdity are statements like: consciousness is 'no more' than nerve cell and molecular behaviour (from Crick); or a mechanical process and 'no more' (from Frith); or 'just' electronic waves (from Cupitt). These epithets '*no more*' and '*just*' indicate that effects are being hopelessly confused with causes, or phenomena with noumena. *Whereas it is logical to attribute a 40 hertz oscillation, or electronic waves, etc. to one of the final outcomes on the physical plane of a concatenation of a long series of causes and effects, however to assert that these various manifested effects of consciousness as observed in the matter of the brain constitute the underlying cause and origin of consciousness and 'NO MORE', is about as witless as saying that Einstein's 1915 paper on the General Theory of Relativity was just the mechanical flowing of ink under hydraulic pressure from his pen onto the paper—and no more.*

---

**The manifold effects of consciousness on the physical plane are confused with the origin and nature of consciousness itself.**

---

(Could all this heated brain research be causing a softening of the neocortex of the researchers?)

Fig. 2.5 shows one example of the inconsistency between the materialist

and anti-materialist faction, namely the contradictory views of Crick and Edelman, both Nobel laureates.

Finally, if the answer to the nature of consciousness is all so simple and cut-and-dried, as each scientist with his own pet theory would claim, then can these very scientists ask themselves why is it that when the first Journal of Consciousness Studies was launched in 1994 (now it is one of the fastest growing academic journals in recent decades), it published a bibliography of over one thousand recent specialist articles? Why have over a thousand articles along with all the associated scientific mud-slinging, if consciousness were discovered *in actu* as opposed to its manifold effects as appearances *in abscondito* in one form or other on the physical plane? Why are laboratories around the world humming with brain-related experiments that often entail humiliation or cruelty to animals? Why also are there currently dozens of forums and symposiums with overall themes such as 'Beyond the Mind' and 'Brain and Mind'—for example 800 scientists and philosophers gathered at the second Tucson Conference 'Towards a Science of Consciousness'?

It seems that the whole problem stems from 'putting the cart before the horse', that is, the error of regarding consciousness as a by(product) of the interaction of biological matter, or some other non-physical mechanism. The entire issue may be resolved by the unerring insight of the great seers, one of whom in our ultra-modern age declared:

The cosmic order behind things is a divine one . . . It is creative, intelligent, conscious—it is MIND.

PAUL BRUNTON<sup>36</sup>

## SOUND AND LIGHT IN ABSCONDITO

We now consider Western scientific effort to investigate what is, for it, virtually synonymous with reality—the nature of light. Before that, and for a good reason, we briefly summarize how Western science explains the nature of sound.

### THEORIES ON SOUND

KEYWORDS: longitudinal wave, transverse wave, vacuum, medium

It is a fundamental requirement that a source of vibration exists to emit a sound. Sound waves are longitudinal waves characterized by density or pressure fluctuations in the physical medium of propagation. In air, for example, a sound wave is a series of alternate compressions and rarefactions of the air that propagate outwards from the centre of vibration. Sound waves require a physical medium (solid, liquid or gas), so unlike light, cannot propagate through a vacuum. The speed of sound in any medium depends on the properties of the latter, such as elasticity and density. So if the speed of a body in a fluid medium exceeds the sonic speed in that medium, an acoustic shock wave is formed (for example by supersonic aircraft).

### Sound and Light – Some Basic Differences

The table overleaf highlights some important differences between sound and light that are relevant to our purpose (this is not meant in any way to be an exhaustive tabulation of technical details).

\* \* \*


The mathematical treatment of the theory of sound was founded by Sir Isaac Newton (1642–1727) in his *Philosophiæ Naturalis Principia Mathematica* (Mathematical Principles of Natural Philosophy) in 1686. Since that time, there are, as yet, no fundamental disagreements in what Western science regards as the nature of sound, (i.e. oscillations in a physical medium caused by a source of vibration, as stated above). This is one area where Western science is currently in harmony with itself. Nevertheless, the writer speculates that the struggle to

<sup>36</sup> *The Notebooks of Paul Brunton*, Vol. 16, *Enlightened Mind, Divine Mind*, Part 2, p. 3. Note that the cosmic order is referred to simply as 'MIND'—not a MIND.



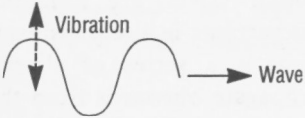
	Sound	Light
Medium of propagation	Any physical medium (solid, liquid or gas).	Before Michelson-Morley experiment in 1880s and special theory of relativity in 1905, ether was regarded as the medium. Ever since, no medium is considered necessary because light waves are self-propagating.
Transmission through vacuum possible?	No	Yes
Can speed of transmission be exceeded?	Yes. A body may travel faster than the speed of sound in a fluid medium.	No. Speed of light considered a constant in Nature.*
Correlation with frequency, amplitude, waveform	Pitch Loudness (intensity) Quality (timbre)	Colour Brightness —
Vibration of waves	Longitudinal vibrations in same direction as direction of wave propagation.	Transverse vibrations perpendicular to direction of wave propagation.

Vibration ←



→ Wave

Vibration



→ Wave

\* Exceeding the speed of light is becoming an increasingly controversial subject (more later).

understand the true nature of sound and its close association with consciousness and mind, *as opposed to its manifested effects on the physical plane*, will cause Western science as much apprehension and confusion in the next century, as did the study of light in previous centuries and our own.<sup>37</sup> Accordingly, at this juncture, the reader is invited to ponder strenuously over the correspondences (rather than differences in physical mechanisms of propagation) between the nature of sound and light, and particularly, to establish whether they might both be rooted in a common origin. This will all be amplified in Part III.

## THEORIES ON LIGHT

**KEYWORDS:** particle, wave, interference, quantum, action-at-a-distance, probability, indeterminacy, participator, consciousness

The study of light in any age mirrors the predominant quality of scientific thought of that age, so affording us a clue to the general climate of consciousness then

37 The reason for such speculation will become clear when the intimate relation between consciousness and sound is explained in Part III.

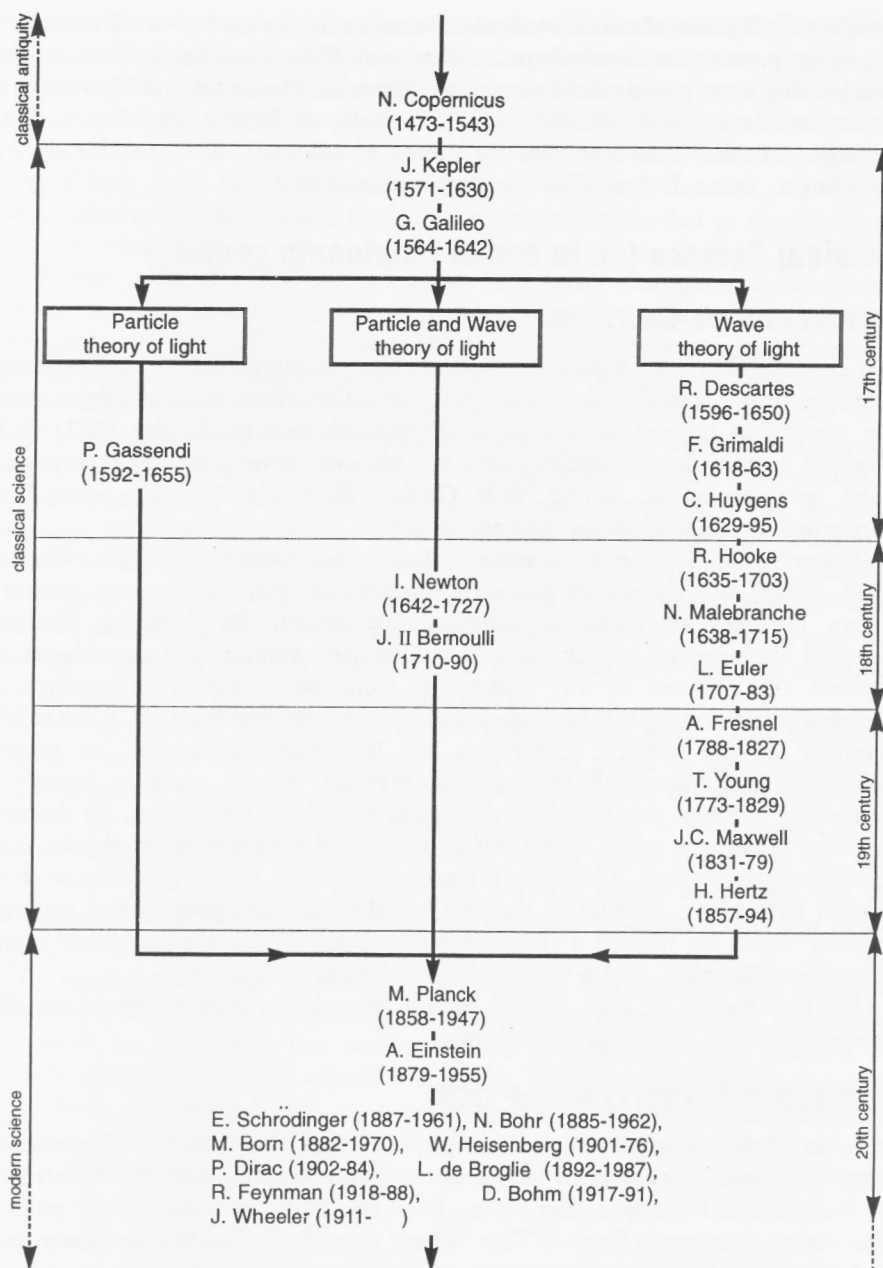


Fig. 2.6 Historical Survey of Key Developments in the Theory of Light



prevailing.<sup>38</sup> Fig. 2.6 shows historical milestones in the evolution of a theory of light encompassing the classical and modern eras. One sees a fascinating historical chain leading from pre-classical physics to Gassendi, Descartes and Newton; from Newton to Young and Maxwell; and eventually to Planck and Einstein, and physicists of the quantum era of modern science, such as Heisenberg, Schrödinger, Dirac, Bohm, Wheeler, Feynman and Bell.

## Classical Science (up to end of nineteenth century)

### SEVENTEENTH-CENTURY OPTICS

That century witnessed a shift in emphasis from inquiry into the mechanisms of vision, i.e. physiological optics, towards investigation of the nature of light—optics as a branch of physics. In the early seventeenth century Kepler (1571–1630) described human sight in similar terms to a pinhole camera, with light forming an image on the retina. Along with Galileo (1564–1642), both contributed enormously to the advancement of astronomy.

There were two rival theories about the nature of light. Gassendi (1592–1655), the reviver of atomism, maintained that light was a stream of minute particles travelling at unimaginable speed. By contrast, Descartes proposed his ‘pressure hypothesis’ as a rudimentary version of a wave theory. He assumed that instead of any movement from one location to another, the Universe was filled with a homogeneous, transparent medium or ‘plenum’ (the precursor of the ‘ether’). Light was the ‘tendency to motion’ or pressure transmitted instantaneously through this plenum. But in order to forge some connection between this idea and the world of sensate experience, he devised a system of vortices in which space was entirely filled with matter, in various states, whirling about the sun. Christaan Huygens (1629–95) whose valuable work was eclipsed by Newton, developed the idea of light as a wave propagating through a medium which he termed a ‘luminiferous ether’. Other proponents of a wave theory were Grimaldi (1618–63) and Robert Hooke (1635–1703).

No one theory of light gained overall precedence over its rivals and both theories had their respective difficulties.

### EIGHTEENTH-CENTURY OPTICS

Sir Isaac Newton’s achievements in optics are legendary. In his ‘Hypothesis of Light’<sup>39</sup> Newton supposed an ‘aethereall Medium’ not of ‘one uniforme matter, but compounded partly of the maine flegmatic body of aether [and] partly of other various aethereall Spirits.’ This ‘Æther’ pervaded all bodies and space and is a ‘vibrating medium’. ‘Light is neither this Æther nor its vibrating motion, but something of a different kind propagated from lucid bodies.’ Light was

<sup>38</sup> This is no surprise on account of the close association of consciousness with light as also explained later in Part III.

<sup>39</sup> Extracted from *The Correspondence of Isaac Newton*, eds. H. W. Turnbull, J. F. Scott, A. Rupert Hall and Laura Tilling, 7 vols. (Cambridge: Cambridge University Press, 1959–77), vol. 1, pp. 362–83. Note the care with which Newton states his views in terms of a *hypothesis*, and not a theory of light.

'Successive rayes' comprising 'an aggregate of various peripatetic qualities,' or 'multitudes of unimaginable small and swift Corpuscles of various sizes, springing from shining bodies . . . and continually urged forward by a Principle of motion . . . till the resistance of the Aethereall Medium equal the force of that principle.' Newton thus proposed both a particle *and* an undulatory or wave theory of light, but, being over three centuries ahead of his time, he did not satisfactorily knit together these two aspects, and rather tended to emphasize the corpuscular theory.<sup>40</sup>

Newton's work provided the springboard for many subsequent developments of his ideas, such as the concept of micro-vortices in the ether suggested by Malebranche (1638–1715). J. II Bernoulli (1710–90), drawing upon the work of Huygens, Newton and Malebranche wrote a treatise 'Recherches', describing his ether model and concept of a light fibre. The ether was assumed to consist of an infinite number of minute, active vortices<sup>41</sup> each seeking to extend itself because of the centrifugal force of its parts; this was supposed to explain the elasticity of ether particles. Extra, small and hard particles were supposed to be scattered throughout the ether to account for the propagation of light and the creation of colours. The movement of these particles was due to the ether pressure caused by the compression of the micro-vortices. This theory of light has similar overtones to Newton in that it posits a combination of particle and wave. Bernoulli regarded a heterogeneous light beam as a bundle of homogeneous fibres that, for refraction to occur, disintegrate into their component parts.

By contrast Euler<sup>42</sup> (1707–83) proposed an essentially wave theory of light in his 'Nova theoria' in 1746, pointing out the obstacles posed by assuming light to travel as a stream of particles. The theory of the vibrations of sound waves was applied to the vibrations of light. He remarked that sunlight is 'with respect to the ether [the term that replaced 'plenum'], what sound is with respect to air,' and that the sun was 'a bell ringing out light'—a beautiful phrase suggesting that the great mathematician might have intuited the intimate connection between sound and light (as explained in Part III).

The fundamental issue however in this century, was whether light could be explained in terms of the emission of particles, or the propagation of waves in a subtle medium. Although the particle theory gained supremacy because of Newton's ideas dominating scientific thought, the wave theory also received support both in England and on the Continent. Both the particle theory of Newton and wave theory of Huygens and Euler could adequately (then) account for the reflection and refraction of light.

40 As succinctly stated by HPB, 'Sir Isaac Newton held to the Pythagorean corpuscular theory, and was also inclined to admit its consequences . . . '—SD-2, p. 207.

41 The writer speculates that the active vortex ideas of the somewhat metaphysically-inclined Descartes, Malebranche and Bernoulli could be a counterfeit of the Occult doctrine about 'Fohat digging holes in space'.

42 A masterly account of Euler's theory and others in the eighteenth century is given by Casper Hakfoort, *Optics in the age of Euler*, Cambridge University Press, 1995.

## NINETEENTH-CENTURY OPTICS

In a renowned experiment in 1801, Thomas Young (1773–1829) arranged a light source in front of a single hole, in turn positioned in front of two holes placed in front of a screen, as shown in Fig. 2.7. Common sense would expect the overlapping beams of light to produce, on the screen, two bright patches directly in front of each hole, with a dark shadow in between them. But in fact the twin beams of light emerging from the two holes were found to produce alternate light and dark bands on the screen with the brightest section in between the two holes. Young ascribed this phenomenon to the interference of light—constructive interference being the superimposition of the crest of one wave series with another; and destructive interference being the superimposition of the crest of one wave series with the trough of another. Young's ideas were taken further by Fresnel (1788–1827) who proved the wave nature of light.

Early nineteenth-century work on the wave nature of light was brought to a magnificent conclusion towards the end of that century by the extension, in part, by Maxwell (1831–79) of Faraday's ideas on the propagation of magnetic and electric effects through space. Maxwell's electromagnetic theory of light, with added evidence from the transmission and reception of radio waves by Hertz (1857–94) represented the crown jewel of classical science on light—see Fig. 2.8. But ultimately, it was the partial failure of this wave theory (to account for experimental observations), that gave the impetus to the quantum theory of Planck and the photon theory of Einstein in the early twentieth century.

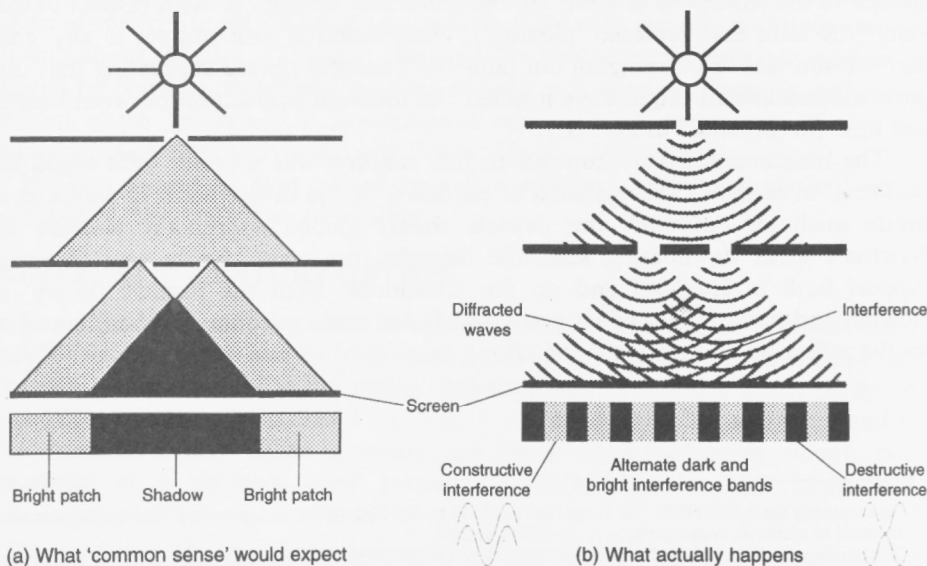


Fig. 2.7 Two-Hole Experiment to Prove Wave Nature of Light

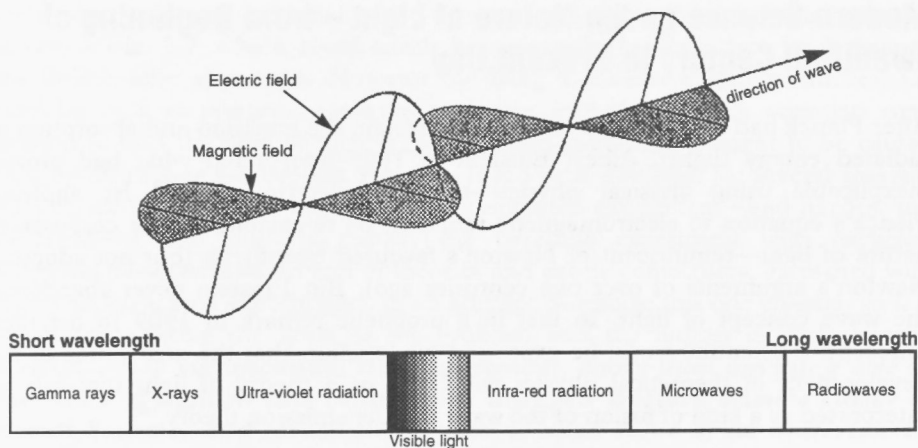


Fig. 2.8 Classical Theory of Light as an Electromagnetic Wave

## INTERFACE WITH MODERN SCIENCE (AROUND TURN OF TWENTIETH CENTURY)

Towards the close of the nineteenth century, science was secure in its understanding of electromagnetic radiation, or light. However the nature of the spectrum of radiation (light) emitted by a hot body still needed to be resolved. In 1900, Max Planck (1858–1947) realized that this radiation could be explained if bodies were considered to emit and absorb radiation only in specific amounts, not smoothly and continuously—ever since Newton, physicists had assumed radiation to flow continuously. Planck however considered radiation to be emitted in ‘spurts’, or non-continuous, discrete energy packets, which he called *quanta*.<sup>43</sup> (For example, the photon is the quantum of the electromagnetic field, i.e. a photon is a particle of light.) His famous equation directly relating the energy  $E$  of each quantum of radiation to its frequency  $f$  is  $E = hf$ , where  $h$  is a fundamental unit of action known as Planck’s constant. This ushered in the era of quantum physics. (For completeness it must be stated that the process of scientific awakening that was to undermine the materialistic foundation of classical physics was occasioned by five events around the turn of the twentieth century: (1) 1897 – the discovery of the electron by J. J. Thomson; (2) 1898 – the discovery of radium by Marie and Pierre Curie; (3) 1900 – Planck’s discovery of quanta as described above; (4) 1905 – Einstein’s famous equation  $E = mc^2$  showing that energy  $E$  and matter  $m$  are interconvertible; (5) 1911 – Ernest Rutherford’s discovery that atoms were practically empty space.)

<sup>43</sup> Quantum is a Latin word meaning ‘how much’; amazingly, the near-equivalent word in Sanskrit is ‘katama’.

## Modern Science on the Nature of Light – from Beginning of Twentieth Century to Present Day

After Planck had invented the quantum to explain the emission and absorption of radiated energy (light), Albert Einstein in 1905 interpreted what had proven inexplicable using classical physics—the photoelectric effect.<sup>44</sup> By applying Planck's equation to electromagnetic radiation he re-established the corpuscular nature of light—reminiscent of Newton's favoured hypothesis (but not adopting Newton's arguments of over two centuries ago). But Einstein never abandoned the wave concept of light. In fact in a prophetic remark in 1909 to the then unreceptive scientific world he expressed his 'opinion that the next phase in the development of theoretical physics will bring us a theory of light that can be interpreted as a kind of fusion of the wave and the emission theory.'<sup>45</sup>

### CENTRAL MYSTERY OF QUANTUM PHYSICS – PARTICLE-WAVE DUALITY

The central mystery in quantum physics is encapsulated in the following quotations from three Nobel laureates in physics who candidly professed their bafflement at the incongruous outcome of their experimental findings. (One truly wonders what their feelings might have been with access to the Occult doctrines. Robert Millikan (a Nobel laureate) was deeply interested in *The Secret Doctrine* and it is likely that he and possibly Gustav Strömberg interested Einstein in *The Secret Doctrine*. According to his niece, Einstein always had a copy of it on his desk in the last years of his life. Furthermore, Hubble and many of his contemporaries were interested in Theosophy.<sup>46</sup>)

**All these fifty years of conscious brooding have brought me no nearer to the answer to the question 'What are light quanta?' Nowadays every Tom, Dick and Harry thinks he knows it, but he is mistaken.**

ALBERT EINSTEIN IN A LETTER TO M. BESSO

**Can Nature possibly be as absurd as it seemed to us in these atomic experiments?**

WERNER HEISENBERG

**I think it is safe to say that no one understands quantum mechanics.**

RICHARD FEYNMAN

Young's experiment had established the indubitably wave-like nature of light.

44 The ejection of electrons from metals by an incident beam of light of the appropriate frequency band upon the latter.

45 John Gribbin, *In Search of Schrödinger's Cat*, Black Swan, London, 1994, p. 82.

46 This fact is fully documented in (a) Sylvia Cranston, *Reincarnation, The Phoenix Fire Mystery*, Theosophical University Press, 1994, pp. 513, 603; (b) Sylvia Cranston, *HPB, The Extraordinary Life and Influence of Helena Blavatsky, Founder of the Modern Theosophical Movement*, G. P. Putnam's Sons, 1993, p. 605.

Only waves, it was thought, could produce the kind of interference patterns shown in Fig. 2.7, which could hardly be expected if *particles* were fired through the double-hole apparatus. However by firing *individual* quantum entities, i.e. particles such as photons, electrons and even individual atoms, scientists were amazed to find the kind of interference patterns previously thought to be caused only by diffracting waves—see Fig. 2.9. It is worth dwelling, for several reasons, on what could well have been the most celebrated experiment—and hardest nut to crack—of this century, namely the two-hole experiment with particles. Scientists have lavished no end of theories and exotic conjectures, garnished with highly sophisticated experiments, in an attempt to resolve this one enigma; so it is worth appreciating the scale of the problem and the import of their strange findings. ***More significantly, this experiment, more than anything else in the study of light in this century has dragged Western science closer to Occult Science, and forced the former to shed some of its materialistic bias by invoking holistic attitudes, and including the central role of consciousness.*** For ease of understanding, the experiment is summarized with reference to electrons. However as stated above, the results apply to any particle used in the two-hole experiment, and its many variations.<sup>47</sup>

## TWO-HOLE EXPERIMENT WITH ‘CONSCIOUS’ ELECTRONS

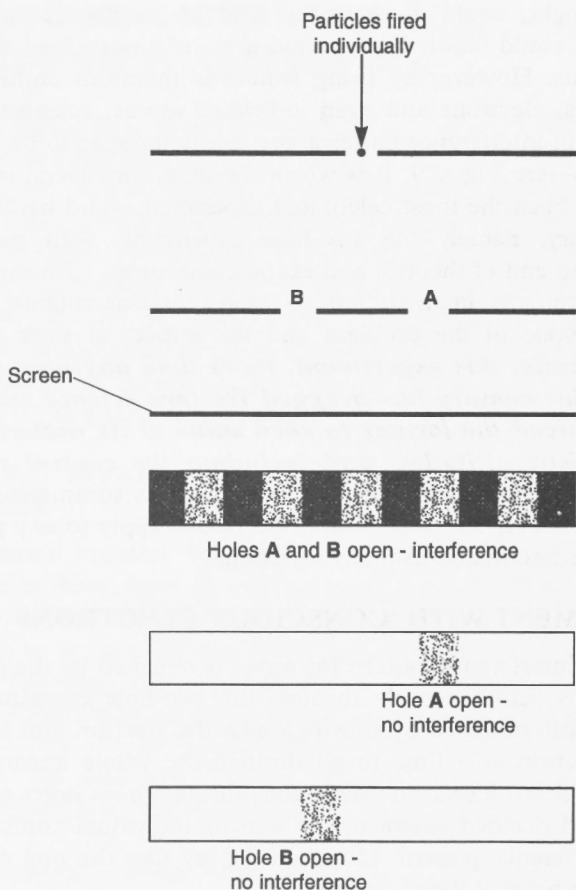
*What scientists found:* the interference pattern for waves is obtained by the passage of thousands of electrons simultaneously through the two-hole experiment. A similar, wave pattern is also obtained by slowing down the electron gun so as to allow just one *single* electron at a time to go through the whole apparatus as shown in Fig. 2.9. Each electron seems to have gone through both holes at once, interfered with itself, and decided where to position its individual contribution towards the overall interference pattern. How can we say that the one electron passes through both open holes at the same time?

*The mystery:* if one hole is closed and the other left open, no interference occurs—see again Fig. 2.9. But with both holes open and *one electron at a time*, we get the interference pattern, as stated above. So how does the electron ‘know’ whether or not the other hole is open? Scientists have tried to ‘fool’ the electron by opening or shutting one of the holes after the electron has left the gun, and during its transit between the gun and the hole(s). But the pattern on the detector screen is the one corresponding to that *for the state of the holes at the instant when the electron was released*, i.e. an interference pattern if both holes were open, but no interference if any one hole is open, at the instant when the electron left the gun. The electron appears to choose a trajectory at one hole which depends upon its knowing whether or not the other hole was open at the same time.

If an arrangement is made to record the specific hole through which the electron passes, there is no trace of interference, i.e. the electron passes through one or other hole, but not through both. Somehow the electron going through the

<sup>47</sup> Variations on the principle of the two-hole experiment display the same particle-wave duality. For example, light reflected off two individual atoms also displays interference.





**Fig. 2.9** Two-Hole Experiment With Single Particles Produces Interference

second hole knows that the first hole is being observed, and therefore decides to behave as a particle (so producing no interference). Even if the detector is switched on to look for particles (electrons) after the electron has left the gun, the outcome still depends on the whole experimental set-up.

*What appears to be happening:* when interference occurs, the electron leaves the gun as a particle, behaves as a wave in its transit through the two open (and unobserved) holes, and finishes as a particle on the screen. But with detectors to observe the electrons at the holes, the electron 'sees' the experimenter who observes the hole through which the electron passes, and 'behaves' accordingly—as a particle. The experimenter always detects an electron passing through one or other hole—but never through both.

*Conscious particles?* Particles (electrons, photons, atoms, etc.) seem to be

*conscious* of two things: whether or not both holes are open; and whether or not any observer is watching them. They not only know, but adjust their behaviour accordingly. This is a vivid demonstration of the interaction of the observer with what is observed. This seeming ability of single, or countless electrons (or other quantum entities) to be aware of conditions not just local to themselves, but throughout the entire experimental set-up is known as non-locality.<sup>48</sup> As explained by Bohr, what matters is not the behaviour just of electron(s), but the whole set-up, including the human observer. Non-locality is a fundamental feature of quantum physics and will be elaborated shortly.

At this juncture, it is worth pausing to reflect that the *dual* nature of light and other quantum entities has been revealed by a two-hole experiment that reveals *alternate* bright and dark bands. There is a relativity within duality——<sup>49</sup>

## Paradigm Shift Caused by Quantum Physics

Quantum physics has necessitated five key changes which, in their totality, have amounted to an overall paradigm shift in the notion of order and measure over those prevailing in classical physics. Besides supplying a rich store of clues for esoteric philosophy, such changes all have an important bearing on the study of light—hence the prevailing consciousness of the scientific community:

1. *Indivisibility of quantum action*: in that a system changing from one state to another does so in discrete transitions ('quantum leaps'), and not in a smoothly continuous series of intermediate states, as thought in classical physics.
2. *Probabilities rather than actualities*: such that every physical situation is characterized by statistically formulated potentialities, rather than actual properties as held by classical physics. Thus at the subatomic level, matter does not exist with certainty at a specific location but shows a 'tendency to exist'; similarly atomic events do not occur at definite times and in a precise way, but show 'tendencies to occur'. These 'tendencies' are the potentialities within the physical situation.
3. *Principle of indeterminacy (uncertainty principle)*: as formulated by Heisenberg, in that the properties of conjugate (paired) observables<sup>50</sup> (such as position and momentum, or energy and time) cannot be determined with equal accuracy *both simultaneously*. For example, accurate determination of the position of a particle alters its momentum with consequent uncertainty in value of momentum. Conversely, accurate determination of momentum alters its position, with consequent uncertainty in the latter. This is because any measurement of any property of a system disturbs the dynamics of the system under investigation (by virtue of interaction with the measuring device) resulting in lesser accuracy in measurement of any other property. It is vital to

48 Einstein referred to non-locality as 'spooky action at a distance'. It is a measure of how much he was disturbed by this notion.

49 The ramifications of this statement are left as a useful exercise for the reader.

50 By 'observable' we mean an experimentally measurable property of a physical system.



appreciate that such uncertainty is a *principle in physical Nature*, having nothing to do with the errors inherent in any measurement technique. Furthermore, such uncertainty is a general phenomenon in physical Nature and is not restricted just to microscopic particles. However for macroscopic objects the uncertainty is extremely small.

This scientifically proven principle of indeterminacy has shattered the notion of strict determinism and causality prevailing in classical physics. Einstein was forced to accept the mathematical reasoning behind this principle, but, troubled by its philosophical implications, declared 'I can't believe that God would choose to play dice with the world.'<sup>51</sup> He devised the famous EPR thought experiment<sup>52</sup> to invalidate the uncertainty principle, but subsequent physical experimental data proved that he was in error as described below.

4. *Non-causal correlations associated with non-locality (instantaneous action-at-a-distance)*: such that paired particles apparently disconnected in space can communicate instantaneously. Any cause at one location produces immediate effects at distant (and disconnected) locations. However this fact is not compatible with Einstein's basic approach to relativity<sup>53</sup> which requires that the speed of light cannot be exceeded, and so nothing can link two particles *instantaneously* across space—because such communication requires a signal to travel from one place to another, and no signal can travel faster than light (more of that later). But in quantum physics such apparently disconnected particles (whatever may be the distance between them) can communicate instantaneously. For example, the electrons in the two-hole experiment mentioned above are aware of conditions, not just at the holes, but throughout the entire experiment. Non-locality has been proven to occur by a series of carefully controlled real experiments (not merely 'thought experiments') that are in good agreement with quantum theoretical predictions.<sup>54</sup> *Non-locality has tremendous esoteric implications*—that will soon become apparent.
5. *Particle ~ Wave Duality* The early 1920s saw a resolution of the dichotomy posed by the dual nature of light, which had occupied the first two decades of the century. Louis de Broglie (1892–1987) proposed that every particle in motion is associated with the propagation of a wave, and that it is impossible to separate the two.<sup>55</sup> His celebrated equation relating the momentum  $p$  of a quantum entity to its wavelength  $\lambda$  is  $p = h/\lambda$ , where  $h$  again, is Planck's constant. This equation, together with Planck's equation, resulted in a fusion

51 Alfred A. Knopf, *Einstein: His Life and Times*, New York, 1947, p. 342.

52 The 'EPR Paradox' derives its name from the joint work of Albert Einstein, Boris Podolsky and Nathan Rosen. It highlights the non-logical nature (by ordinary 'common sense' experience) of quantum reality. It was published in 1935, the same year that Schrödinger published his famous cat-in-a-box paradox.

53 There is more to relativity than even Einstein might have realized—see J. C. Polkinghorne, *The Quantum World*, Penguin Books, 1984, pp. 76–7.

54 The best example is A. Aspect, J. Dalibard and G. Roger, *Experimental Test of Bell's Inequalities Using Time-Varying Analyzers*, Physical Review Letters, 1982, Vol. 49 (No. 25), pp. 1804–7.

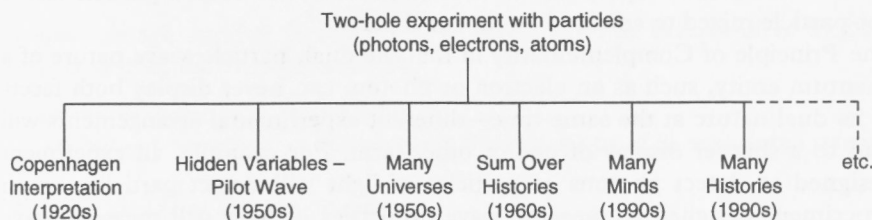
55 This applies to all objects, even our earth, except that for macroscopic objects, the associated wavelengths are far too small to detect in comparison with quantum entities. But even here an Occultist detects a clue from the quantum physicist as revealed in Part III.

of the particle and wave theories of light. Finally, Schrödinger's wave mechanics installed the particle~wave duality as a fundamental characteristic of all physical reality.<sup>56</sup>

It is now universally acknowledged in Western science that waves and particles are two aspects of one reality; and furthermore that every entity in Nature presents dual wave and particle characteristics. But this realization has not stopped scientists from devising all kinds of theories to explain and interpret the apparently anomalous, if not bizarre results of the two-hole experiment as we shall see.

## Theories in Quantum Physics to Account for Particle ~ Wave Duality as shown by the Two-Hole Experiment

Fig. 2.10 shows the main contenders in the great quantum debate on the interpretation of quantum reality, with especial reference to the two-hole experiment. Their various accounts will be summarized, differences highlighted and *pointers supplied to the manner in which Western science is ever approaching the domain of Occult Science.*



Note: All these interpretations still have their proponents.

**Fig. 2.10** Light In Abscondito: The Central Mystery in Quantum Physics – Rival Interpretations

### COPENHAGEN INTERPRETATION

The Copenhagen Interpretation was expounded principally by Bohr in 1927, but also by Born and Heisenberg. It is the standard explanation of quantum behaviour and ruled supreme from 1930 to the 1980s before being challenged by alternative interpretations.

*The challenge:* to explain the particle~wave duality, especially regarding the two-hole experiment where a particle (photon, electron or atom) starts and arrives as a particle, but travels as a wave, so producing interference.

<sup>56</sup> Schrödinger's equation can be regarded as the completion and generalization of Maxwell's equations. He invented a fundamental differential equation governing the evolution of the wave-like characteristics of physical systems. Whereas Maxwell showed light to be a particular manifestation of electromagnetic radiation, Schrödinger showed how electromagnetic radiation as a whole was fundamental to the basic physical processes of the world. This conveys a deep esoteric message as will become apparent.

*Key mechanism for explaining quantum reality:* Schrödinger's famous wave equation about how a quantum wave moves, describes the *probability of finding a quantum entity (photon, electron, etc.) at a particular location*. It says nothing about which individual particle from the overall population will be so located. Note very carefully that the quantum wave is not a material wave (such as light or anything else), but a *probability wave* travelling through the apparatus at the velocity of light.

*Cardinal concepts:* the Copenhagen interpretation depends upon four concepts –

1. Collapse of the wave function *upon observation*—or the component of subjectivity in the act of observation. (The wave function is the quantity representing the *state* of a physical system that is characterized by a wave equation.) Thus the act of observing, say, an electron wave when it goes through the hole causes collapse of the wave function, resulting in particle behaviour. As stated by Pagels: 'There is no meaning to the objective existence of an electron at some point in space, for example at one of the two holes, independent of actual observation. The electron seems to spring into existence as a real object only when we observe it!'<sup>57</sup> Before observation the electron exists in a superposition of states, that is, 'as both a particle and a not-particle mixed or smeared out in equal parts'.<sup>58</sup>
2. The Principle of Complementarity in that the dual, particle~wave nature of a quantum entity, such as an electron or photon, can never display both facets of its dual nature at the same time—different experimental arrangements will lead to a sharper display of one or other facet. For example, an experiment designed to detect photons as particles of light will detect particles; or an experiment designed to measure wave properties of light will measure wave properties—but light can never show both its particle and wave characteristics at the same time.<sup>59</sup>
3. The role of probability as previously explained. This, allied to the principle of indeterminacy, is one of the key principles in quantum physics that has broken the backbone of classical physics (along with the egos of some scientists), with its strictly deterministic laws of nature and solid material objects.
4. The assumption of non-locality, or instantaneous action-at-a-distance as explained earlier.

*Esoteric Pointers:* on the basis of the above concepts, the key role of *conscious observation and interaction with the observer* in the two-hole experiment with single electrons was summarized, mainly by Born, as follows:

57 Heinz Pagels, *The Cosmic Code*, Michael Joseph, 1982, p. 144.

58 An adaptation of Schrödinger's words in connection with his famous cat paradox, quoted from *Quantum Theory and Measurement*, John Wheeler and Wojciech Zurek, Princeton University Press, 1983, p. 157. More technically, by superposition is meant the formation of states of a system by the addition of other states, such that the combination has a certain probability of exhibiting the properties of the states out of which it is composed.

59 This 'either particle or wave, but never both' principle of complementarity was strongly advocated by Bohr. Recent experimental evidence has shown that light can be made to show both its particle and wave properties simultaneously, and so the concept is mistaken—see Part III.

- an unobserved electron literally does not exist in the form of a particle; thus
- there is a range of probabilities from high to low of finding an (unobserved) electron in the apparatus, or anywhere in the Universe; *but*
- once observed (even if seen on another galaxy), its wave function collapses, turning the *range of probabilities* into a *100% certainty* of where the electron is specifically located;
- however when observation ceases, the probability again starts to emanate out from the location where the electron was previously observed, and its probability wave spreads through the Universe. The probability of finding the electron in the last place decreases and the probability of finding it somewhere else increases.

## HIDDEN VARIABLES THEORY – THE PILOT WAVE

Hidden variables theory was the main rival of the Copenhagen Interpretation, which eventually gained popularity. First suggested by de Broglie, David Bohm (1917–1991) persisted with, and progressed this theory in the 1950s. Bohm's hidden variables interpretation<sup>60</sup> is as plausible as the Copenhagen interpretation of quantum reality, but gives different views on the latter.

*Essential concept:* hidden variables theory posits that the behaviour of a quantum entity is determined by two factors –

1. an *unobservable* field or 'pilot wave';
2. the hidden variations of which guide the behaviour of its associated particles.

The pilot wave has two key features –

1. The shape, not strength (amplitude), of the pilot wave at any location determines how particles are influenced by it;
2. The pilot wave is *non-local*; so it responds *instantaneously and everywhere* to any disturbance.

In essence then, a particle such as an electron, is a real particle in the generally accepted sense of the term, but its characteristics are determined by an associated pilot wave which obeys the rules of quantum probability. Therefore if the hidden variables could be discovered, the *actual* outcome of experiments could be predicted, not just the probability of *different* outcomes. This puts a more deterministic slant on an essentially probabilistic theory. Particles do indeed have distinct position and velocity, etc. but any attempt to measure either or both of these properties will destroy information about them by changing the (shape of the) pilot wave associated with the particle. Heisenberg's principle of indeterminacy is accepted, not as a statement of indeterminacy as such, but rather

---

<sup>60</sup> The most readable account is by David Bohm, *Wholeness and the Implicate Order*, Ark Paperbacks, 1994. This readily accessible work is a combination of science and philosophy written by one who was profoundly affected by close contact with both Einstein and Krishnamurti.

of ignorance<sup>61</sup> about the unobservable hidden variables that determine the dynamics of the pilot wave.

*Interpretation of Two-Hole Experiment:* the wave passes through the two holes and provides a kind of luminiferous 'ether sea' upon which the particles 'float' and are carried according to the movement of the waves.

*Implications and Esoteric Pointers:* in one sense therefore, particle and wave are (apparently) separated, with the particle controlled by the wave in a similar fashion to the visible colour mix on a television monitor being controlled by the invisible infrared beam from the manual controller. But in a deeper sense, there is no such distinction, for the Universe is considered an *undivided whole*. The underlying order of the world (per Bohm) is a field of an infinite number of overlapping waves; and the overlap region produces local wave 'condensations' or 'knots' that are perceived as particles.

There are further, esoteric clues especially regarding the *fundamental unity of all existence*. For the pilot wave is aware of conditions everywhere in the Universe and guides its particles accordingly. Therefore, everything in the Universe is inter-linked with everything else and instantaneously affected by any disturbance anywhere, by virtue of changes to the pilot wave. Thus seemingly independent or disconnected entities are *linked at a deeper level* in the same way as the movement of the shadows of a candle flame cast upon two walls of a room appear to interact with each other, but are in fact 'connected' via the flame (equivalent to the pilot wave).

## MANY UNIVERSES

In the 1950s, the concept of many Universes (otherwise known as multi-worlds or parallel Universes) was formulated by Everett. His ideas were progressed by De Witt, Wheeler and most recently in the 1990s, by Deutsch.

*Essential Concept:* according to this interpretation of quantum physics –

1. Every time the Universe is faced with a choice at the quantum level, the whole Universe splits into as many copies of itself as it takes to carry out every possible option.
2. There is no communication between the various Universes.
3. Non-locality plays a crucial role.

Thus in essence, this theory states that all possibilities that the quantum wave functions represent actualize in different worlds that coexist with our world—see Fig. 2.11 (a).

---

61 The esoteric wisdom states that the cause of all our suffering is avidya—ignorance (of the spiritual laws of life, the spiritual equivalent of the pilot wave) which proceeds from, and is produced by, the illusion of the senses.

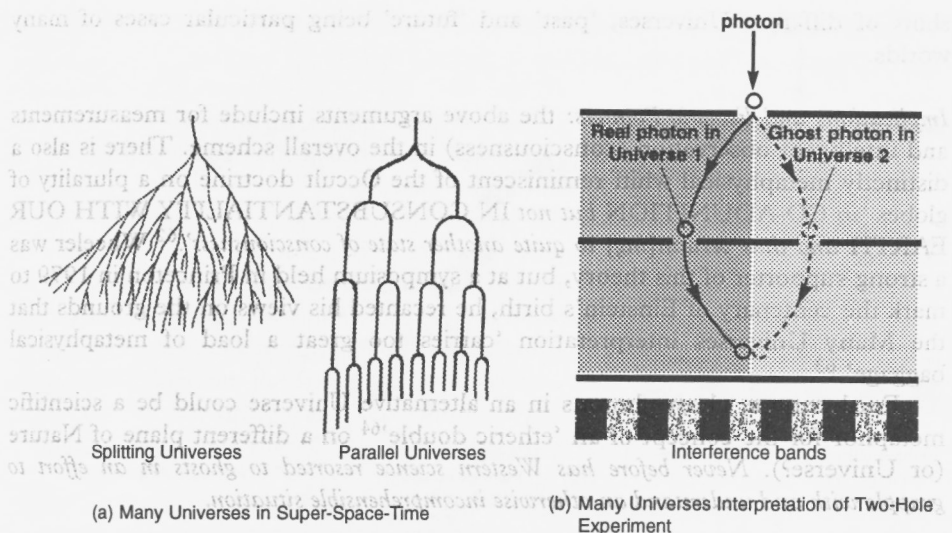


Fig. 2.11 Many Universes Interpretation of Quantum Physics

**Explanation of Two-Hole Experiment:** Deutsch has taken the Many Universes interpretation further. Referring to Fig. 2.11 (b), his explanation of the two-hole experiment is –

1. Photons (or any particle) fired *singly* at two (unobserved) holes produces, as always, interference. What happens is that –
2. a 'real' photon goes through one hole (unobserved); and in addition it is as if a 'ghost photon' passes through the other hole (unobserved); and
3. interferes with the real photon; except that
4. ghost photons (in our Universe) are *real* photons following *alternative* quantum paths in Universes *adjacent* to ours. Similarly real photons in our Universe would presumably appear as ghost photons in these alternative Universes.
5. When faced with a choice of two holes, the Universe divides into two versions of reality, such that in:
  - one reality-version the photon goes one way; and in the
  - second reality-version the photon goes another way.
6. Then the two paths from the two alternate Universes are fused together (Deutsch's development of Everett's theory) to produce the interference pattern.
7. All possible quantum variations exist side-by-side.

The corollary to the above is Deutsch's notion of time. He states that there is no flow of time from the past, via the present to the future, except subjectively. A series of snapshots between past and future does not imply that something is actually *moving*. Therefore snapshots of different times are equivalent to snap-



shots of different Universes, 'past' and 'future' being particular cases of many worlds.

*Implications and Esoteric Pointers:* the above arguments include for measurements and intelligent observation (consciousness) in the overall scheme. There is also a distinctly metaphysical whiff reminiscent of the Occult doctrine on a plurality of globes 'in CO-ADUNITON but not IN CONSUBSTANTIALITY WITH OUR EARTH and thus pertain[ing] to quite another state of consciousness'.<sup>62</sup> Wheeler was a strong supporter of this theory, but at a symposium held in Princeton in 1979 to mark the centenary of Einstein's birth, he recanted his views on the grounds that the Many Universes interpretation 'carries too great a load of metaphysical baggage'.<sup>63</sup>

Furthermore, ghost photons in an alternative Universe could be a scientific metaphor for the concept of an 'etheric double'<sup>64</sup> on a different plane of Nature (or Universe?). *Never before has Western science resorted to ghosts in an effort to grapple with and understand an otherwise incomprehensible situation.*

## MANY MINDS

This idea was formulated by David Albert in the 1990s.

*Essential Concept:* in this interpretation of quantum reality –

1. Whenever an intelligent Being interacts with, or is faced with a choice at the quantum level, the whole brain of the Being splits into as many copies of itself as it takes to carry out every possible option.
2. There is no communication between the various brains of the Being.
3. Non-locality plays a crucial role.

*Esoteric Implications:* this interpretation diminishes the role of probabilities and accentuates the importance of consciousness and intelligence in the quantum interpretation, both of which traits are disquieting to some scientists.<sup>65</sup>

## QED – SUM OVER HISTORIES

Quantum electrodynamics, or QED, is a theory of the quantized electromagnetic field pioneered by Paul Dirac (1902–84) and progressed by Richard Feynman (1918–88) in the 1960s. As explained by Feynman,<sup>66</sup> it deals with the interaction

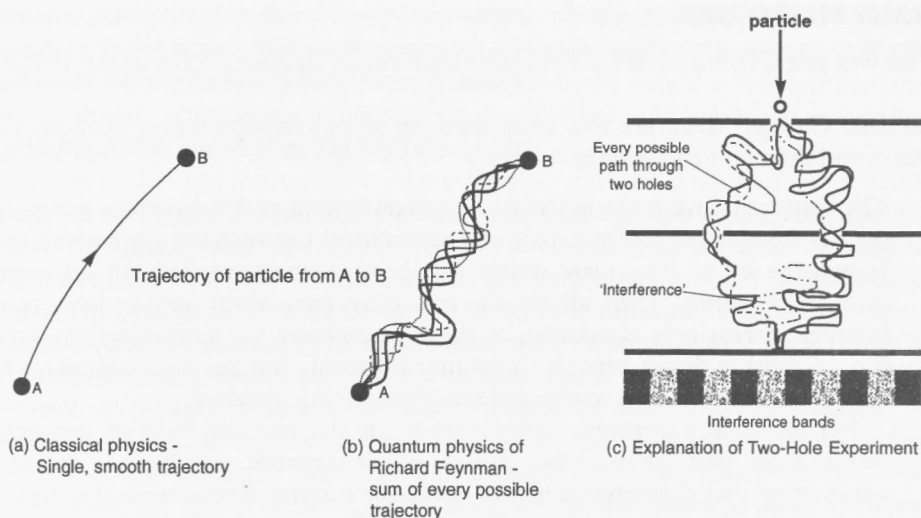
62 SD-1, p. 220. This seminal fact of different worlds being in different states of consciousness partly resolves the whole tedious issue of whether aliens or UFOs from other planets exist or not—see Part III.

63 John Wheeler, *Some Strangeness in the Proportion*, ed., Harry Woolf, Addison-Wesley, Massachusetts, 1980, pp. 385–6. This is not the only occasion when intuitive scientists on the brink of 'crossing the Rubicon' into a larger dimension of understanding, pull back because of materialistic bias, or fear of ridicule from colleagues, or cowardice.

64 Or whichever alternative words one wishes to use from the rich cocktail of phrases in common usage, such as *linga sharira*, *astral body*, *doppelganger*, etc.

65 For example see John Gribbin, *Schrödinger's Kittens and The Search for Reality*, Weidenfeld & Nicolson, 1995, p. 171.

66 Richard Feynman, *QED: The strange theory of light and matter*, Penguin, 1990, is easily digestible and a delight to read.



**Fig. 2.12** Sum Over Histories Interpretation of Quantum Physics

of matter and light in terms of particles (namely, photons and electrons), and probability waves. Such interactions are supposed to account for the entire variety of all physical phenomena (which are, in essence, the interactions between photons and electrons), except the behaviour of atomic nuclei and gravitational effects.

*Essential concept:* a particle travelling from A to B does not follow a single, smooth, trajectory as considered by classical physics—see Fig. 2.12 (a), but in fact follows *every possible path* as shown in Fig. 2.12 (b).<sup>67</sup> The single trajectory observed is in fact the net additive effect of all possible routes, otherwise known as the 'path-integral' or 'sum-over-histories'.

*Explanation of Two-Hole Experiment:* because a particle follows literally every possible path through the experiment, this is one way of understanding how a single particle (electron, photon, atom, etc.) can seemingly pass through both holes at once and 'interfere with itself', so producing the alternate dark and bright bands characteristic of waves—see Fig. 2.12 (c).

*Esoteric Pointers:* like the pilot wave and Copenhagen interpretation, sum-over-histories also imparts a sense of unity, in that any movement is associated with 'touching' all places, and so any disturbance affects the 'dynamics' of the harmony prevailing in the complete order of Nature.

<sup>67</sup> This is also how most committees work, rarely getting to the point directly, but instead meandering around by every possible discussion route. Thought, like light, never seems to follow a straight line, even though it sometimes appears so.



## MANY HISTORIES

This was put forward by Wojciech Zurek and Thanu Padmanabhan in the 1990s.

*Essential Concept:* there are two main features of this interpretation—coherence, and correlation and consistency –

1. The distinction we make between a classical system and a quantum system is the degree of *coherence* (or extent of decoherence) between the system and our knowledge of it. The *same* object can be described precisely in quantum mechanical terms when all its characterizing parameters are known; or it behaves increasingly classically, as these parameters are increasingly ignored (i.e. increasing decoherence). Coherence obviously implies a strong degree of interaction between the object and the investigating observer.

For example a quantum entity such as an electron can have its quantum states fully defined because it has a manageable number of internal parameters that characterize it. The more the internal parameters of a system are ignored, the more the latter behaves as if it were classical. Hence, say, a cat composed of billions of particles<sup>68</sup> has many more billions of characterizing parameters. These obviously cannot be fully defined and so the cat behaves to us as though it were a classical 'object'. At the other extreme the Universe behaves in classical fashion because there are other Universes that cannot be accounted for on account of our ignorance—hence many histories. (Hawking states that although there may be an infinite number of parallel Universes, the one in which we are most likely to find ourselves, i.e. the most common kind of Universe should appear very much like the Universe we actually inhabit.<sup>69</sup>)

2. In the same way as unstable radioactive atoms decay in time to form stable atoms, many different quantum states of the *early* Universe are thought to have coexisted. But with time only stable states endured (i.e. the Universe we now inhabit). Survivability of variations is determined by their degree of correlation and consistency. Accordingly, consistent and correlated histories survive better than erratic ones, the former being those most closely represented by classical descriptions.

In essence therefore, the Many Histories interpretation depends strongly upon the requirement of a consistency of *perceived* records of past events, i.e. history. The correlation between memories and history is central, so what we perceive is not the wave function of the entire Universe, but only a limited sector corresponding to the salient features of events described in consistent manner by various observers.

*Esoteric Pointers:* like the Many Universes interpretation, this interpretation also raises the possibility of multiple Universes. The importance of consistency and the consequences of ignorance are also stressed. It is a verifiable fact that the

68 About  $10^{26}$  atoms for a one kilogram cat, according to Thanu Padmanabhan, *New Scientist*, 10 October 1992.

69 Stephen W. Hawking, *A Brief History of Time*, Bantam Press, 1988.

esoteric doctrines present a very consistent, closely correlated and coherent account of past events. Hence the supreme endurance of esoteric science over vast epochs of history spanning innumerable cultures.

## Controversy Over the Speed of Light

There is no overall consensus of scientific opinion on two issues: whether the speed of light can ever be exceeded; and the constancy of its value. Because so much of modern physics is based on the absolute invariance of the speed of light, and the impossibility of its being exceeded, there is obviously a strong resistance against any facts that could challenge this premise. Reference was made earlier to the experimental proof of non-locality (instantaneous action-at-a-distance). This appears to contradict Einstein's special theory of relativity, also verified by experiments, that no signals carrying information can travel faster than light; and that the speed of light is the same for any observer in any inertial frame,<sup>70</sup> no matter what the speed of the observer is relative to the source of light. However the general theory of relativity does appear to embody the notion of non-locality.<sup>71</sup>

Anyhow, the objective of all this is not to fuel an already roaring debate on the speed of light, but to show how scientific thinking has, and is, changing about one of the most fundamental properties in Nature—the speed of light. Part II explores the psychological defences of scientists for their cherished notions, and the debate over the speed of light is given as an example.

The possibility of fluctuations, or even periodicity in the value of the speed of light, and other 'fundamental constants' is discussed in Part III.

## A Truth-Seeker's Commentary and Optimism

A bird's-eye view of scientific investigations into the nature of light shows classical science to have been largely divided, not only over the principal issue of the particle- and/or wave-like nature of light, but also regarding the various interpretative mechanisms propounded by the advocates of these two fundamental theories of light. Modern science has acknowledged the one reality behind the particle or wave appearance of light, and other quantum entities; but in attempting to understand the nature of light *in actu*, has come up with all kinds of exotic theories to explain and interpret the paradoxical behaviour of light *in abscondito*—in fact leading scientists have admitted that such things may be beyond understanding and have tried to swing Schrödinger's cat in all sorts of ways!

(The writer cannot resist describing another 'variation' on the two-hole experiment. The great English composer Charles Stanford lodged in Sir Isaac Newton's rooms at Trinity College, Cambridge. Stanford reported that the door

70 An inertial frame is a frame of reference where the speed and direction of motion are unchanging, i.e. observers move at constant velocity.

71 This is a deep subject. A cursory attempt to clarify it would be out of place here.

of the room had two holes in it, said to have been cut by Newton himself—one hole for his cat, and a smaller hole for her kitten. An apocryphal tale maybe, but two holes and feline creatures might have figured prominently in science long before Schrödinger immortalized the cat by inventing his famous paradox!)

The study of light has provided strong grounds for optimism. In quantum physics above all other scientific disciplines, the notion of superposition of states, the pilot wave, multiple Universes, sum-over-histories, and especially non-locality, when considered as a whole, convey a flavour of ‘all things together’,<sup>72</sup> or unity—which fact of life is further corroborated by Einstein’s relativity that if we could ride a beam of light,<sup>73</sup> we would be in touch with all places at all times, for time would stand still.

What practical, esoteric indicators has quantum physics bequeathed to the modern world? Fig. 2.13 contains profound statements by some leading scientists of this century, many of whom were Nobel laureates. Their intuitive assertions can be viewed in seven broad categories: the value of the mystical experience; the supremacy of consciousness; the need for an interactive, participatory and co-operative outlook, as opposed to a concept of cold, detached observation and interrogation of Nature; the *non-ontological* character of scientific inquiry; the *non-substantive* and illusory nature of the so-called physical world; the fullness of space; non-locality. But, above all else, it is the wonderful proof (by Western science) of non-locality that nudges Western science inexorably towards Occult Science, by showing that at deeper levels *we live in a world of complete interconnectedness and so there can be no action (however slight) that does not affect the harmony and dynamics of the unbroken whole—the fabric of the Universe responds to the smallest tug on any of its flimsiest threads—fragmentation and separation are only surface appearances.*<sup>74</sup> It is on this common ground of non-locality that the intuitive scientist and the inspired poet can unite . . .

**The intuitive scientist –  
David Bohm<sup>a</sup>**

The measurable and the immeasurable are then in harmony and indeed one sees that they are but different ways of considering the one and undivided whole. When such harmony prevails, man can . . . realize the truth of this insight in every phase and aspect of his life. As Krishnamurti<sup>b</sup> has brought out with great force and clarity, this requires that man gives his full creative energies to the inquiry into the whole field of measure.

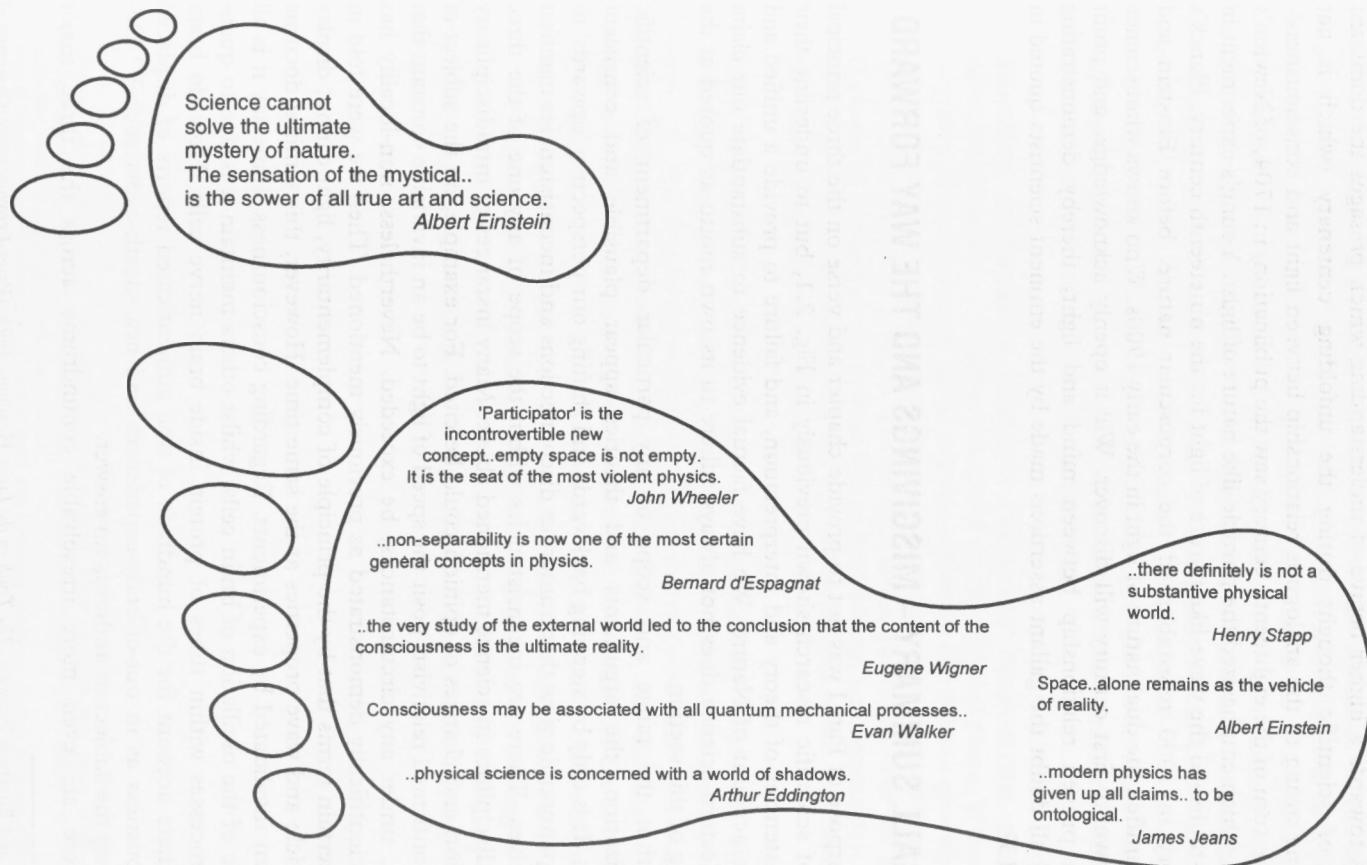
<sup>a</sup> *Wholeness and the Implicate Order*, Ark Paperbacks, 1994, pp. 25–6.  
<sup>b</sup> See for example, J. Krishnamurti, *Freedom from the Known*, Gollancz, 1969.  
<sup>c</sup> Canto xxii of *The Mistress of Vision*.

**The inspired poet –  
Francis Thompson<sup>c</sup>**

All things by immortal power,  
Near or far,  
Hiddenly  
To each other linked are,  
That thou canst not stir a flower  
Without troubling of a star; . . .

★ ★ ★

<sup>72</sup> Truth in a sense being the full integration of all standpoints, as stated by Leibnitz. Refer to *SD-2*, pp. 353–4.  
<sup>73</sup> In the deepest sense, we *are* bodies of light which is no hyperbole, but a literal fact, which will become clear in subsequent sections.  
<sup>74</sup> One way of appreciating the Law of Karma which, in the writer’s opinion, is what Einstein was alluding to when he refused to accept that God would play dice with the world.



**Fig. 2.13** The Footprints of Modern Science – 'All things by immortal power, Hiddenly to each other linked are'.

Scientific discoveries around the turn of any century, especially on the subject of light, are invariably momentous. During such a period, there tends to be an impetus towards a higher octave of understanding which presages the dominant quality of scientific thought during the unfolding centenary (which is not surprising owing to the analogous relationship between light and consciousness). Thus the turn of the eighteenth century saw the publication, in 1704, of Newton's *Opticks* which emphasized the particle-like nature of light. Young's experiment in 1801 established the wave-like nature of light for the nineteenth century. Planck's discovery in 1900 re-established the corpuscular nature, before Einstein and others unified the dual nature of light in the early 1900s. Who knows what science of the twenty first century will discover. Will it openly acknowledge, and profit from a proven relationship between mind and light, thereby demonstrating beyond all doubt the gallant assertions made by the eminent scientists quoted in Fig. 2.13?

## OVERALL SUMMARY – MISGIVINGS AND THE WAY FORWARD

The purpose of Part I was not to provide chapter and verse on the three principal areas of scientific research shown previously in Fig. 2.1, but to underline their inconsistencies of theory and interpretation, and failure to provide a unified and durable account of Nature. We have factual evidence to substantiate our claim that Western science does not always adhere to its own motto as quoted at the opening of this section.

Within the range and scope of any particular department of scientific specialization, the arguments and theories appear plausible and consistent enough. It is only by stepping backwards and shifting our perspective 'upwards' to gain a panoramic view that numerous disconnections and inconsistencies manifest themselves. There are inconsistencies within the scope of any one of the three major disciplines in science mentioned above. Many instances of intradisciplinary confusion and changes of opinion could be cited. For example, on the subject of light, confirmed relativists posit the speed of light to be an invariable constant that cannot, under any circumstances, be exceeded. Nevertheless, non-locality has been scientifically demonstrated as previously mentioned. Then we were told in no uncertain terms that by the principle of complementarity, light cannot display its particle and wave properties at the same time. However, this seminal doctrine has been invalidated by experiments. Regarding consciousness, some say it is all because of the oscillation of brain cells, whilst others maintain it is due to quantum processes within tubes of protein inside brain nerve cells. How do brain researchers account for the hundreds of well authenticated reports of displaced consciousness as in out-of-body-experiences and near-death-experiences?<sup>75</sup> Denouncing the subject or author is no answer.

There are even more irresolvable conundrums across the three major

<sup>75</sup> Peter and Elizabeth Fenwick, *The Truth in the Light*, Headline, 1995. (Peter Fenwick is the Chairman of the Scientific and Medical network.)

scientific disciplines. For example, what happens to all those minds split off according to the Many Minds interpretation of the two-hole experiment in quantum physics? Do all their respective brains also vibrate at 40 hertz, as they must do, according to Crick? And if so, why just 40, why not, say, 39 or 50 hertz—and who or what sets the vibration in motion in the first place? How can consciousness be explained in terms of the effects of quantum mechanical processes in cerebral tubulin when consciousness itself is a *prerequisite* for transforming the probability of events of quantum entities into certainties of outcome—in other words, *consciousness comes first*? Then, do all the Universes in the Many Universes quantum interpretation commence with a bang as our present Universe is supposed to have done? Dozens more interdisciplinary inconsistencies could be cited. Truly, as HPB said:

**MODERN SCIENCE IS ANCIENT THOUGHT DISTORTED, and no more [for] Nature . . . is always deceitful on the physical plane. If there is anything like progress on earth, Science will some day have to give up . . . such monstrous ideas as her physical, self-guiding laws, void of Soul and Spirit, and will then have to turn to the Occult Teachings. For all their [Science's] wonderful discoveries will go for nothing, and remain for ever headless bodies, unless they lift the veil of Matter and strain their eyes [if not their telescopes] to see beyond.**<sup>76</sup>

Indeed, one may find more common-sense logic, and less confusion, abuse and counter-insults in the teeming market at Marrakesh than in the present scientific fun-fair on the frenetically-whirling, triple merry-go-rounds of fundamental particle hunting to discover the origin of the Universe, consciousness research, and quantum interpretations of reality. However, to understand the source of this costly mayhem, to ask WHY<sup>77</sup> such a state of affairs prevails, before attempting a resolution, we must inquire into the respective methods and practices of physical (i.e. Western, materialistic) science and Occult Science before seeking the clarity and order that the latter can bring to bear upon the former by blending 'Physics with Metaphysics, [so uniting] the Body [of science] with its informing Soul and Spirit.'<sup>78</sup>

---

<sup>76</sup> SD-2, pp. 303, 231, 335. HPB's remarks of over one hundred years ago still glow undimmed with meaning when their import and significance is realized. Note carefully that there is *no question* of castigating science, but a stern admonition that it should seek to *unite* with its parent, so as to become complete, consistent and above all, more ethical.

<sup>77</sup> Part II explains that Western science is equipped and therefore secure in dealing with the WHAT, rather than the WHY of any inquiry into Nature.

<sup>78</sup> See note 76.





# **PART II**

## **FROM WESTERN SCIENCE TO OCCULT SCIENCE**

### **In this Part:**

- ❖ Steps leading towards Truth
- ❖ Philosophy and method of Western science contrasted with that of Occult Science
- ❖ Realism model of Western science explained with benefits and weaknesses
- ❖ Role of experiment and observation in Western science
- ❖ How Western science formulates its theories
- ❖ Abuses of statistics and technology
- ❖ Mathematics as a bridge to Occult Science
- ❖ Qualifications and preparations for Occult instruction
- ❖ Method of imparting Occult secrets
- ❖ Rules of Occult instruction
- ❖ Dangers of Occult Science and reasons for secrecy
- ❖ Imaginary conversation between a 'typical' scientist and an Occultist

# Section 3 The Investigation of Truth – Contrasting Philosophies and Methods of Western Science and Occult Science

**Modern science is our best ally.**

MAHATMA LETTERS No. 11  
(CHRONOLOGICALLY No. 65)

Occult Science, a principal sub-set of *Theos-Sophia*, is acclaimed an EXACT science, for its teachings, in their essential content, have been ever-consistent and unchanging, thoroughly verified and independently corroborated, although inevitably the form of presentation has varied to suit the culture, psychology and mental climate of any particular epoch. By contrast as demonstrated in Part I, Western science, the so-called exact science, provides anything but exactly consistent accounts of *natura naturans*,<sup>1</sup> i.e. created Nature. The reasons for the consistent doctrine of the former and the shifting accounts of the latter lie in their different philosophies, qualifications and methods of investigating Nature.

This Part therefore explains the different approaches of Western science and Occult Science, their areas of convergence, overlap and divergence, techniques of investigation, instruments of research and the contribution that *both* can make towards a unified and complete understanding of Nature, always including Man.

## THE STAIRCASE TO TRUTH

### Steps Along the Quest

Fig. 3.1 shows that the crest jewel of Truth is attained at the summit of a five-stage climb involving four steps along the quest taken with the aid of three instruments of inquiry. The ascent becomes progressively steeper as each step incorporates the exertions of the previous step(s) and adds a new trait of its own. Thus to answer the question 'what', we mount Step 1, landing on the *terra firma* of Western science and use physics with the associated cerebral machinery as its chief instrument of intellectual inquiry. But to understand the 'what', 'how', 'why' and 'purpose' of existence, we have to ascend to Step 4, *terra incognita* for

<sup>1</sup> A term used by the philosopher Arthur Schopenhauer and adopted by the great quantum physicist and Nobel laureate, Wolfgang Pauli. Pauli's vision has been treated with mathematical rigour in a book by R. Walder appropriately titled *Natura Naturans – Towards the Unification of the Physical and the Psychological*, to be published.

science, but which combines science and art, metaphysics and religion, Occult Science and mysticism, spiritual philosophy, and their glorious consummation as *Theos-Sophia*—thought, reflective pondering and primarily meditation are the instruments of inquiry. The term '*Sophia*' is particularly important, for it derives from *Sophos*, which represents the feminine aspect of compassion and wisdom—knowing by embracing—as opposed to intellectual knowledge which is divisive.

This figure also shows that the initial steps of the quest must involve a delicate balance between jnana, the path of knowledge, and its twin, bhakti, the path of devotion, before both are merged in an integrated spiritual philosophy. Although art, religion and mysticism are outside the scope of our present inquiries, their study and practice is indispensable for Truth. Truth is whole and complete, and therefore needs a total approach, free of the water-tight divisions induced by ever-increasing specializations. Who would deny that modern science can sometimes present a heartlessly cold and unbalanced view of the world, such nihilism due in

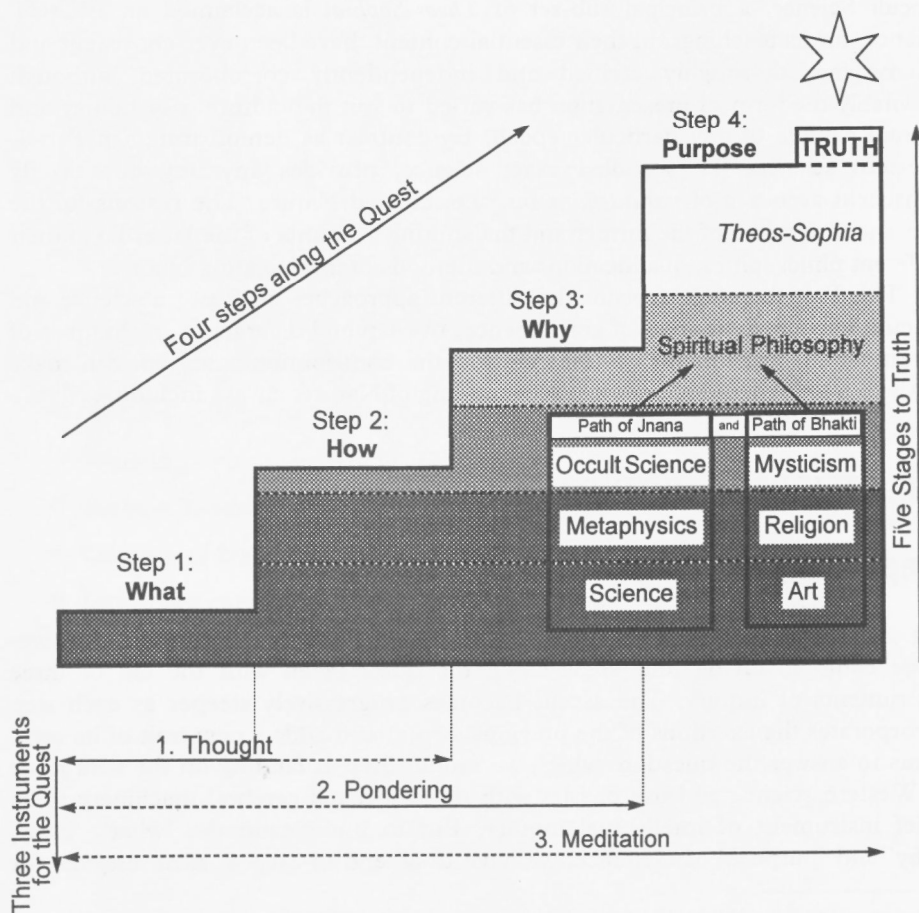


Fig. 3.1 The Staircase to Truth – Steps, Instruments and Stages

large measure to its orientation almost exclusively towards the 'head', because it disdains the way of the heart as being unworthy of science.<sup>2</sup>

---

**Truth is whole and unfettered. It can be realized only by a total and integrated approach in freedom.**

---

We need not labour the point that Western orthodox science (almost exclusively materialistic), is firmly planted on Step 1 and occasionally totters towards Step 2. Deliberately restricting its instruments of inquiry solely to the intellectual apparatus, it can soar no higher; it therefore either derides those who undertake the onward journey, or pretends that such further progress does not exist, or that the latter can all be explained by physical mechanisms. By contrast, Occult Science (in companionship with physical science and metaphysics) is capable of far deeper and wider investigations into the processes of Nature and Man.

## Instruments for the Quest

Instrument for Quest	What it is and what it involves	What it Provides
Thought	Familiar machinery of the mind that separates subject from object and produces models of the latter.	Manifold descriptions*, images or appearances of the Real – Nature <i>in abscondito</i> .
Reflective pondering	Process of inward digestion of the 'food of thought' (or 'chewing the "mental cud"'); global 360 degree rotation of the subject in the mind to acquire viewpoints from all possible angles.	Interface between descriptions and the described, providing glimpses of the latter.
Meditation	Relinquishing of thought in favour of direct in-sight, from within oneself, into the subject-in-itself, without the veil of verbal or intellectual models. Results in unification of subject with object.	The described* – Nature <i>in actu</i> .

\* A graphical illustration of the difference between the descriptions and the described is the difference between maps and the territory. No amount of tinkering with maps will change the actual territory they are designed to represent! This is explained later.

## FUNDAMENTAL DISTINCTION BETWEEN METHODS OF WESTERN SCIENCE AND OCCULT SCIENCE

Fig. 3.2 summarizes the essential distinction between the investigation of Nature by Western science and Occult Science. The dotted diamond shows how each is reflected in the other. For the inductive method of science includes the deductive method in the background i.e. theories derived by induction are subsequently used to deduce predictions based upon such theories. The deductive method of

<sup>2</sup> But recall great men of old like Leonardo da Vinci, Leibnitz and Newton who, free from the shackles of compartmentalization, were supreme in science, art, religion, literature, philosophy, metaphysics, etc.

Occult Science also incorporates the highest application of the inductive principle to test and independently corroborate the visions of Adepts (as will shortly be amplified).

In essence the scientific method moves from the particular to the general, rather like assembling individual pieces of a jigsaw puzzle: discrete, observational

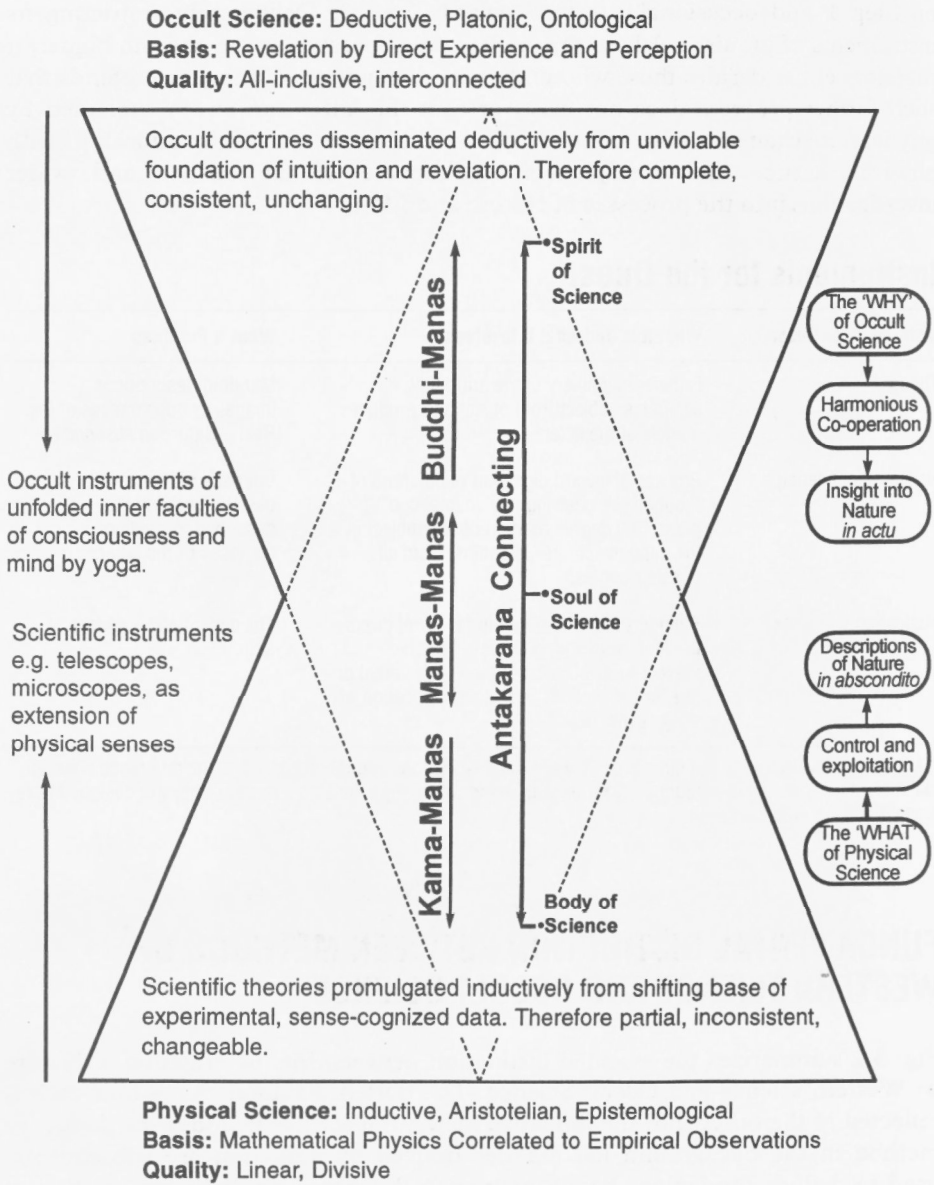


Fig. 3.2 The Investigation of Nature by Western (Physical) science and Occult Science – Fundamental Distinctions and Overlap

data is collected and gradually fitted into a general picture, the latter being a mental representational model of the physical effects observed. The mind process is predominantly intellectual, applied in a linear mode. The instruments of investigation are limited to, and conditioned by, the five physical senses and their extensions as telescopes and microscopes etc. The result is a precise description of the appearances, behaviour and physical mechanisms of the Universe—Nature *in abscondito*. Occult Science works from the general to the particular: the truth (not a model) of the overall, grand picture is first realized and the way this presents itself as particular effects then expounded. The mind process is essentially ‘lateral thinking’ and intuitive, applied in an all-inclusive mode. The instruments of investigation are *not* limited to the physical senses. This gives profound insights into the origin, essential nature and manifestation of the self-consistent kosmos.<sup>3</sup> Further elaboration of the scientific and Occult approaches is now given. It will be shown that Western science has a rigorous and organized method based upon a shaky foundation. By contrast, the philosophical basis of Occult Science is unshakeable and solid, although it adopts a far less structured method. For these reasons, science provides enormous factual information on individual physical phenomena, but knows little about their real and essential nature, besides having a weak grasp of the overall picture. By contrast, Occult Science reveals the grand plan, but is generally less interested in details about specific physical mechanisms.

## THE PHILOSOPHY, METHOD AND LIMITATIONS OF WESTERN SCIENCE – DISCOVERING THE ‘WHAT’ (AND ‘HOW’) OF NATURE

KEYWORDS: Aristotelian, induction, experimentation, observation, hypothesis, theory, law

### The Paradigm and Philosophy of Western Science

A paradigm (from the Greek *paradeigma* meaning ‘pattern’) is the manner in which the thoughts, perceptions and values that form a particular vision (or version) of reality are modelled, i.e. patterned or re-presented.<sup>4</sup> (Thus a paradigm shift means a fundamental change in outlook, approach and philosophy.) The scientific paradigm—the way it re-presents or models the physical world—is known as *realism*. It is based upon a **belief system** that can conveniently be broken down into seven inter-related elements:

<sup>3</sup> A term borrowed from the title of the book by J. S. Gordon, *Self-Consistent Kosmos*, Orpheus Publishing House, 1995. This book treats of the whole process of evolutionary unfoldment, in metaphysical terms, according to the principles of Occult Science.

<sup>4</sup> For extensive discussions on paradigms and paradigm shifts see Fritjof Capra, *The Turning Point*, Flamingo, 1983, and Thomas S. Kuhn, *The Structure of Scientific Revolutions*, University of Chicago Press, 1970.



1. The scientific method, allied to the philosophy of realism, is the only satisfactory approach to truth. The ethos is always to alter the theory to suit the facts.
2. The philosophy of realism associated with the method of science, is the only valid one. This is the foundation-model supporting the entire edifice of Western science. It avers the reality of a world external to the observer, the detailed nature of the former being amenable to investigation primarily by the method of science.
3. That which cannot be stated in concrete terms or mathematically formulated is 'woolly mysticism', quite unworthy of science.
4. The only reality is sensate, i.e. that which is input through the five physical senses, which are themselves regarded as physical receptors that transmit electro-chemical signals to the brain of the physical machine known as the body.
5. Information received through the senses is entirely independent of the perceiver; put another way, the observer is detached from, and does not influence his observations.
6. A mechanistic view of the Universe, i.e. as an electro-chemico-mechanical system, or machine, composed of elementary building blocks, rather like the proverbial clock (the clock-maker, if he exists, being blind).<sup>5</sup> The inevitable consequence of this belief is a view of life as being competitive, rather than co-operative, and unlimited technological sophistication allied to material growth equated with progress and civilization.
7. Physical matter (and its interactions) constitute the ultimate reality; all subjective experiences, religious or mystic, are the manifested effects of matter. Therefore all so-called (to the scientist) paranormal phenomena, if not explainable by science are silly nonsense, delusion or the fraudulent handiwork of charlatans. A corollary to this is that consciousness and thought are the (by)product of material processes (physics and electro-chemistry) in the brain. There is no intelligence or consciousness *independent* of the brain.

Many scientists have admitted that the recent discoveries in quantum physics that have thrown the above hitherto solidly entrenched paradigm into confusion (if not disrepute!) is a fact that cannot be brushed aside. This become clear later, but meanwhile it is necessary to inquire more deeply into the scientific paradigm by proceeding logically through the above seven elements, explaining their strengths and weaknesses.

## **Element 1: Fundamental Method of Science – From the Particular to the General: From Experimental Evidence to Theory**

There is no better statement of the fundamental method of natural (physical) science than the following extract of a letter from Newton to Oldenburg

---

<sup>5</sup> For example, see Richard Dawkins, *The Blind Watchmaker*, Longman, 1986, p. 3.

(Secretary of the Royal Society) on June 10, 1672:

**For the best and safest method of philosophizing seems to be, first, to inquire diligently into the properties of things and to establish those properties by experiments, and to proceed later to hypotheses for the explanation of things themselves. For hypotheses ought to be applied only in the explanation of the properties of things, and not made use of in determining them; except in so far as they may furnish experiments.**<sup>6</sup>

Fig. 3.3 is a flow diagram of the scientific method of inquiry into Nature which invokes the Newtonian spirit of experimentation and formulation. The method of science is built upon the renowned, Aristotelian method of induction, and comprises a logical combination of four cardinal factors: observation, hypothesis, verification and prediction. The results of experiments, or considered observations of some aspect of nature (Step 1) are recorded (Step 2) and classified as a general statement or law (Step 3). A hypothesis is then proposed to account for the results of such observations (Step 4). Then an experiment is devised, or the data from previous related experiments performed by others is used to test the validity, i.e. predictions of the hypothesis (Step 5). If a close match is obtained, the hypothesis in question is elevated to a theory (Step 6) and further predictions deduced from such theory (Step 7). If not, then depending upon the degree of divergence between experimental data and predictions of the hypothesis, the experimental error is checked (Step 8) and the hypothesis refined (Step 9); or else the existing hypothesis is rejected (Step 10) and a new one induced (Step 11). Unfortunately a lot of loose terminology prevails whereby the words 'law', 'theory' and 'hypothesis' are used interchangeably. However for our purposes, law refers to an ordered and general classification of observed facts (for example, Boyle's law of gases is based upon the observed evidence that for given mass of real gases at constant temperature, the pressure of the gas is approximately inversely proportional to its volume); and theory is taken to mean a hypothesis (i.e. an educated guess) *that has been empirically verified* (such as the kinetic theory of gases that explains the behaviour of gases by the motion of its molecules—Maxwell *et al* who developed this theory certainly did not directly observe gas molecules in motion(!) but induced a theory that satisfactorily matched experimental observations). Experimental evidence can however stand on their own whether or not an appropriate hypothesis exists to support them.

Built into the scientific method is the role of observation and the technique of reductionism, both of which will be discussed in relation to the benefits and potential drawbacks they offer. It is important to note that only detached observation of external nature is permissible, any subjective influences or participation with the observer are not allowed. The predicament in which science has found itself by adhering to this canon of its own methodology will be discussed shortly. Meanwhile we continue with comments on this method of investigating Nature.

<sup>6</sup> *The Correspondence of Isaac Newton*, eds. H. W. Turnbull, J. F. Scott, A. Rupert Hall and Laura Tilling, 7 vols., Cambridge: Cambridge University Press, 1959–77, vol. 1, p. 169.

*Example of the Scientific method*

The 1996 Royal Institution Christmas Lectures by Professor Simon Conway Morris are one of many fine examples of the faithful application of the scientific method (as depicted in Fig. 3.3), associated with the willingness, when convenient, to adapt theories in the light

of new evidence. But as so often with science, there were also some flimsy hypotheses presented to account for weighty facts, plus unsupported assumptions to justify the intended conclusions. For example, it was supposed that a major factor accounting for our biped posture is because our ape ancestors were forced out from the forests on to the hot plains in Africa where, in order to minimize the effects of solar radiation, the upright posture was found to present less surface area (therefore less bodily heating) to the rays of the sun, than a supine posture. A momentous conclusion indeed from tenuous evidence, especially when a simple heat transfer calculation would show that a recumbent posture could, under some wind and humidity conditions, promote more bodily cooling than standing upright!

These lectures also told us much about the 'what' and the mechanisms of evolution, but practically nothing on the 'why' and purpose, and still less about the 'author of the universe'.<sup>7</sup> For example, recent fossil discoveries lead current palaeontologists to conclude that some dinosaurs were less sluggish than previously thought. But it is not being cynical to point out that this is yet another example of a U-turn by science. Confidently claimed to have been largely sluggish, some dinosaurs are now declared to have been at least as swift-footed as a present-day horse. So for '*dinosaurs in abscondito*', science can supply good quantitative data on probable height, weight, diet, locomotion, etc., but for '*dinosaurs in actu*', alas, the Occult doctrine on evolution<sup>8</sup> must supply the missing component!

---

**The essence of the scientific method is to induce a general theory from a set of particular observations. The method is entirely external and objective—internal subjective factors are allowed to play no part and have to be discounted.**

---

## COMMENTARY – CORRUPTION OF THE SCIENTIFIC METHOD

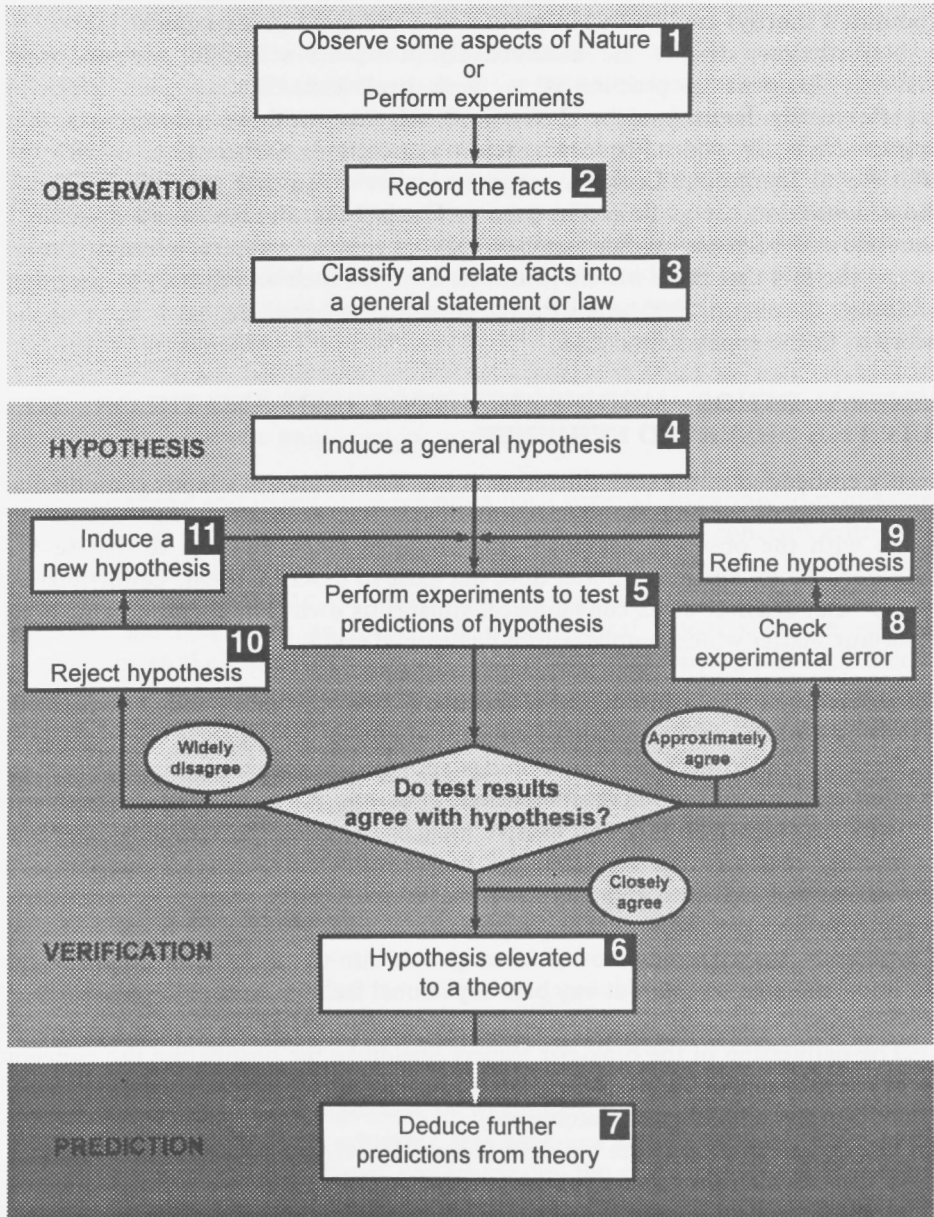
Newton's celebrated remark to Oldenburg given above, is often quoted, or referred to, promiscuously in popular science books<sup>9</sup> to justify the claimed superiority of the scientific method over all other modes of inquiry into Nature. Few statements can have suffered greater misapplication out of context. For as explicitly stated by Newton himself, his recommendation applies to natural (i.e. mechanical) philosophy where of course one does not resort to fanciful conjectures that are not grounded in experimentally verified observations. But this is not the one and only method as evinced by Newton's long and deep interest,

7 A phrase aptly borrowed from Napoleon's objection to Laplace's book on the system of the world making no mention of a Deity. Laplace's celebrated response: 'Sire, I have no need for that hypothesis,' could well typify the attitude of many a modern scientist!

8 This deals with evolution as a whole, including the prehistoric creatures of which dinosaurs are just one example.

9 These popular-science books are doing for science what the light-classical and pop music industry have done to serious, classical music, that is, spreading the message whilst diluting its value.

plus voluminous writings, in generally esoteric subjects like astrology, alchemy, philosophy and religion, which subjects are not generally amenable to (though they may profit in part from) the logic and precision of the scientific method. Furthermore, Newton also instructed that the 'Method of Analysis' (the inductive



**Fig. 3.3** A Flow Diagram Showing the Fundamental Steps in the Method of Western Science – From Particulars to the General

scientific method) should precede the 'Method of Composition' for deducing 'Phænomena arising from . . . these Discoveries being proved . . .'<sup>10</sup> According to the present writer, this is a covert way of stating that a complete science is obtained when the inductive method pertaining to physical science (at its present stage of sensorial perception) and deductive method of Occult Science (to be expounded shortly) are blended in proper ratio and appropriate context.

Nevertheless, despite the intended rigour of the scientific method, what invariably happens in practice is to work backwards from a predetermined (experimentally-determined or desired!) conclusion to those assumptions that support the latter, and arbitrarily to reject assumptions that do not, as with the 1996 Royal Institution Lectures mentioned above. Another example is Planck who *assumed* that energy flowed in quanta. The fact that the renowned equation<sup>11</sup> that followed such an assumption has been of seminal value in physics cannot gainsay the fact that there was no justifiable basis for such an arbitrary assumption (arbitrary, that is, in 1900 when Planck stated it), other than that it enabled the theory to fit the experimental data.

### CENTRAL ETHOS – MODIFY THE HYPOTHESIS AND THEORY TO SUIT THE OBSERVED EVIDENCE

Deeply embedded in the scientific ethos is the ideal of always adapting, modifying or ultimately discarding the theoretical model (i.e. mental representations) to square with the observed evidence—the so-called facts; and not to debase the latter because an adequate model does not exist to describe them. Unfortunately the fact that science, at its convenience, violates its own 'Hippocratic oath' is an important matter which simply cannot be brushed aside.

#### Commentary – Violation of the Scientific Ethos

History is replete with examples of eminent scientists having their work ignored, distorted or vilified because their findings appeared to break new ground and so threaten established (and institutionalized) concepts. A classic example of this is the extreme embarrassment and evasive manner in which the orthodox scientific community reacts to the verifiable *fact* of Newton's concentrated and virtually continuous research into alchemy for a period over thirty years. More recently, over the last decade, a few notable instances of similar reactionary behaviour, out of sync with the scientific ethos of investigation into the facts in an unemotional and impartial manner without any bias of personal feelings, are:

1. The ostracizing of the biologist Rupert Sheldrake for postulating the concept of morphogenetic fields (which are non-physical) that appears to undermine the fortress of biological materialism.
2. The condemnation of the biologist Jacques Benveniste's work on the memory of water which provided a robust case for the homoeopathic principle, which is anathema to *orthodox* medical science (although many doctors are also

10 See the closing sections of *Quest.* 31 in Newton's *Opticks*.

11  $E = hf$  where  $E$  is energy,  $f$  is the frequency of radiation and  $h$  is Planck's constant.



practising homoeopaths). Britain's prestigious science journal *Nature* dispatched its editor along with two 'fraud busters' to Benveniste's laboratory, not with the scientific ideal of impartially and objectively investigating his work, but to discredit his conclusions. Irrespective of the validity or otherwise of his conclusions, such treatment appalled even some members of the scientific community.

3. Mounting evidence of superluminal velocities (i.e. faster than the speed of light which has hitherto been assumed to be a constant) has occasioned some consternation. At the Adriatico Research Conference in Trieste in August 1996, Gunter Nimtz, professor of theoretical physics at the University of Cologne, gave a practical demonstration of such superluminal travel. But infuriated colleagues in Germany protested not on the grounds that the demonstration was not true, but that *such a reality 'must not be allowed'* (because presumably its acceptance would upset a lot of scientific theories in vogue, and undermine the egos, status and attendant research grants of numerous scientists)!<sup>12</sup>
4. The deliberate falsification of Michel Gauquelin's serious and scientifically researched data on astrology to pervert his otherwise robust statistical demonstration of a valid case for astrology.<sup>13</sup>

All of the above and many other scientists have suffered unwarranted professional humiliation because their ideas were in violation of physical concepts entrenched as gospel by the scientific orthodoxy. These examples show how readily science attempts to disfigure the territory to fit the established map, even though it preaches the reverse as an ideal. The psychological defences of the scientific institutions to their established paradigms are well-nigh impregnable. (We are of

---

**Because of its pride and prejudice,  
vested-interest science tends to  
devalue the subject and denigrate the  
author of what it cannot understand  
or explain.**

---

course referring to the orthodox scientific body as a whole and not to those individual scientists whose integrity and ethic is unimpeachable and who are prepared to examine new evidence impartially.)

## Element 2: Fundamental Philosophy of Science – The Model of Realism

### ESSENTIAL CONCEPT OF MODELLING

The essence of scientific modelling lies in a re-presentation of the 'real, physically-sensed thing' in terms of a physical or theoretical (i.e. mathematical) replica—a model. The steps towards achieving this have just been explained. Even at this stage it becomes obvious that if, hypothetically, the model were exactly the same in every aspect and detail as the real thing, then it would not be a model but a

<sup>12</sup> This has similar overtones to the German report on the Hindenburg airship disaster where it was stated that sabotage 'cannot be contemplated'.

<sup>13</sup> This is fully documented in John Anthony West, *The Case for Astrology*, Viking Arkana, New York, 1991.

'second real thing'. A model, then, is constructed to re-present and predict those characteristics of the performance of real things that interest us. Therefore in a model, some dimension, aspect or attribute of the real thing is suppressed. This means that a model is necessarily limited in one way or another, and although it can simulate certain aspects of the real thing it re-presents, i.e. to answer those questions for which it was constructed, it can never be a complete substitute of the real thing in itself. All this is self-evident, but the implications need underlining by pointing out the distinction between realism and reality.

### **Implications – What Exactly Is a Model**

It is naive to think that we see, through our eyes, a real physical world outside of ourselves, which we then proceed to investigate by the method of science. What we assume to be the real world is our mental re-presentational model—world *in abscondito*—of the real world *in actu*. For example the 'real' world would assume very different realisms to persons born blind, colour blind, blessed with normal sight and gifted with clairvoyant vision. All these when asked would be describing not the real world *in actu*, but their particular experiences, the way it appeared to them, gained by ordering and patterning such experiences in the mind; they would be describing their mental re-presentational models, that is, the world *in abscondito*. The physical world as a whole, as also the objects and people in it *and our own bodies* are ideas in the mind (in consciousness), i.e. mental re-presentational models. We fondly assume we are dealing with real things, but we are dealing only with the patterning, or modelling of our mental experience. Even with so-called physical objects, we do not see or contact the object-in-itself, but our mental experience and re-presentation of it, whether verbally or mathematically (the role of mathematics in modelling is reserved for discussion later). These facts provide a clue to the understanding of maya and the fundamental Occult tenet that manifestation is ultimately a mental phenomenon—see Part III.

### **TENUOUS PHILOSOPHY OF WESTERN SCIENCE – REALISM VERSUS REALITY**

Because scientific knowledge is largely empirically based (that is, derived from sense-experience obtained from experiment, that is, physical observation), it lacks a firm philosophical footing; for witness all the shipwrecked theories—Nature *in abscondito*—in physics, consciousness research and the origin of the Universe, a representative cross section of which was given in Part I.<sup>14</sup>

This is why the realism philosophy of science is often referred to as 'naive realism' or pejoratively as 'see-touch realism', because the only 'reality' that science acknowledges is that which can be inputted through the five physical senses (in particular sight and touch), all else being labelled away as woolly mysticism, etc. C.W. Leadbeater's remark is apposite:

<sup>14</sup> To declare that all these theories are just 'models', as some scientists do, is no escape. For if science has the right to present its models, Occult Science can claim an equal hearing for its own doctrines which are far more consistent and profound than models.



**It is one of the commonest of our mistakes to consider that the limit of our power of perception is also the limit of all that there is to perceive.<sup>15</sup>**

The inadequacy of such a philosophy based on physical sensory input is that *the senses themselves are part of the model*—we do not see, hear, etc. actually, but re-present the input according to our particular mental re-presentational model. *Realism is confused with reality.* The next section explains why observation cannot be relied upon, as assumed by Western science, to provide a true account of ‘reality’.

### **Element 3: Reliance on Concrete Descriptions and Mathematical Formulations**

Mathematics principally concerns the relationship between two or more quantities. Formulae and algebraic equations deal with static relations and differential equations tell us how relationships change. *We can never learn through mathematics the intrinsic nature of the individual quantities—only the dynamics of their interaction.* The multitudinous systems and processes in the Universe, as indeed the origin of the latter, are patterned and supported by mathematical connections and interactions.

*Mathematical proof is not necessarily a criterion of veracity:* for it is wrong to think, as some scientists do, that because some aspect of Nature cannot be mathematically formulated, its validity must always be suspect. Stated differently, not all experiences or processes in Nature need (or are susceptible of) a mathematical proof for their authenticity to be demonstrable—other than inventing a new mathematics for such proof. Thus, unless a radically new mathematics be invented many subjective experiences and paranormal (out of the everyday-ordinary) phenomena cannot be mathematically expressed. This does not make their import and value any less authentic. For there are some facts and truths far more amenable to elucidation by symbols, metaphors, parables or myths, than description by mathematics (which is also, in a sense, a symbolic language with astonishing results when applied in the right context).

*Mathematical proof does not necessarily imply veracity:* for allied to the above, it is erroneous to assume that a conclusion has validity just because it is mathematically proven. It may or may not be, depending upon the choice of assumptions underlying the proof. This important point is revisited in due course.

Some observations on the misuse of mathematics, and conversely, its deeper implications that can deliver the scientist to the borderland of Occult Science will also be made later.

---

15 C. W. Leadbeater, *Man Visible and Invisible*, A Quest Book, 1971.

## Element 4: The Role of Physical Observation – and the Requirement for Impartial, Detached Observation

As indicated above, Western science bases its fundamental philosophy of truth upon what it calls *observed phenomena*. For example, Hawking states that for any scientific theory, 'the *real* test is whether it makes predictions that agree with observation.'<sup>16</sup> [Writer's emphasis.] Closely coupled to the importance of physical observation in scientific investigation is the associated requirement that such observations should be entirely detached and independent of any subjective influences, hence repeatable under exactly the same set of conditions. The attempted observation may be repeatable, but can one ever be certain that the phenomena will repeat themselves exactly?

The following real-life experiment demonstrates that even an unambiguously observable event is not seen truly, but *according to the mental conditioning of the observers*.

### WE SEE WHAT WE EXPECT AND WANT TO SEE<sup>17</sup>

During the course of a lecture on paranormal topics as part of a University Conversazione, Professor Arthur Ellison suggested to the audience that they try to levitate a bowl of flowers placed on a table. This was to be done by imagination and concentration, and also by chanting the word 'OM' believed in the East to be a sacred sound. After the proceedings commenced, the bowl of flowers levitated about 20 millimetres into the air and then crashed down again.

The audience in the main were staggered by witnessing something for which there was no normal explanation. However one lady said she noticed a 'greyish substance under the bowl lifting it and the same greyish substance under the legs of the table lifting that.' Then a Professor of Physics in the audience pronounced 'Well, I saw nothing!' and left the room. Nobody, least of all the lady and the Physics Professor, were aware that the actual levitation was caused by a purely physical arrangement of an electromagnetic levitator artfully concealed under the table; the OM chant was suggested in order to hide the humming sound of the levitator!

### Commentary – To see and hear is not necessarily to look and listen

Neither the lady nor the Physics Professor observed the true, objective fact of the actual levitation of the flower bowl, but rather 'saw' what they both *expected* (and therefore in a sense *wanted*) to see according to their own subjective states, conditioned by their own cultural make-up and belief systems, i.e. according to their own mental re-presentational models. The lady was presumably a

<sup>16</sup> Stephen W. Hawking, *A Brief History of Time*, Bantam Press, 1988, pp. 136–137.

<sup>17</sup> This is a summarized account of a private communication to the writer by Professor Ellison in August 1996. An inaccurate version of the story is given in the book by Kit Pedler, *Mind Over Matter*. Arthur J. Ellison is Emeritus Professor of Electrical and Electronic Engineering at The City University, London. He has twice been President of The British Society for Psychical Research (a *scientific* body for studying paranormal phenomena) and is the author of a comprehensive and lucidly presented book *The Reality of the Paranormal*, Harrap, 1988.

Spiritualist and therefore saw the greyish 'ectoplasm' lifting both the bowl and the table (her mental model), whereas in fact only the bowl levitated, the table having been screwed to the floor. By contrast, the Physics Professor saw nothing at all since his materialistic outlook (his mental model) would admit of no silly nonsense like levitation by imagination, concentration and chanting OM.

The flower-bowl experiment thus shows that, despite the laudable intention to strip out extraneous influences that could bias the results, what happens in practice is that the latter invariably hold sway; for both the lady and the Physics Professor were seeing according to their subjective states and neither was truly looking. Only the general public presumably having no particular persuasions (towards either Spiritualism or materialism) were able to look objectively and truly.

All this demonstrates that the disarmingly simple phrase 'physically observed' has deeper undertones of significance. Observation cannot always be relied upon for the 'real test' of a scientific theory. Perhaps it also shows that there is no sharp dividing line between the Cartesian notion of *res extensa* (what we fondly believe to be the observable matter) and *res cogita* (mind substance)—a point which will be taken up later. The corollary to this is that we also hear what we want and expect to hear, but we listen imperfectly—a statement too obvious to warrant comment, as the chairman of any disorganized committee would willingly testify.

## NAIVE LITERALISM

Allied to naive realism is what we can call naive literalism, whereby statements for example in the Bible and other scriptures are taken in a dead-letter literal sense without any appreciation of the symbolic nature and content of such works. Symbolism is the bane of Western science (and orthodox religions). An icon is a mental picture having a fixed meaning in the users' mind. But a symbol is an outer appearance of an inner, hidden (or occult) reality; therefore it encapsulates many levels of meaning and so must be understood in a multi-levelled sense. Symbols deal essentially with qualitative influences, not quantitative information, and because Western science deals primarily with the latter, it cannot fathom the former, so takes symbols in a literal sense, which of course leads to logical absurdities—such as the Seven Days of Creation which can hardly be taken to mean 168 hours! (In all fairness however, some self-styled Theosophists will attempt to escape from inaccurate facts by claiming that they were 'symbolic'. Symbols are *not* a camouflage for inexactitude.)

## SCIENTIFIC OMNISCIENCE – WHAT WE KNOW IS ALL THERE IS TO KNOW

Closely allied to the syndrome of 'What I see is all there is to see' is the attitude of 'What I as a scientist think and know is all there is to think and know.'<sup>18</sup> For example the present Astronomer Royal, Professor Sir Martin Rees claims that 'For all we are learning about our cosmic environment, I don't think the interface

---

18 Not a surprise since *thought as mental sight and physical sight are mysteriously coupled*.

with philosophers and theologians is, in principle, any different from what it was in Newton's day.' Reference to the work of post-Newtonian Kant, Schopenhauer, Blavatsky, Steiner, Gurdjieff, Brunton, to name a handful, will show just how much they have enhanced the subject of philosophy, which in turn has helped our understanding of 'our cosmic environment', both material and spiritual. Needless to say, philosophy is concerned more with the nature of cosmos rather than its mechanics and visible behaviour—the province of astronomy.

## **Element 5: Observer is Independent and Detached from his Observations**

The extreme subdivision of any object in the world, including our own bodies and brains, is to end with the subatomic particles that quantum physics has studied in detail. This has spectacularly shown that any particle (electron, photon, etc.) is not a cast-iron 'thing-in-itself', but depends upon the observer, his state of mind and the experimental set-up, i.e. upon a holistic approach. The observer cannot be divorced from his (reductionist) observations. They are two sides of one coin—refer to Fig. 2.13 in Section 2, and especially the quote by John Wheeler regarding the new concept in physics of participation.

## **Element 6: Reductionism – The Universe is a Great Machine**

As expounded by René Descartes, the reductionist approach is rigorously rational and analytical. The Cartesian concept is that any system is like a machine; such that it can be reduced to a logical ordering of its constituent parts in order to reveal its true nature. Inanimate mechanical components and animate organic systems (regarded purely as soulless machinery by the reductionist) can therefore be subdivided into their sub-components; and complex thoughts can be dissected by the 'intellectual knife' into a logical array of simpler fragments. This technique has been applied, for example, in physics in the search for the ultimate subatomic particle, and in consciousness research in an attempt to confine consciousness to specific area(s) of the brain as described in Part I.

### **SHORTCOMINGS**

Any such technique provides benefits when used within its proper field of application, and has drawbacks when pushed 'out of range'. The benefits of reductionism applied within its rightful context are too well known to dwell upon; but the overriding problems and deficiencies need emphasis.

The impossibility of detached observation has been explained with reference to the reductionist approach in quantum physics. Another shortcoming of reductionism is that it ignores the fact that the whole is greater than the sum of its component parts. This will be illustrated by way of an example.

Even though it can analyse the mechanics and electro-chemistry of the body,

wings and brain of a butterfly to the 'nth degree', Western science is at a loss to explain WHY (that dreadful word to science!) it cannot put such organic component parts together so as to produce a living (not robot-like simulation of a) butterfly. Does this not suggest that a system or an organism is *more* than just the sum total of its constituent parts? The reductionist approach obviously offers great promise within its rightful range of application, that is, inquiry into the mechanical or physical aspects of a system or organism. But to carry reductionism to extremes and claim that it has superiority over all other modes of inquiry is to end in absurdities. For there is no way in which we can learn the *nature and secrets*, as opposed to the mechanics, of flight by crushing a butterfly's wings and observing it under a microscope, or by studying the fossil remnants of wings. *Because soul and spirit cannot be unearthed through reductionism does not mean that they are the chimerical fantasies of deluded mystics.*

Similarly, by downgrading consciousness to force-fit it (like a square peg thrust into a round hole) into simplistic reductionist-mechanistic theories, produces the sort of inconsistencies and dilemmas illustrated in Part I.

---

**Analysis is a useful tool of scientific investigation, but not at the cost of an over-riding synthesis.**

---

## **Element 7: The Physical Universe is the Only Reality – Paranormal Phenomena are Suspect and Consciousness and Thought are Merely the By-product of Brain Activity**

This attitude shows that confusion and assumptions reign on three fronts:

1. The map is confused with the territory. Anything that does not fit the scientific model (map) is rejected out of hand. Typical examples are given later.
2. Noumenal causes are being confused with their phenomenal effects (e.g. the measurable aspects of consciousness in the physical brain). We shortly demonstrate the fallacy of the scientific view that consciousness is the product of brain activity.
3. That which science cannot explain on its own terms is ignored or taken for granted as the 'laws of nature' or 'just one of those things'. For example how and why are the attractive and repulsive forces within the atom held in such delicate balance?

## Limitations of the Scientific Paradigm

**It is pathetic to hear men reason in so shallow a way that they find nothing more than mere chance in the coming together of nuclear forces to make a world.**

PAUL BRUNTON

Western science has an elegant overall model and associated sub-models to explain and predict the physical and mechanistic aspects of the Universe. These are essentially *quantitative* in nature, to do with *measurement*, and are just one way of modelling or patterning our mental experience. However, *qualitative influences* that cannot be so measured do not fall with the purview of science. Having no mechanistic models to describe them, science responds either by describing them in terms of their measurable effects on the physical plane or by discrediting them with angry contempt. For example:

*Description in terms of effects:* so that consciousness is only the oscillation of brain cells. Music is only vibrations in the air of a certain frequency that causes corresponding electro-chemical information received by the brain. The beautiful hues of a sunset are only light of a certain wavelength impinging upon the eyes and causing electro-chemical impulses via the optic nerve to the brain (in which case by exactly reproducing light of such wavelength in our laboratories, why do we not experience that sense of awe as when facing the actual sunset)?

*Discrediting presumptuously:* so Occultism and Theosophy is mumbo-jumbo, whilst clairvoyance and other paranormal phenomena are superstitious nonsense or trickery (para-normal simply means that which is unaccountable by the scientific model of realism—the ‘normal’ explanation nowadays). Astrology and tarot are, of course, contemptible fortune-telling. Out-of-body experiences are entirely the result of endomorphins in the brain of the gullible individual. Telepathy and precognition are just coincidence. Complementary medicine is quite unscientific and spiritual healing is pure witchcraft or hocus-pocus. Psychic and mediumistic phenomena are ‘a heady brew . . . concocted out of equal parts skilful charlatans and upper-class audiences’.<sup>19</sup> Reincarnation (for which definitely no scientific model exists) is ‘jibberish’ for ‘To claim that there is some sort of transferable label—the soul—which is otherwise quite devoid of properties save to display some mystical registration mark, is a totally meaningless conjecture.’<sup>20</sup> These sort of remarks also serve to demonstrate the confusion between what scientists *think* they know as opposed to what they **ACTUALLY** know about subjects outside the boundaries of Western science, therefore totally beyond their ken.

19 The standard scientific response elegantly expressed by Carl Sagan and Ann Druyan, *Shadows of Forgotten Ancestors*, Arrow Books, 1993.

20 Paul Davies, *God and the New Physics*, Penguin, 1990, pp. 90–1. With respect, the ‘jibberish’ and ‘meaningless conjecture’ refer to the *author’s concept* of reincarnation, (i.e. his invented mental model, or the way he has mapped it out in his mind), and not to the subject itself. No esoteric book of wisdom ever understands soul in terms of a ‘mystical registration mark’ that is ‘quite devoid of properties’.



## SUBJECTIVE EXPERIENCE – HOW WESTERN SCIENCE ATTEMPTS TO CIRCUMVENT THIS ISSUE

Quoting Descartes' famous assertion: I think, therefore I am (*cogito ergo sum*) seems to be the manner in which Western science attempts to explain away, or circumvent the awkward fact of subjective experience;<sup>21</sup> as for example when faced with the question: visible red light indeed has a measurable wavelength of order 650 nanometres ( $650 \times 10^{-9}$  metres), but we do not 'see' wavelengths (least of all such small values), but we *experience* the colour red. A little consideration will show that whereas Descartes' remark was an honest admission of his personal frustration, philosophically it is untenable. For cerebration is a derivative product, not a primary factor of our being. 'I AM, therefore I (can) think'<sup>22</sup> is the philosophically true account. Incidentally, Descartes' philosophy was summarily dismissed by both Leibnitz and Newton, the latter declaring it to be 'absurd . . . confused and incongruous with reason . . .'<sup>23</sup>

## CONSCIOUSNESS IS A BY-PRODUCT OF BRAIN ACTIVITY – THERE IS NO INDEPENDENT PRINCIPLE OF MIND

The popular remark: 'The mind secretes thought as the liver does bile' encapsulates the notion that consciousness and thought (often confused) are the (by)product of the activity of cerebral matter—a notion solidly entrenched within scientific orthodoxy, a few notable dissidents excepted, as summarized in Part I. The fallacies in the scientific argument against an independent mind principle are highlighted in the flow diagram of Fig. 3.4.

### Using Mind, to Deny Mind as an Independent Principle

The diagram below shows how orthodox science uses mind—Steps 1 to 4—in order to deny mind as an independent principle—Step 5. It is obvious that a total contradiction exists between Steps 1 to 4, with Step 5. Of what intrinsic value is scientific thought applied to weighty issues such as the origin of Cosmos and the nature of man, if the very production of such thinking is merely the by-product of brain cells whose electro-chemico-mechanical activity is governed by the statistical laws of probability (which laws themselves are formulated using thought—thus resulting in a circular argument)! If a superficial, mechanistic process is used to answer profound questions, of what value are the answers so derived? *In this way (orthodox) Western science denies the very fountainhead of its wonderful inspiration and activity by chewing off the Divine Hand of Consciousness and Mind that feeds it with the intellectual food of thought. Thus does (orthodox) scientific 'thought' do violence to common sense and reason.*

*The clear and logical exposition to scientists of the seminal fact of*

21 The writer has frequently heard scientists resorting to this escape-route quotation without the least understanding of its philosophical basis and context, namely, Descartes' inability to reconcile extended matter (*res extensa*), and thinking matter (*res cogita*), which he regarded as fundamentally separate.

22 Numerous references in *The Notebooks of Paul Brunton*. Brunton promulgated the doctrine of mentalism which presents in modern terms the heart of the esoteric doctrine on mind, maya, etc.

23 Halls, p. 124. Original Latin, p. 92.



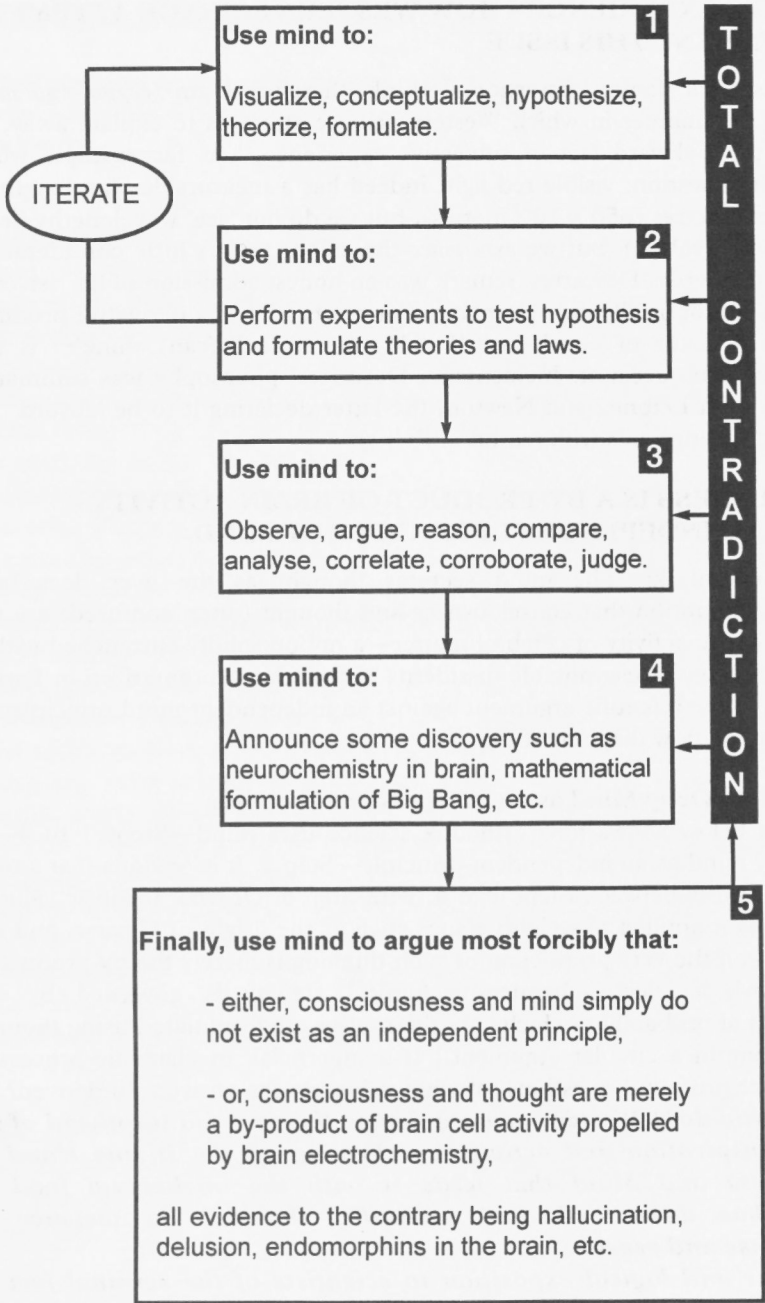


Fig. 3.4 How Science Uses Mind to Deny Mind as an Independent Principle

*consciousness and intelligence being primal, and not an effect or by-product of cerebral activity, is crucial to preparing the ground for Occult Science to provide a stronger guiding hand upon Western science than has hitherto been possible.*

\* \* \*

To conclude, Western science admits with honesty that it does not pretend to understand the ‘why’, but only the ‘what’ of Nature (see Fig. 3.1). *But what is untenable and intolerable about this stance is on the one hand, the admission by Western science of its own shortcomings, yet, at the same time, its dogged refusal even to listen to other doctrines (such as those of Occult Science) on the grounds that only its own methods are the authoritative ones for investigating Nature.*

## THE MASKS OF SCIENCE<sup>24</sup> – MATHEMATICS AND STATISTICS MISAPPLIED

### Importance of Underlying Assumptions in Mathematical or Logical Conclusions

Mathematics can, (or can be made to) prove just about anything, by judiciously selecting the underlying assumptions and postulates that suit our convenience, and ignoring those that do not. So by anticipating the conclusion—based either upon prejudice or experimental evidence—one can work backwards towards the assumptions and postulates that must be adopted to support it. The fact that the conclusion is mathematically proven can sometimes provide the counterfeit stamp of authority, whilst concealing those factors that were chosen to suit the validation.

As an example, we explained in Section 2 how Planck’s assumption of energy in discrete quantities based on experimental data led him to formulate a fundamental law of quantum physics with glorious implications for the further advancement of science. Nevertheless, the assumption was chosen to fit the desired conclusion.

An example of false conclusions resulting from faulty assumptions is the whole question of the evolution of humanity on the globe. Now:

1. if we **assume** (incorrectly) that the anthropoid apes preceded mankind (an unsubstantiated assumption now hopelessly buried deeply within the scientific fraternity); then if
2. we find that fossil research, structural features and physiological factors such as DNA show close similarities between apes and Man;
3. we have proved that mankind emerged from the apes, such ‘proof’ being more of a logical extension of the initial assumption.

<sup>24</sup> A phrase borrowed from the title of SD-2, Part 3, Sec 5.

---

**Anything can be proven mathematically, or logically, given a suitable choice of assumptions. What is logical is not necessarily true.**

---

The *logic* in 2. and 3. above is impeccable; but the incorrect original *assumption* in 1. upon which such logic was based, has led to a nonsensical conclusion. But if instead we assume on

the basis, not of conjecture, but of the huge weight of evidence and hard facts provided by the Occult literature<sup>25</sup>—that mankind preceded the anthropoid apes, then Step 2 also leads to the logical corroboration of the initial assumption.<sup>26</sup>

Any scientific conclusion is framed and supported by its governing assumptions. Correct logic and methodology in no way guarantees a truthful outcome, only an outcome logically consistent with the founding assumptions. *We need to pay even more heed to assumptions and premises than to methodology, because errors in the latter are more easily detectable than ingrained flaws in the former.*

## Statistical Methods - Their Value and Limitations in Scientific Inquiry

Save by resorting to statistics applied within the context of the realism model, Western science has no viable alternative methods of evaluating the authenticity, or otherwise, of subjects that lie outside this model, such as complementary medicine, psychic phenomena, telepathy, astrology. Sophisticated statistical techniques are now so ingrained into the methodology of science, both in its own field of application and its judgement of paranormal phenomena (such as those listed above), as to warrant serious examination of precisely what truths statistics can impart. Can statistics prove anything and what do their findings imply? Are all paranormal phenomena dubious until their occurrence has been statistically proven to the satisfaction of science?<sup>27</sup> *The resolutions of such questions is crucial for the well-being of Occult Science when faced with a barrage of scientific scepticism about its teachings.*

### WHAT IS STATISTICS?

Statistics is a systematic branch of mathematics concerned with inferring a conclusion about a system by collecting and analysing a representative selection of numerical data, generally in large proportions, from the behaviour of that system.

### WHEN DO WE RESORT TO STATISTICS?

If by analysing a representative sample of the population we establish that every

---

25 For example the whole of the Anthropogenesis section of *The Secret Doctrine* and especially Volume 4, Science and The Secret Doctrine Contrasted, pp. 215–366.

26 Many other examples can be given of similar types of spurious arguments such as that of some geneticists who claim that humans evolved from monkeys because we share 98.5% of our DNA with the chimpanzees.

27 We previously stated how orthodox science readily mutilated the data assembled by Gauquelin in order to disprove his careful statistical demonstration of the case for astrology. It is the old story that when prejudice is allowed to overthrow truth, science will either use the flimsiest data that supports, or twist hard facts that hinder its preconceived conclusions.

family in the UK has, say, 2.3 children,<sup>28</sup> this information helps us to plan education and other social needs. Statistics therefore has obviously beneficial uses for economic, production and commercial strategies for the group rather than the individual. But what can statistics offer when used as a scientific tool for assessing and verifying the authenticity of something? In science we generally use statistics when we do not understand the intrinsic nature and workings of something, and must therefore assess its suitability in terms of its observed effects. *Statistics can sometimes be an implicit admission of ignorance, and, worse still, it can be misused to camouflage and organize ignorance by providing it with a glossy veneer of scientific (mathematical) respectability.* Let us carefully examine this admittedly provocative statement by way of typical examples to illustrate the limitations and benefits of the statistical method.

If we wish to assess whether microwave radiation from electricity power lines can be a contributory factor in causing cancers, say leukaemia, in the population at large that is exposed to such radiation, we can either:

1. *Statistical approach:* infer the probability that the population at large in the vicinity of power lines will contract leukaemia by analysing historical data to calculate the frequency of leukaemia that occurred in a representative sample of humans (or other biological organisms) exposed to similar radiation doses; or alternatively –
2. *Ontological approach:* directly understand the effects of radiation on humans by actual knowledge of the laws of physics, physiology and their interaction.

*Limitation of using statistics:* is that we have no idea of **who** will contract leukaemia—only the **probability** of such affliction and its potential consequences, in order to –

*Benefit in using statistics:* plan appropriate medical facilities, insurance policies and the budget for compensation payments.

We have to use statistics when we are ignorant (by choice or force of circumstances) of the subject of inquiry (the potentially harmful effects of radiation on humans in the example above). Our only recourse, then, is to treat the matter as an unknown 'black box' and assess its viability by empirically analysing its effects 'from outside' on a representative test sample. How preferable it would be (whenever possible) to understand the nature and workings of the matter 'from inside' in which case we are equipped to deal with all causative factors and logical outcomes (the Occult approach).

Similar arguments could apply to statistical analysis of clinical drug trials.<sup>29</sup> Because we do not know the effects of administering a new drug on the population at large, we administer it to a representative sample of similar

<sup>28</sup> 2.3 children is meaningless in real terms, although it has a valid 'mathematical reality'. Other cases can be cited where a proven 'mathematical reality' does not necessarily correspond to the actual state of affairs. This has strong esoteric implications.

<sup>29</sup> This is meant as an observation, being neither a criticism, or a commendation of statistical techniques used by the drug industry.

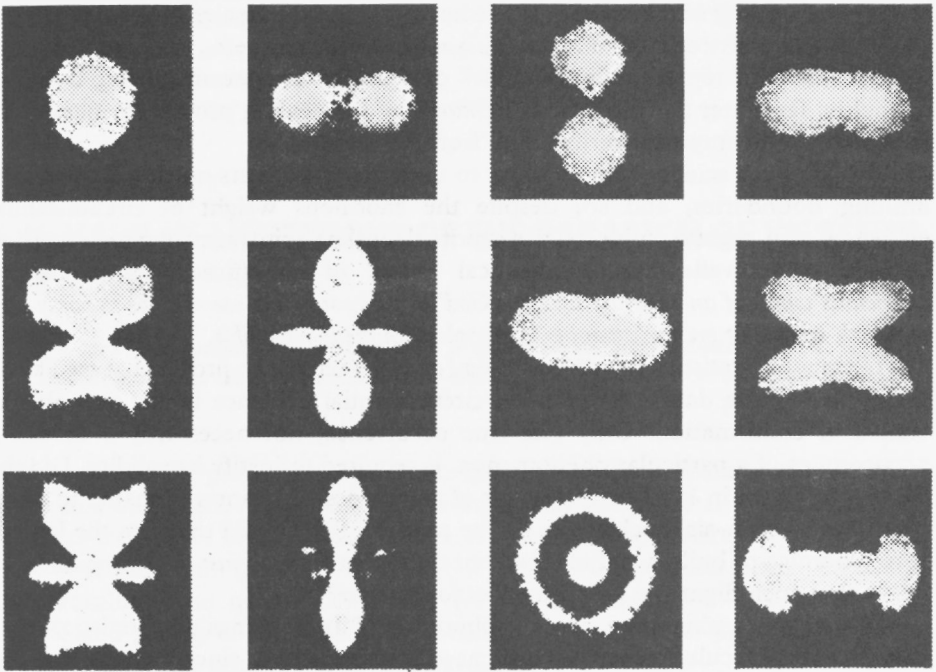
organisms (rats or humans) and infer from the results the effect on the whole population from analysis of the results of sample tests. If we somehow acquired internal knowledge of the interaction between the drug and humans, we would not need to attempt an external understanding of it by analysing its effects on large samples. Under some circumstances, ignorance may be unavoidable, but it is still ignorance and therefore no defence!

## ROLE OF STATISTICS IN QUANTUM PHYSICS

The prevalent scientific attitude is a perverse one of a *materialistic outlook without physical (i.e. ponderable) matter* as the solid basis for such an attitude—see Fig. 2.13. The discoveries in quantum physics having robbed science of its material basis—hence its founding model of realism—probability waves have sometimes become an escape route to add a mathematically-polished veneer of respectability to the lost *terra firma* of science. Capra (with other atomic physicists at the frontiers of physics) states that the statistical formulations used in quantum theory do not reflect ignorance of the physical situation, for it is now recognized that probability is a ‘fundamental feature of the atomic reality which governs all processes, and even the existence of matter’. He shows some visual models of probability patterns, reproduced below as Fig. 3.5 and states that ‘subatomic particles do not exist with certainty at definite places, but rather show “tendencies to exist”, and atomic events do not occur with certainty at definite times and in definite ways, but rather show “tendencies to occur.”’<sup>30</sup> However the writer cannot entirely agree with this claim. For it shows a confusion between an object and its shadow. The probability patterns in Fig. 3.5 are so to speak, the ‘mathematically-entified shadow’ of the actual quantum entities. Probabilities are meaningful when applied to things that physically exist; but when used to account for the *very nature of existence*, what then is their value? Mathematically appealing, what do probability waves say about the essential nature of physical matter, the fundamental reality for science? ‘Probably’ nothing. For as previously stressed, mathematics deals with relations between variables, but leaves the essential nature of the latter untouched, (which is not a criticism of mathematics, only a frank acknowledgement of its limitation). *Probabilities are the final support and weapon that Western science has left in its struggle for materialistic supremacy and its ever-losing battle against the steady incursion of mind and consciousness into its own considerations.* Pull out the ‘probability-rug’ from underneath quantum theory, and mayhem is sure to ensue! Already, some scientists are realizing that probability waves and the whole issue of probabilities in general, may satisfy the intellect—but reason is invariably masked and left cold.

It is fascinating to note that on the one hand, scientists champion the notion of probabilities as the mathematical description of the *potentialities* within a physical situation. But yet in their pursuit of the ultimate building block of matter, they use the Cartesian method of reductionism, which in the words of

30 Fritjof Capra, *The Tao of Physics*, Fontana/Collins, 1977, pp. 136–7. Notwithstanding the above quibble, this is a delightful and useful book that explores the parallels between modern physics and Eastern mysticism.



Notes:

- Entire pattern represents electron at any given time.
- Electron likely to be present (but not definitely) in white areas, and unlikely in black areas.

Fig. 3.5 Visual Models of Electron Probability Patterns from Fritjof Capra, *The Tao of Physics*

founding father Descartes, 'reject[s] all knowledge which is merely *probable* and judge that only those things should be believed which are perfectly known and about which there can be no doubts.'<sup>31</sup> [Writer's emphasis.] *Such inconsistency is yet another example of the way in which the feeble philosophy of Western science is now increasingly feeling the effects of the suffocating grip of its mechanical paradigm of realism.*

But science is indeed the ally of *Theos-Sophia*. Part III shows how these probability waves have dragged science closer to the borderland of Occult Science.

## CONCLUSIONS

With mechanical systems in which the number of variables can be controlled, statistical methods are viable. But they become impotent in the investigation of paranormal and other phenomena comprising an enormous proliferation of variables, to say nothing of the extreme difficulty of obtaining test samples of similar type. For example, spiritual healing involves countless variables such as

31 N. C. Panda, *Maya in Physics*, Motilal Banarsidass Publishers Private Limited, 1991, p. 14.



the type of healing administered, the temperament of the healer, the temperament of the subject, environmental factors, planetary influences, etc., so that to obtain a large number of representative samples of a particular type of healing becomes unwieldy: far better to understand the *nature* of the healing process 'from within', in preference to empirical verification 'from without'.

But Western science refuses to try to understand subjects outside its own self-limiting boundaries, and so, despite the enormous weight of circumstantial evidence, still regards subjects like spiritual healing with arms-length suspicion because of unavailability of statistical 'proof' of its efficacy. *Postulating the capricious whim of an external 'Creator God' or using statistics seems to be the only way in which science at present attempts to grapple with the inexplicable.*

Ultimately statistics *proves* nothing (or can be made to prove what we like by manipulating the data) and genuine circumstantial evidence is just as viable as statistical confirmation. Only one true occurrence, not necessarily a thousand occurrences of a particular phenomenon, is required to justify its validity. Did the Wright Brothers in 1903 fly thousands of aeroplanes of all sorts of shapes to prove that heavier-than-air machines could be made to fly? Or did they use the laws of aerodynamics to build a rudimentary machine that flew *on just the one occasion*, to prove that such flight was a definite fact for all time?<sup>32</sup>

Whilst welcoming, then, any corroboration of its teachings that statistical tests may provide, Occult Science has little need of this method, since it works from insights into the deepest secrets of nature and therefore has minimal use for empirically acquired and mathematically ordered evidence.

## Technology Abused<sup>33</sup>

Western science, both empirically and its application in technology continues to soar at a phenomenal rate. This technological virtuosity has unfortunately tended to cover the fact that the underlying philosophy and understanding of science are ever-shifting so as to provide anything but a consistent account of nature. This is because it chooses to ignore realms of being beyond the physical scope of its inquiries, pretending (and hoping) either that such vistas do not exist, or that if they do, all will eventually fall within the ambit of ever more advanced scientific instruments of detection.

Technology is a double-edged weapon. Correctly applied (i.e. the minimum amount for the need) it confers (and has done) tremendous boons on mankind. When however it becomes a self-indulgent end in itself, it masks the philosophical weaknesses in the scientific model and its worst effects are the immoral and unethical practices, having outrageous repercussions in a manner akin to black magic, that occur when 'techno-crazed' science arrogantly decides that it has the

32 Notwithstanding the fact that even though numerous eye witnesses testified to the event, the prestigious *Scientific American* journal and also the military derided the event on the grounds of its impossibility—a glaring example of the slow pace at which new ideas take root in science, in spite of all the evidence and proof.

33 To confuse science with its hard 'outer lining' of technology is as inexcusable as to confuse akasha with the astral light!



---

**It is fundamentally wrong to equate the advancement of technology with the progress of truth and science.**

---

sole rights to manipulating the forces of Nature and plundering (as well as polluting) the Earth to suit its own egoistic purposes.<sup>34</sup>

## SUMMARY OF LIMITATIONS OF THE PARADIGM OF WESTERN SCIENTIFIC

**We are compelled to wither the preachers of mad materialism with scathing scorn. Gentle words fall off their ears like water off a duck's back.**

PAUL BRUNTON

It is clear that the paradigm of scientific materialism has unparalleled superiority over other approaches to modelling and organizing the physical world, but that it can deal with other levels of existence and realms of experience only in terms of their observable and measurable effects, if any, on the physical plane. Occultists have absolutely no quarrel with this, for the application of such science has contributed greatly to the health, well-being and comfort of physical existence. However there are serious pitfalls to be avoided.

The spectacular success of science and technology applied to everyday living has resulted in a tendency to jettison all experiences that do not fit, or cannot be 'explained' by the scientific model. So many scientific theories (especially in evolution and cosmology) are like sand dunes in a desert—imposing structures, until the windy blast of new facts blows it to nothing and the bewildered pilgrim having pinned his hopes on a landmark, finds himself lost in the shifting quicksand of inconsistent intellectual concepts. But the bastions of empirical science for protecting its own model are massive, and it is a hard fact and a sad one that no amount of clear, logical and *scientific* reasoning backed by copious *factual* evidence will penetrate the psychological armour of hard-headed materialists. Other means of access to the impregnable fortress of scientific realism must therefore be found. An example of this impasse is illustrated at the

close of this section by way of an imaginary, but typical conversation between a scientist and an Occultist!

Scientists who so liberally accuse the believers in subjects like astrology and tarot of dark-age superstition would do well first to admit the bigotry of the superstitious priests of the new cult of

---

**Those scientists who despise religions have set themselves up as the bishops of the 'Church of Scientism', having naught to do with true science. This religion of materialism demands just as much *blind faith* as the orthodox religious institutions.**

---

<sup>34</sup> Small wonder HPB remarked that Nature's 'etheric Force' as discovered by the famous American inventor John Worrell Keely could not be publicly disclosed until 'the great roaring flood of starvation, misery, and underpaid labour ebbs back again [and] the pitiful cry for bread, that rings unheeded throughout the world, has died away.' *SD-2*, p. 287.

materialistic scientism (not the same thing at all as science). They confuse their own concept of the paranormal with the latter itself. They confuse, that is, what they *think* they know with what there is to know; i.e. the mental concept with the reality. Hence their accusations are ultimately aimed at themselves! Of course, astrology and tarot, etc. attract cranks, *but so does science*. Is the veracity of a subject to be judged by its lunatic proponents—the practice with the deluded practitioner? *Curiously, though, the very charlatans ‘prove’ the genuine quality of that which attracts them. One cannot have moths without a light that attracts them, or barnacles without a structure to adhere to, or rust without pure metal underneath. Just as*

*rust owes its origin to the pure metal, one cannot be a charlatan in a vacuum—without a pure subject in the first place to latch on to!*

---

**It is easy for science to ask for evidence of the paranormal. It is hard to face it honestly when so supplied.**

***Cranks and fundamentalists are attracted to science just as much as to religion and the paranormal.***

---

In summary, to confuse the descriptions (mathematical or otherwise) with the described, or the maps with the territory, or the models with the real

thing, or the masks with the true facts—these are all different ways of transmitting the same message and warning to empirical science, that its version of (naive) realism may have some correspondences with the manifestations of reality, but is not the same as reality.

Science has already admitted this quite frankly. For example, Gribbin states: ‘The point is that not only do we not know what an atom is ‘really’, we *cannot* ever know what an atom is ‘really’. We can only know what an atom is *like*.’<sup>35</sup> In other words, it is not that the physicists’ practices and methods have ever led to a unique discovery of what an atom *is*; rather they have constructed the various atomic realities by analogy to everyday experience; so that sometimes an atom is *like* a billiard ball, or *as though* it were a planetary system, or *as if* it were a nucleus surrounded by a ‘cloud’ of electrons—depending upon the kind of question or behaviour of interest. It is obvious that even at this elementary stage, reference to everyday experience invokes the participation of the observing consciousness, for what would the billiard-ball model of an atom mean to someone who had never played billiards?

Science, then, has acknowledged that it will never, and can never, understand what Nature or the atom is really—in *actu*; but only what it is like—in *abscondito* appearances—depending on the questions asked. (Einstein himself admitted this as stated in Section 2.) But having given up all hope of understanding the nature (not behaviour) of atoms and light, science contents itself with empirical evidence that is becoming increasingly contradictory and inconsistent—and deals with the confusion by resorting to probabilities or wild conjectures (such as splitting minds) that do violence to common sense. Einstein has on more than one occasion expressed the (forlorn?) hope that statistics would provide only a temporary refuge and expedient before deeper truths became apparent.

---

35 John Gribbin, *Schrödinger’s Kittens*, Weidenfeld & Nicolson, 1995, pp. 186–7.

Ellison describes the philosophical implications of the scientific predicament very succinctly:

**It is important to use our mental models correctly. To speak about psychical experiences, or about religious (transcendental) experiences in terms relating to the 'physical world' is to make what the philosophers would call "category errors" and to talk nonsense. The realism model is inapplicable.<sup>36</sup>**

Perhaps the following quasi-mathematical expression might resolve the impasse and help science to understand what the atom is 'really':

What the atom is 'like'  $\times$  input of consciousness '=' What the atom is 'really'

## ESOTERIC IMPLICATIONS OF MATHEMATICS – THE BRIDGE TO OCCULT SCIENCE

**Modern physics, mathematics, and metaphysics are bridges towards each other.**

PAUL BRUNTON

An esoteric catalyst to our scientific inquiries is badly needed. This will be accomplished by indicating the deeper implications of mathematics, a subject that brings science into 'borderless touch'<sup>37</sup> with Occult Science.

## Mental Nature of World from Mathematics

It was previously mentioned that mathematics concerned relationships between quantities, expressed in terms of formulae and equations. At base therefore, mathematics is the science of mental relations expressed by means of symbols that invariably penetrate deeper than verbal discourse and ratiocination. No scientist would deny that mathematics is an entirely mental subject, for it exists only in the mind of the scientist. But mathematics is also supposed to pattern and frame the phenomena of the so-called physical world. Now a physical frame is needed to support and contain a physical structure—mental scaffolding cannot be used to contain a physical edifice. If, then, a mental framework—mathematics—is used to

frame the physical world, it is obvious that this world, though apparently physical to sensate experience, is *mental in its essential nature*—a deeply Occult tenet that will be expounded in Part III.

---

**Mathematics is a mental science; so it can pattern only a basically mental world.**

---

36 Arthur J. Ellison, *Modelling, philosophy and limitation*, Computing & Control Engineering Journal, August 1993.

37 An evocative term used by Kahlil Gibran, albeit in a slightly different context.

## Divine Mind Works Via Mathematics

‘God geometrizes’ is an old saying. It alludes to the following grand transformative process in Nature:

Deity → Divine Mind → Mathematical metamorphosis → Divine functions → laws of nature in science

Worlds are made to:

*appear* by 'addition' and *disappear* by 'subtraction';<sup>38</sup> *proliferate* by 'multiplication' and *differentiate* by 'division'

The above shows the role of mathematics as operator and transformer for the Divine Mind to define, control and regulate Divine functions which are recognized on the physical plane by Western science as the so-called laws of nature. Such metamorphosis can be regarded in the sense of a transformation by the 'mathematical motion' induced by the four basic operations of addition, and subtraction, multiplication and division.

## What Exists Can be Mathematicized

Every mathematical fact corresponds to some reality or facet of ex-istence, i.e. *manifested* reality. Conversely, every reality of existence must ultimately correspond to a mathematical truth. However, much new mathematics needs to be *invented* to pattern orders of existence beyond our familiar four-dimensional space-time world. Promising progress continues in this direction. For example there are around 30 different non-Euclidean geometries. These point towards worlds in different space-time orders, and perhaps even non-physical realms of being.

## Further Esoteric Clues

**Convergent Mathematics Series:** being the infinite series that converges to a single number hints at (not proves!) the Occult doctrine of infinite worlds emanating from their single Divine Source (further details in Section 7).

**Differential Equations:** where any differential equation that expresses a general class of physical phenomena are quite unaffected by however many particular solutions of the single equation are obtained. This assists in understanding the Occult tenet of the infinite Divine Consciousness and Power being undepleted by any number of Universes that It manifests (further explained in Section 9).

38 Thus *manvantara* may perhaps be 'God adding' and *pralaya* 'God subtracting'—a suggestion hardly to be taken literally!

# THE PHILOSOPHY, CONDITIONS AND METHOD OF OCCULT SCIENCE – DISCOVERING THE ‘HOW’ AND ‘WHY’ OF NATURE

KEYWORDS: Platonic, deductive, revelation, corroboration, morality, ethic

The veil that clouds your eyes shall be lifted by the hands that wove it,  
And the clay that fills your ears shall be pierced by those fingers that  
kneaded it. And you shall see And you shall hear. For in that day you shall  
know the hidden purpose in all things . . .

KAHLIL GIBRAN, *The Prophet*

## Introduction

Genuine Truth-seekers display the qualities of:

1. assuming absolutely nothing initially, and desiring to find out everything;
2. sustaining a consistency of doctrine on all fronts such as science, religion and philosophy;
3. using tools appropriate to the investigation, for example, formulae and mathematical physics where quantitative precision and data are sought; symbolism and myth to point and lead towards truths that are ineffable in the concrete terms of Western science;
4. maintaining a total (holistic) view, with due attention to detail, but not allowing obsession with the latter to blur the grand picture.

It is the ever-increasing involvement with a narrow and partial viewpoint resulting in specialist subdivisions without consistency of approach, along with arbitrary assumptions, that has bedevilled the march of science towards Truth. A fair, if unkind, example of the major divisions in science is the story of the three brothers touching different parts of an elephant in the dark. One brother touched the foot and declared it to be a foot-stool; the second touched the tail and called it a paintbrush and the third felt the trunk saying it was a hosepipe. They started quarrelling until someone brought a light. Realizing they had touched only different parts of the one elephant, all disagreements vanished. Now do cosmology, consciousness studies and the investigation into sound and light, along with the innumerable subdivisions of these major disciplines, ever *come together* to present an *integrated and self-consistent* truth of the Universe?<sup>39</sup> Assuredly not, as shown in Part I. The glaring inconsistencies are largely due to partial viewpoints, unjustified assumptions and a peculiarly unscientific attitude of purporting to discover Truth, but arbitrarily disdaining subjects like mind and consciousness, and the superphysical worlds, as being the playground of gullible mystics or rambling philosophers, unworthy of scientific inquiry. Truth is an indivisible whole and so its discovery must involve a total approach involving, at

<sup>39</sup> For that matter, we might also cite the fragmentation between biology, chemistry and physics.

the least, science, religion and philosophy—refer again to Fig. 3.1. The light of Occult Science can harmonize all dissensions within science by demonstrating their intrinsic interconnectedness and revealing their ultimate common Divine origin.

## Qualifications for Occult Instruction

**Give not that which is holy unto the dogs, neither cast ye your pearls before swine, lest they trample them under their feet, and turn again and rend you.**

MATTHEW 7:6

**Occult Philosophy divulges few of its most important vital mysteries. It drops them like precious pearls, one by one, far and wide apart ... For once out of the safe custody of their legitimate heirs and keepers, those mysteries cease to be Occult: they fall into the public domain, and run the risk of becoming curses more often than blessings in the hands of the selfish—of the Cains of the human race.**

*THE SECRET DOCTRINE (SD-2, pp. 281–2)*

Any instruction imparted contains an implicit injunction that the recipient be suitably qualified (*a*) first to receive it; and then (*b*) to impart and use the teaching so received wisely.

For scientific work, degrees, doctorates and fellowships of professional institutions are the necessary qualifications, and rightly so. But for Occult instruction the necessary qualifications are far more recondite. Physical health and suitable mentation are obvious prerequisites, but the supreme requirement is a feeling of brotherhood amongst all peoples and the ensuing ethical and moral basis of character whereby such an ideal can be realized in practice. This is emphasized in the letter to Sinnet from Mahatma M.: 'It is he alone who has the love of humanity at heart, who is capable of grasping thoroughly the idea of a regenerating practical Brotherhood who is entitled to the possession of our secrets. He alone, such a man—will never misuse his powers, as there will be no fear that he should turn them to selfish ends.'<sup>40</sup>

The fact that in Occultism such heavy emphasis is placed upon the moral and ethical qualifications necessary for the instruction may come as a shock to those who believe such teachings can blithely be 'imparted' to all and sundry. The primary reason for laying so much stress on the character and selflessness of the disciple, as also on the secrecy surrounding such teachings, is that the misuse, for selfish, egoistic ends, of Occult knowledge would produce hideous results (so-called Black Magic or sorcery)<sup>41</sup> in comparison with which the horrors of atomic

<sup>40</sup> Letter No. 38 (chronologically No. 33).

<sup>41</sup> Isaac Newton, one of England's greatest Occultists, guarded dangerous alchemical secrets scrupulously from the spiritually unregenerate public at large (he referred to them as 'ignorant vulgars') and scolded Robert Boyle for disclosing too much.



warfare would pale into insignificance. No one trusts dynamite in a child's hands, even though the explosive can be utilized profitably by a responsible adult. It is the same with Occult instruction, a truism that cannot be 'proved', but is intuitable by a perceptive reader, and verifiable with reference to the vast literature on esoteric matters, both Eastern and Western.

In HPB's words: 'Unless the intention is entirely unalloyed, the spiritual will transform itself into the psychic . . . and dire results may be produced by it.'<sup>42</sup> This is no exaggeration. Has nuclear power been used to bequeath unqualified blessings on humanity? Has not this force of nature sometimes (not always) been used in a manner akin to scientific Black Magic? Currently there is a lot of debate in the media about unlimited and free energy and the tenor of discussion invariably veers towards the ego-driven Utopia of unlimited power, energy, therefore money, luxury and fame—for the scientists and technologists involved. Does this indicate a 'love of humanity at heart'?

So it is entirely because unscrupulously used Occult powers are so dangerous that Western science will never receive (or rather be granted), *on demand*, direct proof of the genuineness of such powers, but will have to content itself with veiled 'hints', until such a time as such secrets are more likely to become blessings than curses. It is also for the same reason that science, longing as it does for precision and concrete facts, cannot be allowed to receive even the theoretical basis of Occult instruction, other than in broad terms as Occult metaphysics, the most notable example of which in the last centenary being Theosophy. Such an injunction will hardly appeal to scientists (not all) who are driven by fame, power and money. Only by abrogating the egoistic impulse to manipulate and control Nature and substituting a conscious will to co-operate with her processes will Nature reveal her secrets *in actu*.

The present writer, as any responsible one for that matter, can therefore be excused for not touching on the actual subject of practical Occult instruction (the actual details of which he knows nothing), but concentrating rather on the necessary qualifications and conditions (from extant literature on the subject) as the basis for such instruction to be made available at the hour appointed by Destiny.

## Standpoint and Method – From the General to the Particulars

A fine statement of the method of Occult Science is that it is based on the: 'Platonic standpoint rather than the Aristotelian. Therefore a universal outlook must be sought for primarily. Therefore, the effort must be made to look down from above . . . from a cosmic standpoint . . . as though a panoramic picture were being unrolled.'<sup>43</sup> Contrast this with Newton's recommendation on the method of natural science depicted in Fig. 3.3.

Refer again to Fig. 3.2 for the essential distinction between the *modus operandi*

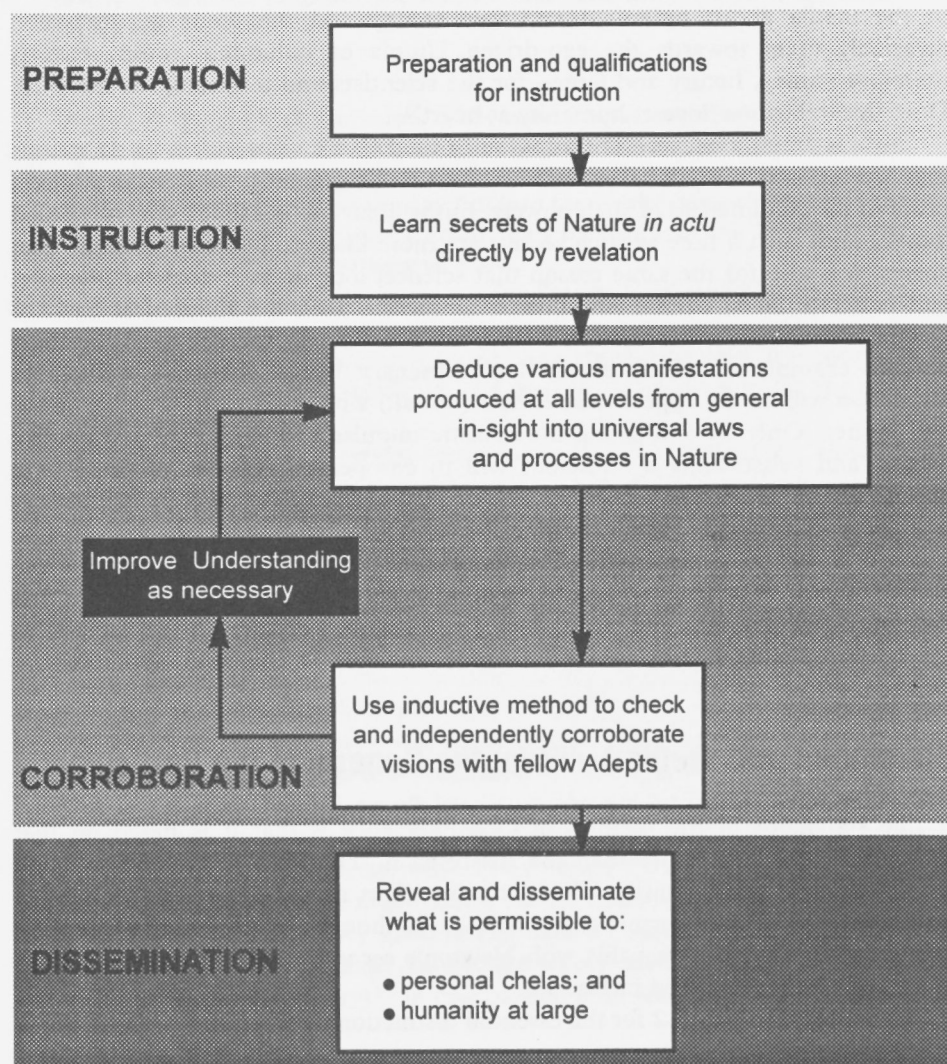
42 HPB in *Practical Occultism*. There is a subtle distinction between 'spiritual' and 'psychic', as between 'Divine' and 'spiritual'. A popular notion exists that any interest or phenomenon that is not 'material' must automatically be 'spiritual', when in fact it is most likely to be psychic.

43 Geoffrey A. Barborika, *The Divine Plan*, The Theosophical Publishing House, 1980, p. vii.



Refer again to Fig. 3.2 for the essential distinction between the *modus operandi* of Occult Science and Western science. Fig. 3.6 shows in very simplistic fashion how Occult Science works by the Platonic, deductive method for the unfolding and *stepping down* of its teachings; and the inductive method for checking the latter.

In broad outline, the overall method comprises the following four phases: *preparation* at all levels physical, mental and especially moral and ethical, so that the teachings imparted can be used without danger to the disciple himself or humanity at large;



**Fig. 3.6** A Simplistic Flow Diagram Showing the Principal Phases in the Method of Occult Science – From the General to the Particulars

*instruction* into the innermost and secret processes in Nature. This is received directly by revelation from the Adept Guru, or the Divine Self of the disciple himself;

*corroboration* to establish complete and overall consistency of doctrine in every department and at all levels of Nature;

*dissemination* (a) to personal Chelas tailoring the depth and extent of teaching to the spiritual grade of the recipient; and (b) to humanity at large in the form of parable, allegory, etc., as for example in the Bible.

The details of what is an essentially interactive and holistic process cannot however be adequately portrayed other than to point out the fundamental principle. For the primary difference between the scientific and Occult approaches is this:

**Scientific truth acquired from without is utterly different from Spiritual truth revealed from within. There is this vital difference, that whereas the scientist can only *observe* the object into which he is investigating, the mystic [and Occultist] can *participate* in the one upon which he is meditating. In the first case, there is a knowing in separation from it; in the second, a knowing in union with it.<sup>44</sup>**

In essence it means that in investigating something by the *scientific method*, we can describe its appearance, behaviour and characteristics by standing apart from it (the latest illations from quantum physics notwithstanding). But adopting the *Occult approach* in order to understand its inner nature, we have literally to become the very thing we wish to investigate—or at least to *participate* in it. This is why the Occult system always operates from *within* to without, and prefers to investigate Nature by participating with her processes, rather than interrogating her outward behaviour. This, as previously explained is also signified by the term *Sophia*—the feminine principle that nurtures and gives birth to wisdom. The ‘discovery’ of the supreme importance of participation by modern science (Wheeler) has previously been mentioned.

Goethe said: ‘Were not the eye of the nature of the sun, it could never see the sun.’ As a prosaic example, I can describe my neighbour without ever meeting him, from detached observation of his appearance, habits and behaviour; but I can *know* him (his true nature, what makes him ‘tick’, etc.) only by participating in an equal relationship with him. The importance that Occult Science places on this fact of a participatory scheme underpinned by a unified outlook will become apparent hereafter.

## Potential Weakness of Deductive Method and Necessity for Testing by Inductive Method of Experimentation

The deductive method is sensitively dependent upon the base assumptions. If the latter be unsound or distorted, then all ensuing deductions, however logical and

44 Paul Brunton, *The Notebooks of Paul Brunton*, Vol. 5, Part 2: The Intellect.

---

**It is because the writings of Blavatsky<sup>47</sup> (and a very few others) provide solidly verifiable corroboration with literally thousands of references to the religions, sciences and philosophies, the whole world over—from every culture and tradition, Eastern and Western, archaic and modern—that their teachings confidently stand head and shoulders above other ‘occult’ teachers who provide the reader with no method of discerning fact from fiction, or checking the statements made, or distinguishing truths from distortions.**

---

in the originating premises. For this reason the Occult method incorporates the highest application of the inductive method, the main aspect of which is testing by experiments to amass data in order to establish the facts. Except that such Occult experiments involve no physical laboratory apparatus, but are conducted entirely by the system of yoga (derived from the Sanskrit root *Yuj* meaning ‘to unite’). (Indeed in one of her books, HPB refers to Occultism and Raja Yoga synonymously.)<sup>45</sup> With no prejudice or preconceived objectives, exacting experiments over centuries were conducted by the Adepts to

penetrate the illusion-creating veil of the ordinary mind into the region of pure Truth. The independent visions of such seers were checked and corroborated countless times until a fully reliable, systematic and self-consistent doctrine of Truth had been achieved, subsequently to disseminate as appropriate to the times. The following passage from *The Secret Doctrine* will show how scrupulously Occult Science embodies the scientific ethos of experimental testing to verify facts:

**The system in question [i.e. Occult system] is no fancy of one or several isolated individuals; that it is an uninterrupted record, covering thousands of generations of Seers, whose respective experiences were made to test and verify the traditions . . . by checking, testing and verifying, in every department of Nature, the traditions of old, by the independent visions of great Adepts; that is to say, men who have developed and perfected their physical, mental, psychic, and spiritual organizations, to the utmost possible degree. No vision of one Adept was accepted till it was checked and confirmed by the visions—so obtained as to stand as independent evidence—of other Adepts, and by centuries of experience.**<sup>46</sup>

What has Western science to say to this finest application of the inductive method of verifying facts?

## **Technique of Investigation – Like Must be Perceived by Like**

The various, graded systems of yoga are used for transcending the ordinary mind which produces the manifold intellectual models *in abscondito*, in order to work from the level of the *modeller*. Paradoxically it means first acquiring knowledge

<sup>45</sup> H. P. Blavatsky, *Raja-Yoga or Occultism*, Theosophical Company (India) Ltd., 1931.

<sup>46</sup> *SD*-1, p. 316.

<sup>47</sup> As just one example, the copious references to the esoteric thoughts of Newton and Leibnitz in *The Secret Doctrine* can all be checked and verified from the references cited in the latter.

---

**Occult Science uses the instrumentality of Yoga to transcend the senses. Western science uses telescopes and microscopes, etc. as extensions of the physical senses. Furthermore, an Occultist is fully trained in science, although he may possess but little store of scientific information.**

---

and then surrendering it to our Higher selves; otherwise such knowledge can become a millstone around our necks. Note that surrender is not annihilation, but in the nature of an offering to the Higher Self—an *intellectual self-sacrifice to intuition*. Let us inquire more deeply into the reasons behind this technique by way of an analogy with physical sight.

Looked at in a mirror, the human eye is perceived by us as just another object like the countless objects beheld through the eyes in the external world. But *if the eye could somehow see itself* it would be one with itself and therefore realize the secrets (not optics) of its innermost nature without any need of division between eye, object of perception, and sight.

Similarly, common perception through the physical senses and the ordinary (lower) mind involves a triplicity of perceiver, object of perception (the perceived) and faculty of perception—or in philosophical parlance, Sat and its derivatives, Ananda and Chit.<sup>48</sup> But the integrated state of Reality cannot be experienced by the differentiated products of the ordinary mind—for *like can only be perceived by like*. However by transcending the mind in Yoga, consciousness is self-perceived by itself; that is, Ananda and Chit are merged into Sat, which integrated state makes it possible to be aware of and experience Reality, which is a fully integrated state. It becomes obvious that Occult Science is not limited to, and by, the illusory reports of the five (at present) physical senses.

Instrumentalists have invariably said that during a good performance when the music flows effortlessly, the feeling was like being 'one with the instrument and audience'. Modern physics has also echoed such sentiments by postulating that quantum reality cannot be understood unless the experimenter, subatomic

---

**Reality is an integrated state. Therefore it is experienced by an integrated state of self-perception of consciousness, self-illuminated by its own Light.**

---

particle(s) and experiment be considered as an integrated whole. *The deeper import of this crucial insight into the matrix of scientific thinking will alleviate more headaches for science than countless new theories or atom-smashing experiments.*

## Conditions and Rules of Occult Instruction

This is not the place to engage in actual details of the many techniques for awakening Occult powers for direct perception of the essential processes in Nature. However a few cardinal principles and facts are apposite. The following seven credentials are required before serious instruction is imparted: (a) perfect physical health (the only rule that can at times be 'bent', depending upon circumstances); (b) absolute mental and physical purity; (c) unselfishness of

<sup>48</sup> Refer to the Glossary.

purpose, universal charity and pity for all animate beings; (d) truthfulness and unswerving faith in the Law of Karma; (e) a courage undaunted in every emergency; (f) intuitive perception of one being the vehicle of the manifested Divine Atman; (g) calm indifference to, but a just appreciation of, everything constituting the objective, transitory world and its relation with, and to, the invisible regions.<sup>49</sup>

Serious Occult instruction is subsequently imparted along the broad lines shown in the following table.

The reader will note the following stark contrasts with the scientific method, qualifications and conditions for obtaining knowledge:

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. All preliminary understanding is acquired by a disciple in consort with his companions. Only for the culmination of instruction is there an independent, face to face meeting with the Adept Guru or his own higher, Divine Self where the 'key' to the secrets is imparted.</li> <li>2. Fellow-disciples are appropriately chosen by the presiding guru to maintain the balance and harmony of the whole group.</li> <li>3. Because Occult instruction can never be allowed to degenerate into an 'academy of magic',<sup>50</sup> heavy emphasis is placed upon unity and brotherhood, which in no way implies a mundane uniformity. As stated in 2. above, it is important to have differences amongst disciples, provided the former are harmonized like the various instruments of an orchestra.</li> </ol> | <p><b>Unity is not uniformity. It is a harmony of different parts interconnected and resonating AS ONE.</b></p> |
|--|---|

In view of the above the following essential message will dawn upon the reader:

*Occult instruction is not so much a question of gaining knowledge in the sense of acquiring intellectual possessions, but instead, willingly renouncing 'cerebral baggage' and conducting a life of ethic, morality and unified vision, such that the inner nature is so sensitized and purified that Divine Wisdom can both be reflected into, and the impress retained by it. (In all fairness to science however, it must also be admitted that some self-appointed gurus—those who can quote from alpha to omega, but ultimately offer the counterfeit coin of Occultism—tend to be overburdened and encumbered by their great weight of academic learning and dry bookish scholarship.)*

## Dangers of Occult Science and Reasons for Secrecy

One of the reasons for safeguarding Occult teachings has been well aired above, namely the grave implications of misuse, both to the delinquent Occultist and humanity at large. Another reason is just as terrible and concerns the well being of he who would dare to tread the Occult path.

<sup>49</sup> Summarized from H. P. Blavatsky, *Raja-Yoga or Occultism*, Theosophical Company (India) Ltd., 1931, p. 2.

<sup>50</sup> The Maha Chohan's Letter.

'Let sleeping dogs lie', or 'do not awake a sleeping snake' are well-known utterances. They warn of 'a strange law in Occultism which has been ascertained and proven by thousands of years of experience. No man or woman knows his or

**Twelve out of the seventy three "private rules" of Occult instruction<sup>51</sup>**

<i>Occult instruction</i>	<i>Purpose</i>
ENVIRONMENTAL AND PERSONAL FACTORS	
1. Choose harmonious location for instruction.	To enhance "'influence-evolving" (magnetic) objects' and ward off ' "malignant influences"' like ill-feeling, strife, etc.
5. Tuning of co-disciples by guru, 'each different, ... but in harmony with all'.	So that collectively, disciples form 'a keyboard,' their 'minds ... open for the harmonies of Wisdom . . .' <sup>52</sup>
OBSERVANCES	
10. Abstain from all flesh, alcohol and narcotics.	Prevent pollution by 'bad magnetism' and unfavourable 'psychic characteristics'.
8. Remain one with all in inner nature; but avoid external 'bodily contact' with everyone.	To 'individualise' the 'own atmosphere' of a disciple 'for Occult purposes'.
11. Perform meditation, abstinence and moral and ethical duties.	'Most efficacious ways of obtaining knowledge and preparing for the reception of higher wisdom.'
6. 'Renounce all the vanities of the life and of the world.'	That the Occult powers divulged will not be misused, through selfishness, and with dire consequences to the disciple and humanity at large.
CULTIVATIONS	
2. Acquire 'preliminary understanding' in company of fellow lay upasaka (disciples).	Preparation to receive appropriate 'due of information' 'face to face' towards end of instruction.
3. Acquire purity and peace of mind.	To establish conditions necessary for harmony amongst fellow-disciples.
9. Mind must be receptive only to 'universal truths in nature'.	To prevent "'Doctrine of the Heart"' degenerating into the "'Doctrine of the Eye"' i.e. to avoid academic theorizing or 'empty exoteric ritualism'.
4. Feel the unity and complete harmlessness amongst upasaka.	To achieve actual state of unity and attunement with fellow-disciples.
7. Feel non-comparison and non-separateness in heart.	To achieve unity, compassion and feeling of oneness.
12. Adhere to all rules strictly.	To acquire 'in good time the Siddhis of the Arhats, the growth of which makes him gradually One with the UNIVERSAL ALL'.

<sup>51</sup> This table is an adaptation from H. P. Blavatsky, *Practical Occultism*, The Theosophical Publishing Society, 1912. All quotations in the table refer to the source material. However, in order to etch the overall outline of instruction into the reader's mind, the present writer has structured the latter into three broad categories. The numbers against each instruction refer to their order as given by HPB.

<sup>52</sup> The Zarathushtrian and Buddhist scholar and sage Phiroz Mehta was at pains to point out that harmony is neither just sweet sounds, nor obviously disquieting noise, but an appropriate *balance* of both concord and discord struck together.



her moral strength until it is *tried* for 'as soon as anyone pledges himself for Chelaship,' there occurs 'the *throwing outwards* of everything latent in the nature of the man; his faults, habits, qualities or subdued desires, whether good, bad or indifferent. **THIS IS AN IMMUTABLE LAW IN OCCULTISM**, and its action is the more marked, the more earnest and sincere the desire of the candidate.'

What this means is that the varnish of civilization and so-called good breeding and conventional self-restraint will not repress the breaking out of *every* latent tendency in the candidate because his entire nature has been, so to speak, galvanized and intensified by his pledge. Every tendency means bad and good, but the former must for many aspirants include the 'sleeping passion of his animal nature' that the very act of trying for Chelaship 'arouses and lashes to desperation.'<sup>53</sup>

The fundamental reason behind all these trials is that unless a man gains full mastery over himself, and knows himself, in every department of nature, physical, emotional, mental and moral, he is unfit for *practical* Occultism without danger to himself and others, although he may peruse its more theoretical precepts in relative safety.<sup>54</sup> Whereas interest in any other subject, be it science, law or arts obviously brings attendant benefits and trials in its wake, the magnitude of the latter is trivial compared with the consequences of involvement in practical Occult matters.

Needless to say, the potential struggles and tribulations of the Chela are bound to affect his family and close circle of friends.

## OVERALL SUMMARY AND APPRAISAL OF THE CURRENT POSITION OF WESTERN SCIENCE, AND THE WAY FORWARD

**The name of the first Hall is Ignorance—Avidya.**

**The name of Hall the second is the Hall of Learning. In it thy soul will find the blossoms of life, but under every flower a serpent coiled.**

**The name of the third Hall is Wisdom, beyond which stretch the shoreless waters of Akshara, the indestructible fount of omniscience.**

*THE VOICE OF THE SILENCE*

The above sublime verses portray the journey through the three Halls that each one of us must make from the initial state of ignorance, to acquiring learning, including science, and culminating in the wisdom bestowed by Occult Science.

The last decade has seen an unprecedented acceleration in technological and bioengineering virtuosity, for example the Channel Tunnel, space exploration and precision, laser-guided bombs, genetic engineering and organ transplants. But

<sup>53</sup> This para. and the one above are taken from H. P. Blavatsky, *Raja-Yoga or Occultism*, Theosophical Company (India) Ltd., 1931, pp. 5–6 and *SD-5*, p. 417.

<sup>54</sup> Esoteric literature from both the West and the East contains myths relating the need for the novice in Occult matters to prove that he has gained full mastery over his lower nature, before any secrets can justifiably be divulged to him. The story of King Arthur extricating the Excalibur sword from a block of stone, and the Prince Rama lifting and stringing the great bow of Shiva in the Ramayana epic, are just such two examples.



whether such feats, and many others, have given an impetus to our wisdom is more doubtful. Occult Science does not tell us how to make a jet engine, but it goes infinitely further than Western science in divulging those laws that *underpin* the very edifice of physics and solving the problems of our consciousness and essential Being. The impartial critic is therefore justified in asking of what use are scientific marvels to humanity and the planet as a whole, ***unless there is an equivalent improvement in human thought and character***, without which, such marvels only become lethal toys in the hands of power-hungry politicians. Therefore only the most shallow thinkers can greet the onward advance of materialistic science with an *unqualified* nod. Such people simply confuse luxury, comfort and speed of travel (so-called progress and civilization) with inner growth and ripe maturity of society as a whole. Science has to date provided plenty of the former, but the latter is less forthcoming; utilitarian comforts hold sway over spiritual progress. Modern man is so obsessed with his machines (notwithstanding those who see no intrinsic difference between man, animal and machine<sup>55</sup>) that he seems to forget himself, thereby experiencing a spiritual crisis.

The Occultist therefore has misgivings not with Western science, but with the manner in which it is sometimes applied. We all recognize and genuinely appreciate the benefits conferred by science upon humanity, along with, let us be honest, attendant penalties, for example in the less desirable aspects of medical technology, motor cars and computers. Such penalties will always follow in the wake of scientific progress until science chooses to 'blend Physics with Metaphysics'. But until then, let Western science and its proponents stick to their legitimate boundaries, namely the field of physical investigations and technology, and not dabble in areas where 'angels fear to tread'. If scientists wish to probe the deeper aspects of BEING, they had better be equipped to do so, in terms of open-minded humility most of all. They are of course free to speculate as they wish, as long as the results are not presented as indelible facts. To date, their wildly inconsistent speculations on unravelling the 'mind of God' are practically worthless, and will only impress those gullible enough to mistake for fact, that which is repeated often enough by worldly-famous scientists and lapped up by a media-driven public opinion.

There were promising signs during the heyday of Bohr, Heisenberg and Schrödinger until the late 1970s that Western science, at least in the domain of quantum physics, had demonstrated the possibility of a permanent and unchanging substratum of consciousness as being the noumenal cause of all phenomenal events at the atomic level—a 'quantum leap' towards the esoteric doctrines. It was shown that quantum physics does not recognize an objective world *independent* of the subject who observes it—an age-old tenet of esoteric philosophy (e.g. Advaita Vedanta); that the observer, in the act of observation, influences and alters the thing observed; that we observe a property that we *want* to observe and in this sense we 'create' or bring forth that very property. It was shown how mathematical abstraction could give a false notion of exactitude and precision. The concept of interaction was fundamental to the complementarity

---

55 For example, see Richard Dawkins, *The Blind Watchmaker*, Longman, 1986, pp. 1–3.

theory of Niels Bohr. This removed the 'I versus the you' dichotomy; rather what we experience is our *interaction* (or relationship) with the world. What could be better proof of this fact than the words of Eugene Paul Wigner, a Nobel Laureate in physics, who said, 'It was not possible to formulate the laws of quantum mechanics in a fully consistent way without reference to the consciousness (of the observer) . . . (Remarkably,) the very study of the external world led to the conclusion that the *content of the consciousness is the ultimate reality*.'<sup>56</sup> [Writer's emphasis.] But these ideas, particularly the last that puts much emphasis upon the consciousness of the observer, appear not to have pervaded the 'consciousness' of the scientific community as a whole.

Quantum physics has also raised the possibility of many parallel universes physically disconnected, but real and coexisting with ours—echoes of globes in 'co-adunition but not in consubstantiality' in *The Secret Doctrine*. But apart from a few daring scientists such as Everett, De Witt, Graham and Wheeler, the scientific community has largely ignored this possibility fearful that it may open up the question of metaphysics. In fact even Wheeler, afraid of going too far down the parallel-universes road, remarked that he had to give up this view, not on the grounds of sound philosophy or truth but because 'it carries too great a load of metaphysical baggage.'<sup>57</sup> Nevertheless science of the quantum physics era has begun to realize, in the words of Paul Brunton: 'that space provides an arena for things to happen, time provides an order for events, and matter which supplies the stuff of both, are all three really experiences of the mind, inseparable from the mind and constructed out of the mind—and this Mind is NON-material'.<sup>58</sup> The writings of Einstein, Bohr, Schrödinger and Heisenberg clearly allude to this.

So these are all encouraging signs indeed for a fruitful marriage of modern Western science with perennial Occult Science. But by ignoring the *philosophical* implications of relativity and quantum physics and again dismissing the crucial role of consciousness, has science in the last quarter of this century taken a major step backwards? In the writer's opinion this seems to be the case. For one can detect a general retrograde trend towards the 1920s Viennese School of Logical Positivism which eliminates all concepts that are not concerned with physically observable entities, i.e. any concept without reference to sense-experience is rejected. There seems to be, at present, a new brand of super-insidious materialism fuelled by an explosive tri-propellant of sophisticated technology, combined with a statistical camouflage and topped by a farrago of shallowly-argued, academic logical twaddle on topics like 'God's Mind', the ape-ancestry of humanity, etc. The nineteenth-century science of HPB's time was crudely materialistic; we now have a more refined version, but in large part, materialistic

56 E. P. Wigner in E. P. Wigner (editor) *Symmetries and Reflections*, Indiana University Press, 1967, 172. The above quote has strong echoes of the title of the Theosophical textbook by E. Lester Smith (ed.), *Intelligence Came First*, Quest Books, 1990.

57 J. Wheeler, *Some Strangeness in the Proportion*, (editor) Harry Woolf, Addison-Wesley, Reading, Massachusetts, 1980, pp. 385–6. This example again shows how the quest for truth becomes subservient to the realism model of Western science (which certainly disdains any meta-physical ideas)!

58 *The Notebooks of Paul Brunton*.

all the same,<sup>59</sup> and in a sense, even more insidious, because of the glamorous technological masks.

It would appear that the truly marvellous discoveries of modern science have been used largely to fuel a crassly materialistic technology, rather than as stepping-stones towards understanding the deeper aspects of Life and thereby aiding *humanity as a whole* on the globe. The failure to distinguish appearances from Reality has resulted in scientific effort (in the main) being trapped into an ever-increasing analysis of the 'anatomy and physiology of *maya*', such that the phenomenal world is concentrated upon to the exclusion of its noumenal principle.

Einstein once remarked: 'To delight in the tension of *apparently* opposing points of view is the mark of a man who has attained to wisdom'. Esoteric students freely subscribe to the scientific viewpoint, but how many scientists will even listen to the Occult Doctrine, let alone do so with an open mind, which is all that is ever asked? So it is incumbent upon all Wisdom Seekers to build bridges toward the orthodox sciences to interface with, and gently humble, 'our greatest ally' by strong and reasoned arguments, not to ridicule science (which in any case would be absurd), but to point it towards a grander truth than the materialistic theories that circumscribe it.

But a bridge must have foundations on both banks, and Occultists heartily welcome the fine contributions that Western science can make. However, such networking is hampered when physicists such as Hawking, Davies and Sagan, and biologists such as Dawkins, Crick and Gould seem to think that, and yearn for the time when, all issues philosophical, mystical, religious, ethical and human can ultimately be unlocked through Western (materialistic) science alone. For they make the elementary philosophical blunder of confusing maps with the territory. They have allowed intellect, which is the map- or model-making faculty (i.e. mental re-presentation), to become their jailer and prison, rather than their servant and instrument. They do not appear (or want) to realize that the way of the heart can offer as much 'proof' of ultimate verities and oftentimes even more, than the way of the head. But in the writer's opinion, even such hard-headed materialists, in their heart of hearts will admit the fallacy of their arguments, which is why their responses are so vociferous when challenged. ***They realize that on the very day when mind and consciousness are granted as principles independent of the physical brain, the door will swing open for the entrance of Divine Mind and Deity—whereupon their pet theories, research grants and egoistic adornments like international status and fame would start to crumble.***

In the not-too-distant future, *thinking* men of science must realize that the puzzle-solving scientific method of constructing intellectual models painstakingly assembled like 'mental jigsaw puzzles' from individual pieces of observational evidence provides admirable descriptions of aspects of the Real; but science is

59 Again it is emphasized that these remarks pertain to the institution of orthodox science, and not to the many enlightened scientists (Capra, Bohm, Lester Smith, Ellison, Stewart, to name but a few over the last decade) who seem to have realized the shackling effects of the scientific paradigm when applied to the exclusion of all other modes of inquiry.

simply not equipped to deal with other vistas that in their *integrated totality* constitute what we call the Real. The Real is experienced when intellect is transcended for the latter can provide, at best, only approximate models as nature *in abscondito*, of the true nature *in actu*.

If Western science would ascend to the realm of Occult Science, its true parent residing in the third Hall of Wisdom, let it pay heed to this message by HPB from *The Voice of the Silence*:

**If thou would'st cross the second [*Hall of Learning*] safely, stop not the fragrance of its stupefying blossoms to inhale. If freed thou would'st be from the Karmic chains, seek not for thy Guru in those Mayavic regions.**

## Section 4    An Occultist's Apologia to a Scientist

We may end Part II with the following imaginary, but very true-to-life conversation between a Plaintiff and a Defendant—an 'archetypal sceptical scientist' (ASS for short) and an Occultist, wise and learned (OWL). Although some readers might find this amusing, it also has the serious purpose of displaying the frustrations of both, and why for an OWL the quiet appeal to silence is often the wisest way to tame an ASS.<sup>1</sup>

ASS. You Occultists talk against scientists without in any way appreciating the wonderful benefits that science has bestowed on humanity.

OWL. In all sincerity we are not objecting to scientists when they work within the context of science. *You*, not we, can make genuinely useful things such as computers and aeroplanes and can contribute to Man's material and physical wellbeing; but we on the other hand are better equipped to tell you about Divinity, the origin of the Cosmos and the evolution of Man. We do not presume to tell you how to make aeroplanes (although we could usefully guide you as to how to put them, and technology as a whole, to more humanitarian use rather than persisting in some unethical applications); but you think nothing of stepping right outside the well-defined and valid boundaries of science and attempt to pervert the course of human thought by pontificating on subjects in which you are utterly unqualified. You confuse mere technology with genuine science and truth. If we proclaimed to the world how to make lasers without knowing anything about the physical laws of optics, would you not justifiably demand that we keep silent until we knew what you were talking about?

You despise us for believing in subjects like astrology. We reply as the great Sir Isaac Newton did when Halley criticized him for believing in astrology: 'I have studied the subject, sir. You have not.' So we ask this of you: Have you *actually studied* diligently the subjects about which you irresponsibly criticize us? You would do better to despise your own invincible ignorance.

Furthermore, we welcome and are always open to new theories and discoveries in science, but are you in any way receptive to our ideas? You are quick to criticize religion, yet you have set up an alternative 'religion' of *scientism* with yourselves as gods.

That is the essence of our defence.

---

<sup>1</sup> By absolutely no means are all scientists 'archetypal sceptical', and certainly all who claim to be Occultists are not 'wise and learned'!

ASS. But you talk glibly of places populated by invisible entities. Where is your evidence for the truth of such wild fantasies?

OWL. What exactly do you mean by 'evidence'? Please explain the term.

ASS. Well, it is a well-known term; all scientists know what they mean by evidence.

OWL. All the more reason for telling us what it means.

ASS. It means proof, doesn't it?

OWL. Does it indeed. Merely substituting one word for another, sir, does not constitute an explanation. Tell us what is required for a proof. What requirements must be fulfilled for a proof to be valid?

ASS. Well, er . . . I don't know. Proof is just proof.

OWL. You don't know! Come now, how can you demand a proof when you don't know, as you have just admitted, what constitutes a proof. Is that scientific?

ASS. (*angrily*). This is just arrogance!

OWL. (*calmly*). Your irritation with me gives you away. Let me tell you what science has never bothered to examine or appreciate about proof. Proof demands three factors, namely a prover, the medium of the proof, and a recipient of the proof who is both able and willing to understand what is offered in proof. It is the last of these—the recipient—that is most often neglected, or at least conveniently ignored. To give an extreme example: if Leibnitz had attempted to explain the convergence of mathematical series to a monkey, it would have been no fault of Leibnitz (the prover) or of mathematics (the medium of proof) that the monkey (the recipient of the proof) simply could not comprehend that proof.

You say that that is hyperbole. Very well; let me take a more prosaic example. If you were to attempt to explain computer spreadsheets to a poor Indian peasant, he would hear your words, but he could form no mental picture of that which lies outside his range of experience. You could not possibly 'prove' to him that computer spreadsheets exist otherwise than by getting him to *experience* the reality of them.

So I put it to you that you must first demonstrate to us that you could understand all the proof that we could certainly supply. The arrogance is yours, not ours, for it is crass arrogance to demand proof on subjects that you are unable to comprehend. It is one thing to beat loudly for evidence and proof: it is quite another to qualify oneself for it and face with wide-open eyes and ears, not the evidence that you would like to have but the actual facts. Invariably we find that when we do provide such hard evidence you blind and deafen yourselves to it and look the other way. According to



the Institute of General Semantics,<sup>2</sup> arrogance is the 'squared brother' of ignorance; one might even say that arrogance is ignorance.

ASS. But we don't need your kind of evidence—science supplies all the proof we need.

OWL. Then why did you ask us for our proof in the first place? Seriously: if by 'proof' you mean a kaleidoscopic carnival of shifting theories and inconsistent conclusions, why should we believe what science, that strutting game-cock, loudly crows as gospel truth one day, only to deny it a few decades later? The solid traditions of physics and astronomy may indeed be traditions, but they certainly do not supply solidly consistent answers to fundamental questions.

ASS. For example?

OWL. To take just a few from literally dozens, take first the nature of the atom. The atom, once a hard 'billiard ball', first became infinitely elastic, then near-empty space, and is now merely a probability of existence. Currently your astronomers and cosmologists are passionately divided between those who believe that life must exist on other planets and those who deny the possibility absolutely. Look at the deep schism between those of you who ascribe consciousness to just brain activity and no more, and those who assert that it depends on something non-material beyond the ken of science. Finally, while some of you are fixated on the idea that the speed of light is constant, there are others who argue the case for superluminal velocities and therefore believe in backward time travel. To cap it all we have heard recently of some academics in Germany who have protested, not against the truth of superluminal travel, but that such a reality '*must not be allowed*'.<sup>3</sup>

Need I go on? Methinks that scientists are now the self-appointed guardians and censors of truth (their version of truth, that is), just as the clergy were in former times. As I said earlier, *you despise religions, but you have set yourselves up as the priests of the new religion of scientism*. Is this then what you call a scientific attitude? I do not need to tell you that science is derived from the Latin *scire*, 'to know', but I tell you that you know but little, even though you think you know everything. From where I sit, it does seem, I am afraid, that empty vessels do make the most noise.

Our proof, by contrast, is based on no mere external data and the unreliable reports of the five physical senses, but is rather the recorded experience of the 'accumulated Wisdom of the Ages', as one of our number put it, representing the 'uninterrupted record covering thousands of generations of Seers whose respective experiences were made to test and to verify the traditions . . . of the teachings of higher and exalted beings, who watched over the childhood of humanity'.

2 C. Hamlin, private communication, November 1996.

3 *Guardian*, 21 November 1996.



Our methods of instruction may vary to suit the mental atmosphere and evolutionary status of humanity, but our fundamental precepts, being based on demonstrable *facts*, are supremely self-consistent and have never varied. All this you can discover for yourself.

ASS. And how can I do that?

OWL. By the time-honoured way of making the conscious decision without any external pressure or desire for reward, to undertake the joyous but arduous self-discipline of study, by which you will learn, of meditation, by which you will assimilate and digest what you have learned, and of service, in applying selflessly what you have assimilated. By applying your learning you will know the Truth not just by accepting intellectual theory but by, so to speak, becoming the Truth by acting and living it out through service.

ASS. Your 'training' sounds very much like mysticism.

\* \* \*

At this point our wise old occultist looks his fractious interlocutor in the eye and remains purposefully silent. For it is useless, at this stage, to remind the scientist of Paul Brunton's sublime maxim:

**The truth required for immediate and provisional use may be learned from books and teachers,<sup>4</sup> but the truth of the ultimate revelation can be learned only from and within oneself by mediation,**

or of Mme Blavatsky's terse remark that:

**she will never be able to satisfy both Truth and Science.<sup>5</sup>**

Why meditation? It is obvious, *for like can only be known by like*. Because the phenomenal world is fundamentally a projective outbreathing of Consciousness/Mind, its essential nature is that of Consciousness and Mind; therefore it can only be known through Consciousness and Mind—not its physical counterparts. Telescopes and microscopes or other external apparatus can show how physical matter *behaves*; mathematics can indicate *relationships*; but the 'ultimate revelation' can only be approached through the realms of Mind, which most certainly does NOT mean the limited human intellect which must be penetrated and entirely transcended for any real progress to be made.

Western science wastes a lot of its own precious time, money and energy in intellectual warfare against its own misconceptions and prejudices against Occult Science. So let us now turn to a few facts of the 'ultimate revelation' that are germane to our inquiry into the fundamental distinction between Nature *in abscondito* for Western science and Nature *in actu* for Occult Science.

---

4 As indeed also from external physical apparatus such as telescopes and microscopes along with the formidable arsenal of intellectual apparatus.

5 *SD-2*, p. 200. This is because of the impossibility of revealing in public the Archaic STANZAS in their entirety.

# PART III

## OCCULT SCIENCE

### **In this Part:**

- ❖ An overview appreciation of what is meant by terms such as God, Deity, Divinity, and how manifestation arises
- ❖ Occult fundamentals
- ❖ The relationship between the unmanifest and the manifest: how it is that duality and diversity can arise from a state of essential unity. Cinematic analogy to illustrate the Occult doctrine
- ❖ Primal duality responsible for manifestation and how they interact
- ❖ The role of Sound, the Point, Space and Time as the mechanism for manifestation
- ❖ The derivation, nature and duality of Space and Time
- ❖ The derivation, nature and duality of Energy and Matter
- ❖ The fabric and form of the Cosmos
- ❖ Discontinuities in Nature plus cinematic example to illustrate the Occult doctrine
- ❖ The role of Sound and Light in the overall process of manifestation
- ❖ How the Cosmos unfolds from the unmanifest to the manifest
- ❖ How Occult Science resolves the conundrums in Western science on subjects like the origin of the Universe, conservation of energy and infinite energy, the ultimate building block of matter, the nature of consciousness, vacuum energy, the basis of the quantum, the particle and wave characteristics of entities, the connection between sound and light, and uncertainty. Also the question of UFOs and aliens, dowsing, and the overall means of acquiring Occult powers, with an example of acoustic levitation
- ❖ Promising scientific corroboration of the Occult doctrine
- ❖ Predictions and speculations about the future course and outcome of scientific effort in the twenty first century
- ❖ An ultimate 'formula' and plea from Occult Science to Western science

# Section 5 The Nature, Structure and Dynamics of Divinity – A Practical Overview Appreciation

Existence is ONE THING.

H. P. BLAVATSKY<sup>1</sup>

Our title is in no way meant to sound presumptuous. No description of Divinity could possibly be adequate, or do justice to a sublime topic that is in truth, ineffable. The reader is invited therefore, to apply strenuous efforts in meditating profoundly for himself. Like the proverbial finger pointing at the moon, what follows may be of some assistance in climbing a fraction higher on the staircase to Truth, depicted in Fig. 3.1 of Part II.

It is an absolutely fundamental tenet of the Esoteric Philosophy and Occult Science that all existence is ONE THING. But this 'One Thing' is known, or rather, described, by a whole variety of roughly synonymous terms, a small selection of which is given below.

The ONE REALITY is variously termed, for example by:

Vedantins		Parabrahman*
Occultists		the Absolute*
Religious people	as	'God', the Divine
Physicists		the Unmanifest State
Mathematicians		the fully Integrated State
Philosophers		the Real, the All, Deity, Mind

\* in addition to numerous Sanskrit terms, but there is no need at present to delve into etymological matters.

Accordingly then, this section has a clear-cut, twofold objective:

1. An 'esoteric sweetener', serving as a prelude, overall framework and gradual build-up towards the Occult doctrines presented in subsequent sections. It is especially suitable for those scientists interested in, but perhaps unfamiliar with esotericism, to gain some intuition in simple terms, of the meaning behind words such as 'Divinity', 'God', etc.—the abundance of interpretations and misconceptions associated with which present the greatest

<sup>1</sup> From the compilation of Mme Blavatsky's last instructions to students known as the Bowen Notes, 8.

hurdle, according to the writer, in the way of an understanding and appreciation by Western science of Occult Science.

2. To assist Theosophists, by way of a practical example, in initiating dialogue between Occult Science and Western science by presenting the content of the former through the medium and idiom of the latter, and in plain language with a minimum of esoteric jargon. To this end, this section consolidates and progresses the 'bridge to Occult Science' mentioned in Part II, Section 3.

Notwithstanding the above, this section may seem superfluous or tediously familiar to seasoned Theosophists. However, it was stressed in the Preface and the Introduction to Part I that in order to forge a durable bond between Occult Science and Western science, our approach must be eminently pragmatic; it is useless to preach only to the converted—for that is not the way to 'let it be known that such a thing as Theosophy exists'. Therefore we must re-iterate the need for a practical method of introducing the esoteric doctrines, which must obviously commence by removing the greatest obstacle that blocks its acceptance by orthodox science and exoteric religion, namely their notion of 'God' as an external, anthropomorphic and personal Creator, who created the Universe at the Big Bang, or Day of Creation, and then, according to the theorizing fancy of the individual scientist or religionist, either interferes with His creation, or abrogates His responsibilities. There is no hope of building the edifice of Truth upon such a false foundation. (Of course some scientists do not subscribe to the notion of such a 'God', placing the whole burden of creation upon mechanical laws of nature, and evolution upon natural selection.)

## WHAT THEN IS 'GOD'?

The Table above referred to what is commonly termed 'God' under a variety of names according to the culture, religious climate, mental atmosphere and individual temperament prevailing during any epoch. For our purposes however, the Unmanifest State and the Integrated State are terms familiar to physicists and mathematicians, *so best suited to the scientific flavour of this exposition*.<sup>2</sup> We shall therefore use the phrase '**UNITED State**', as an acronym for the Unmanifested-Integrated State, and also to underline the primary message of the essential Unity of all existence—as implied by the term UNITED, which also happens to be the meaning of the Sanskrit term *yoga*.

---

<sup>2</sup> The allusion to the calculus by use of the terms 'integrated' and later on, 'differentiated', is not meant in the strict mathematical sense, but in order to use terms and overall concepts familiar to scientists.

## ESSENTIAL 'QUALITY' OF THE UNMANIFESTED-INTEGRATED STATE

KEYWORDS: Deity, Divine, Unmanifest, Manifest, Integrated, Differentiated, Supreme Consciousness, Potentiality, Expression, Subsumption

The UNITED State is one of limitless potentiality, which includes, within itself, the potential for numberless expressions in infinite, differentiated states of Itself—such differentiated ex-pressions being the various *manifestations* of the UNITED State. The subject can conveniently be divided into two parts for further consideration:

1. The UNITED State in itself; and
2. The ex-pression of this UNITED State (ex-press meaning 'to press out of').

### The Unmanifested-Integrated State in Itself

Insight is best gained through two related phrases: (a) 'changeless state' and (b) 'state without particulars or attributes, but containing all particulars and attributes in potential form,' (*aparīṇamita* and *nirveshesha*, respectively, in Sanskrit).

*The Changeless State* – What is completely whole and integrated (or undifferentiated) must be changeless, for only differentiated states can be distinguished as one particular state from another. So the changeless state obviously transcends ordinary notions of space and time. For space is discerned by observing different spatial relationships between various objects that occupy different locations. If no spatial comparisons can be made, there is no sense of space, as a traveller in a desert experiences when faced with vast and uniform tracts of sand with no distinguishing features. Similarly, time is perceived by discerning the changes in parts ('parts' referring not only to objects, but also to moods and mental states). If nothing changes, there is no sense of time, as a person experiences when faced with utter boredom, or intense joy, when time on both such occasions seems to stand still.<sup>3</sup>

*The State Without Particulars, But Containing All Particulars in Potential Form* – The UNITED State is changeless, hence it must necessarily also be without any discrete particulars. But note that it also contains all particulars in potential form, which does not mean that all these particulars reside within the UNITED State like an assortment of chocolates inside an enclosing box, but rather that they are *subsumed* within it.

The changeless quality of the UNITED State, and its subsumption of all

<sup>3</sup> Incidentally, this functional relationship between change and time also provides a clue as to why people generally feel an accelerated sense of time as they grow older, when years seem to flash by 'in the twinkling of an eye' (more later).

differentiated particulars, are such important points to grasp that they will be illustrated using three analogies (which, like all analogies, lose their meaning when taken literally or driven out of context).

## ANALOGIES TO ILLUSTRATE MEANING OF UNITED STATE

### Everyday Human Life

A human being in general performs a wide variety of roles and displays a virtually infinite number of moods. Depending upon the circumstances, he can adopt the role of parent, spouse, worker and boss for example, and his moods can vary widely with nuances ranging from say, despondency to optimism. Yet when he is asleep or serenely quiet, none of these characteristics show overtly. It is not that they exist in discrete form stuffed within his being, but that they are fully subsumed into his consciousness as an integrated and changeless state, to manifest as particular forms of changing activity, when appropriate.<sup>4</sup>

### The Ocean

The immense ocean (analogous to the UNITED State) manifests an almost infinite number and variety of waves (differentiated-manifested states of the ocean), each one of which could be characterized by a precise mathematical relation. But these turbulent waves are not contained separately within the ocean, but fully subsumed within its still and changeless depths, arising out of the latter as circumstances dictate their uprising (birth), life span (period of manifestation) and dissolution (death). It would be inaccurate to declare that the ocean *created* the waves; but rather that the latter represent a differentiated state of the vast 'wave-manifesting' potential of the former. But although each discrete wave can be recognized as such, precisely where it begins and where it ends is indeterminate. Furthermore, the waves are not separated from the ocean, but are one with it, the whole 'consciousness' of the ocean being potentially 'reflected' in each part of itself, i.e. each wave. The waves are in the visible foreground, the ocean is always in the invisible background. It would be philosophically absurd to think that having 'created' the waves the ocean then plays no part in their further existence. Thus the current debate in scientific circles as to the extent to which 'God' interferes with His creations is based upon a false premise and an equally erroneous concept about 'God'. For example, Carl Sagan states that the conclusion of present cosmological effort into understanding the 'mind of God' is that there is 'nothing for a Creator to do'.<sup>5</sup>

A final point often neglected is that we cannot identify or 'see' the ocean-in-itself acting to manifest its own waves. We are only aware of the *results* of such action. This is because the waves arise out of the integrated ocean acting *as a whole*, and so we cannot isolate out which 'portion' of the ocean is responsible for a certain class of waves. This point again has an important bearing on the vexed

<sup>4</sup> This example incidentally, shows the benefit of a balanced and integrated personality, so that any unexpected or extraordinary demands made upon a person—a common experience of Seekers on the Path—are adequately faced without any sense of inner dislocation and fragmentation leading to neurotic behaviour or psychosis.

<sup>5</sup> Carl Sagan, Introduction to Stephen W. Hawking, *A Brief History of Time*, Bantam Press, 1988, p. x.



question that seems to plague Western science and orthodox religion about the need for a personal God who creates His world (religious viewpoint); or the inability to recognize such a Creator (scientific viewpoint in some circles).

### Geometry

Consider a line, a plane and a solid. The line comprises an infinity of infinitely small, mathematical points. The points are subsumed within the line; the line is not an additive collection of points arranged in a row. Likewise, a plane is the subsumption of an infinite number of lines adjacent to one another. Finally, the solid is the subsumption of infinite adjacent planes. So the line 'differentiates out' the point, the plane the line, and the solid the plane (the term 'differentiate' being used here in the metaphorical and not the strict calculus sense). The line, plane and solid therefore represent relative integrated states, into which are subsumed their corresponding differentiated states. (Incidentally, the mathematical point, one-dimensional line and two-dimensional plane all cannot be seen, for they are purely mental constructs; only the solid can be physically seen. That science deals with such mental constructs is both bitter medicine for those who spurn the Occult dictum of a non-physical basis for our world, as well as a pointer towards the fundamentally mental nature of our Universe, as will be elucidated later.)

## The Ex-expression of this Unmanifested-Integrated State

The changeless state without particulars is anything but a static state, or one of nihilism, because it contains within itself the potential for ex-expression in ever differentiated and increasingly lower states of itself, otherwise known as manifestation. In the second analogy above, this limitless potential for differentiation was the wave-making ability of the whole, integrated ocean, the latter quite unaffected by the numberless manifestations of its waves.

Intuition discloses that *ceaseless Motion* is the ultimate basis of all manifested-differentiated states (how, for example, could waves be formed without any movement of water)? We now inquire into the fundamental principles that bring about manifestation.

### FROM THE UNMANIFEST TO THE MANIFEST

The UNITED State and the Divine are equivalent terms, the former specifically chosen for the reasons mentioned earlier. Careful pondering over the UNITED State-in-Itself, and the Ex-expression of such State will show that there is always a dual, polar principle in operation—*system* and *function*, viz:

1. Divine *system*: what the Divine IS, i.e. Divine Consciousness *in potentia*. This is the positive pole, corresponding to which there is, *pari passu*
2. Divine *function*: what the Divine DOES, i.e. Divine Power—that which enables such Consciousness to be actualized and exercised as limitless SELF-ex-expression. This is the negative pole. (The term 'Power' is not used in the strict scientific sense.)

*System* and *function* are inextricably bound—a system can only function, i.e. DO something, by virtue of what it IS. For example, the ocean can only manifest waves—what it DOES—because of its inherently restless, ‘wave-making’ nature. Deny the ocean its turbulent nature and it will become forever an immense static, stagnant pond. Put rather differently in somewhat exotic parlance, a Spiritual Pregnancy (state of potential and latency) is necessary to give birth to manifested Universes (outcome of that potential), which, just like human birth, is governed strictly by rhythms, cycles, periodicity and labour!

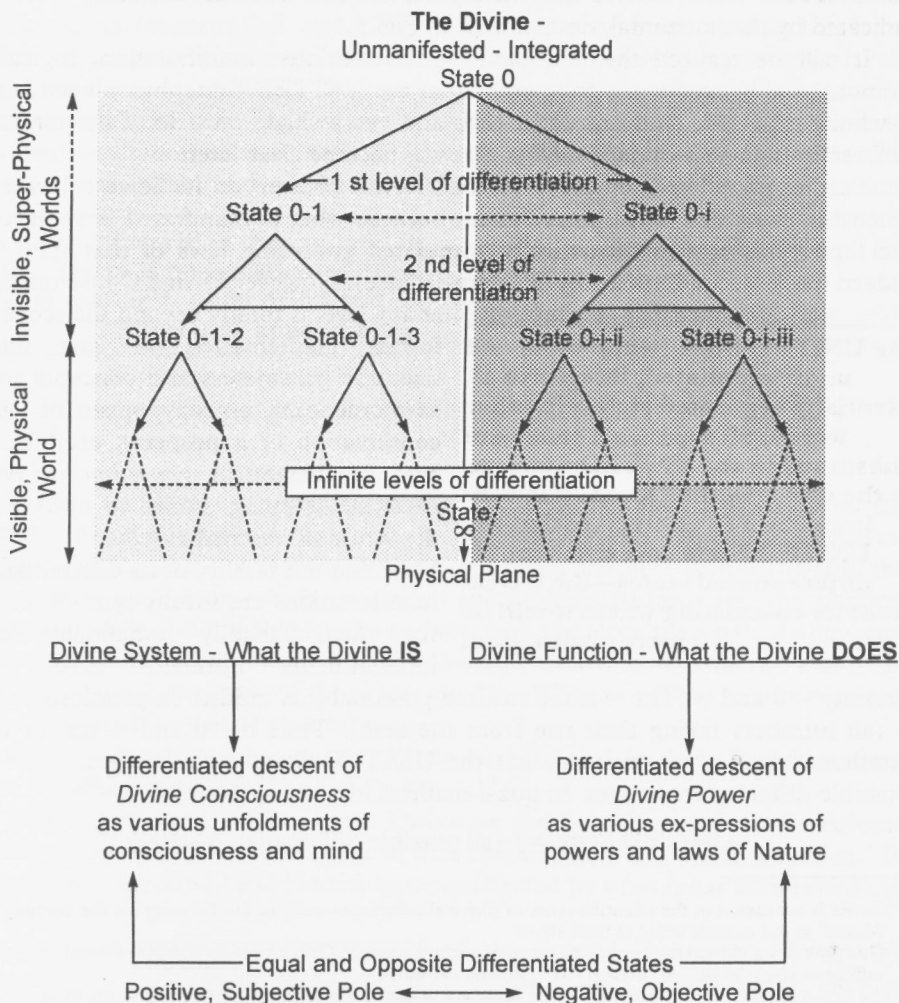
All this is clarified in Fig. 5.1 overleaf which shows how increasing differentiation of the UNITED State results in infinite subdivisions or manifestations of *Itself*. The primary, or first level of differentiation results in two principal branches of equal and opposite polarity, corresponding to the *system* aspect, State 0-1, and *functional* aspect, State 0-i, respectively, of State 0. Further differentiation into innumerable branchlets follows, with equal, overall polarity between the two streams of descent always being maintained. But any manifested-differentiated state can never be regarded as a fully discrete entity, with neatly demarcated boundaries and therefore isolatable from the whole, of which it forms a part. In our example from nature, each ocean wave (differentiated state) has a clearly recognizable ‘core’, but its boundaries are blurred, for *precisely* where does each wave begin and where does it end, other than in the depths of the ocean as a whole? In terms of another physical analogy, any coloured light represents a particular manifested-differentiated state of white light, which is an integrated state of light and invisible in its pure form. Whilst we may quite arbitrarily *define* any colour as corresponding to an exact frequency, or range of frequencies, in practice however, where does, say, red begin and end? There is a ‘central red’ colour, but this ‘flows’ imperceptibly into the orange colour towards the higher end of the frequency spectrum, and into infrared at the lower end of the spectrum (and infrared is only ‘infra-’ to our human physical sight). So there is always an uncertainty built into the certainty of physical phenomena—a seminal fact that will be elaborated later.<sup>6</sup>

The relativity of all integrated states that are at any level below the Supreme Unmanifested-Integrated State (State 0) is readily seen in Fig. 5.1. State 0-1 is an integrated state with respect to States 0-1-2, 0-1-3 and all States below; but State 0-1 is a differentiated state with respect to State 0. Similarly, State 0-i is an integrated state with respect to States 0-i-ii, 0-i-iii and all States below; but State 0-i is a differentiated state with respect to State 0. And it will swiftly be appreciated that these super-physical relative states cannot possibly be mathematicized (in the way that relativity on the physical plane was by Einstein) but that they contain the basis of such mathematical expression.

Fig. 5.1 also shows the subjective and objective aspects of the UNITED State, namely:

<sup>6</sup> Without overstretching the point, did not William Shakespeare allude to this principle in the Merchant of Venice? Recall the famous ‘pound of flesh’ that had to be an *exact* pound, not a fraction more, or less, for Shylock to gain his revenge. The pound (or any other scientific measure such as length, etc.) can be conceptually defined as we please, but in practice an *exact* measure can never be obtained without attendant uncertainty from the precisely (and conceptually) defined quantity.

- on the left side of the diagram is shown the differentiated descent of *Divine Consciousness* as the various expressions of consciousness and mind; and
- on the right side is shown the differentiated descent of *Divine Power* as the expressions of the various powers and laws in nature, which Western science recognizes on the physical plane.



*Like the Ashvattha, or Tree of Life hanging downwards from the Divine, all life is inter-related and rooted in the fundamental doctrine of the ONE Reality*

**Fig. 5.1** The Differentiation of the Unmanifested-Integrated State into Infinite, Polar Manifestations of itself

Thus at any level, the *objective* aspect (as Matter<sup>7</sup>) of the UNITED State provides for the ex-pression of the *subjective* aspect (as Spirit, or Consciousness) of this State. In other words, every differentiation of Divine Consciousness has its corresponding differentiation of Divine Power as its appropriated vehicle, or channel that enables such Consciousness to be realized, or function to be exercised.<sup>8</sup> *The vehicle is not independent or separated from Consciousness, but an aspect of it.* Hence the two streams of descent are not independent tributaries from the UNITED State, but co-exist in a polar relation at each and every level, as indicated by the horizontal, dashed lines in Fig. 5.1.

It will be realized that any state of differentiated manifestation, logically, cannot possibly express the full potential of the UNITED State; but yet the latter is wholly reflected, or mirrored in each and every single particle of its minutest differentiations—a seeming paradox that will become clear later on.

Furthermore, we can perceive that Divine Power at its lowest levels is amenable to mathematical formulation, because what is manifested is subject to the limitations and mathematically-formulated governing laws of that state (as indeed has been undertaken by Western science). However Divine Consciousness

---

**The UNITED State being whole and undifferentiated, integrates all potentially separated states; in other words, all separated states are subsumed in the UNITED State, as are the waves in the Ocean. It is very important to appreciate that the UNITED State co-exists with its differentiated states—the Ocean without its co-existing waves would be a mere abstraction.**

---

at any level is totally beyond the scope of formal mathematics, or any other scientific parameters and concepts such as momentum, entropy, speed of light, conservation of a property, etc.<sup>9</sup> However, mathematical *symbolism* provides excellent stepping stones to awakening the intuition. Accordingly, the UNITED State and the totality of its differentiated manifestations are ideally symbolized by the mathematically undefinable and indeterminate numbers 'zero' and

'infinity'—0 and  $\infty$ . The  $\infty$  is the realized potential (i.e. infinite ex-pression) of the 0 (all numbers taking their rise from the zero). Thus the 0 and  $\infty$  mirror one another.<sup>10</sup> Indeed we may say that the UNITED State is the integration of all possible differentiated states. In quasi-mathematical notation:

$$\text{UNITED State} = \int (\text{all possible differentiated states}).^{11}$$

7 Matter is *not* meant in the scientific sense of physical substance—refer to the Glossary for the definition of 'Matter' in the esoteric sense as used above.

8 This provides a clue to the factual existence of supernormal, or Occult powers (siddhis) so embarrassingly baffling to the scientist—so normal to the trained Occultist.

9 The physical effects of consciousness in the brain are of course amenable to scientific scrutiny, as detailed in Section 2. Consciousness *per se* is, however, completely beyond the scope of physical science.

10 For substantial insights into the mathematical and philosophical implications of infinities refer to the works of Leibnitz and Newton. For example: (1) J. E. Hofmann, *Leibnitz in Paris (1672-1676)*, Cambridge, 1974; (2) *The Mathematical Papers of Isaac Newton, Volume III*, edited by D. T. Whiteside, Cambridge University Press, 1969. This is a massive, mathematical tome of 388 pages; (3) *Four Letters from Newton to Richard Bentley containing some arguments in Proof of a Deity*, reproduced in *Newton*, selected and edited by I. B. Cohen and R. S. Westfall, Norton & Company, 1995. These letters show how that supreme mathematician, Occultist and philosopher was able to convey such profound concepts to non-technical people in simple, non-mathematical language.

11 The integral sign,  $\int$ , is obviously not meant in the strict calculus sense, but rather in its symbolic meaning of a true *integration* or *synthesis* which is not a mere addition, mixture or combination. This integral sign has lost its original, symbolic, multi-level meaning and has become an icon with fixed concepts attached to it.

So although the UNITED State in itself is above the laws of mathematics, it provides the basis for all differentiated states in manifestation, as well as their regulation, mutual interaction and cross-correlation according to the laws of mathematics.

Hence the proliferation of innumerable, seemingly disconnected and unrelated states that appear in the physical world are, upon deeper examination, perceived as being rooted, and subsumed in the UNITED State (State 0). Moreover, because all manifestation is ultimately derived from the Supreme Divine Consciousness (see again Fig. 5.1), the former is apprehended as being essentially a series of mental phenomena in constant interplay at different levels, corresponding to different degrees of differentiation. The physical world, characterized in its large-scale behaviour by precise and determinate, mathematically-formulated natural laws, is subsumed in Consciousness and mind, which is free and non-quantifiable. The outcome therefore is the famous

---

**The physical world is thus mental in essence. There is no question of mind OVER matter<sup>12</sup>— just Mind and its effects, or appearances.**

---

uncertainty, or indeterminism in physical nature (at all levels, but accentuated at the atomic scale) discovered by Heisenberg in the early part of this century.

\* \* \*

The above considerations supply us with a clue to how and why nature on the physical plane appears *in abscondito*, but approaches ever closer to Nature-in-herself, *in actu*, the further we advance on higher, invisible planes towards the integrated source from which springs all such differentiations. For the physical plane, so visible and tangible for the scientist is to the Occultist a pale shadow and reflection of the invisible worlds that lie closer to the realm of truth and reality. In Part I, Section 2, we stressed the urgent need for Western science to strain its eyes to look beyond the veil of physical matter.

Our disclosures so far are exquisitely encapsulated in these two quotations from the Bhagavad-Gita (The Lord's Song):<sup>13</sup>

In the final verse of the Tenth Discourse the Lord Krishna says to Arjuna: 'Having pervaded this whole universe with one fragment of Myself, I remain.' In other words, the UNITED State is quite unaffected by what it has manifested out of Itself.

Also Krishna declares in verse 28 of the Second Discourse: 'Beings are unmanifest in their origin, manifest in their midmost state . . . unmanifest likewise are they in dissolution.' In other words, that which is manifested and yet to be manifested all take their rise in the UNITED State.

But all such quotations are 'a Chaos to the sense, a Kosmos to the reason,'<sup>14</sup>

---

12 Here the word matter is used in the conventional scientific sense of that substance of which physical bodies are composed and which endows the latter with their tangible realism.

13 Translation by Annie Besant, The Theosophical Publishing House, 1973.

14 *SD-1*, p. 70. A phrase used by HPB in a similar context, which emphasizes the need to understand the above, and similar, profound quotations, not by a literal, surface rendering, but by reading between the lines and probing behind the words to unlock their hidden meaning.

i.e. gibberish and confusion to the ordinary brain intellect dominated by the senses, but supremely intelligible to intuition, which the reader is urged to apply.

\* \* \*

## Epilogue

One frequently hears in scientific circles, when the conversation turns to the origin of the Universe, statements such as 'if God created the Universe, then who created God'; plus further remarks about scientists now attempting to know the 'mind of God'. The exposition so far has been at pains to point out the fallacy of

### Three Commandments Especially for Orthodox Scientists and Religionists

*No. 1* There never was a personal God who created the Universe at one moment in time (i.e. the origin of time). Instead think in terms of a principle of limitless potential with a never-ending capacity for infinite *self-expression*. Nothing is, or ever was 'created'—and nobody created 'God'.

*No. 2* The Universe is not separated from 'God', or Deity. It is the organic, or bodily ex-pression of the Deity Itself.

*No. 3* There is no 'God' acting as a Divine Judge to reward or punish us for our actions according to His fancy. What appears to us as reward and retribution is the harmonizing principle in Nature.

such remarks, by way of reasoned arguments to explain that no 'God' ever created the Universe, and then, either completely repudiated His responsibilities, or had limits placed upon His involvement as, for example, Sagan and Hawking<sup>15</sup> seem to think. The cardinal error springs from the opinion that 'God'<sup>16</sup> is a personal, anthropomorphic creature who creates, and then stands outside His creation, which then leads to the logical, but asinine question of whether He can influence, or play dice with the Universe, His creation. The esoteric account corroborated by generations of Seers across aeons of time is the only sane, sensible, logical,

demonstrable and self-consistent doctrine. The key lies in understanding the recurrent appearances of manifested-differentiated states to be the various projections, or ex-pressions of the Unmanifested-Integrated State in which all manifested states are *subsumed*. The wholeness and implicate order<sup>17</sup> unfolds from within itself to produce the outward explicate states. Nothing is ever 'created'; everything is manifested by unfolding or unrolling from within without; the manifested-differentiated (objective) worlds e-merging<sup>18</sup> periodically and

<sup>15</sup> Hawking, *op. cit.*

<sup>16</sup> A false premise leads to a logical, but false corollary, namely that if 'God' created the world, then *who* created 'God', and then who created the Creator of 'God', etc., *ad nauseam*. Remarkably, this conundrum displays faint echoes of the impasse reached in the standard Copenhagen Interpretation of quantum physics where the conscious observer is responsible for collapsing the wave functions of quantum entities from probabilities to actualities of existence; in which case one asks, who observes the observer, and so on to an infinite regress. Quantum physics has postulated all kinds of conceptual artifices to get around this problem of conscious observation, as summarized in Section 2 of Part I.

<sup>17</sup> The term 'implicate order' borrowed from the title of the book *Wholeness and the Implicate Order* by David Bohm, as great a quantum physicist as he was deeply philosophical and spiritual—a fine example of how science and spirituality can be harmonized.

<sup>18</sup> Emerge from the Latin as *e-* and *mergere*, meaning 'to dip out of'.



cyclically from the Unmanifested-Integrated (subjective) State. So there is no question of a 'God' playing ludo moving universes and men around a celestial board according to the throw of a dice (for if He did, He would have to be playing with Himself, the Universe being the outward expression—the substance, fabric and clothing, so to speak, of His Being). The Divine handiwork never had a birth in time and will never end, for it constantly **IS**, manifesting as the production, preservation and dissolution (so-called destruction) of worlds. It is amazing how many ludicrous (or ludo-based) statements have been, and still are, prolifically

---

**The popular and false notion of an extra-Cosmic 'God' must be replaced by an intra-Cosmic Deity.**

---

spawned out of this central erroneous assumption of a finite, external God creating a Universe in the same way as an individual carpenter fashions a specific chair.

Finally harking back to the analogy of the ocean, it was reasoned that just because the ocean, as a whole, cannot be discerned with the eye does not mean that it is not involved in producing waves. Similarly, the immensity of manifestation *appears* to proceed automatically without any need or tangible evidence of Deity. But this is because such manifestations spring from the Deity, (what we have called the UNITED State) *as a whole* and not from an external, and therefore isolatable and identifiable, 'God'. So Western science in general, and popular religion in its entirety are on opposite sides of the counterfeit coin of Truth. For in declaring 'there is no God', scientific atheism should be saying 'there is no identifiable, personal, finite God.' By contrast, religious dogmatism has brain-invented 'a personal God who created the Universe' instead of realizing that 'there is a Deity (rather, a Deific, or Divine Principle), impersonal and absolute, behind the Universe drawn from Its own essence.'

\* \* \*

The esoteric path is the (only) genuine path to truth. Let us therefore close this part with the *same* truth expressed in unequivocal terms from Western science; Occult Science and Spiritual Philosophy.

*From Western science:* this passage from the General Scholium of undoubtedly the greatest scientific work ever to be written—the *Principia*, shows Newton's insights into God as non-anthropomorphic and non-personal; His all-potential, transcendence and immanence, His unaffectedness by His manifestations and the futility of conceptualizing Him with the mind –

**The Supreme God is a Being eternal, infinite, absolutely perfect . . . And from his true dominion it follows that the true God is a living, intelligent, and powerful Being . . . He is eternal and infinite, omnipotent and omniscient; that is, his duration reaches from eternity to eternity; his presence from infinity to infinity . . . He is not eternity and infinity, but eternal and infinite; he is not duration or space, but endures and is always present. He endures forever, and is everywhere present; and by existing always and**



everywhere, he constitutes duration and space. In him are all things contained and moved; yet neither affects the other: God suffers nothing from the motion of bodies . . . He is utterly void of all body and bodily figure, and can therefore neither be seen, nor heard, nor touched; nor ought he to be worshipped under the representation of any corporeal thing.<sup>19</sup>

*From Occult Science:* the following passages culled from one of the finest expositions on the esoteric doctrine—*The Key to Theosophy*, present similar facts and forcefully show that what is called ‘God’ is nothing other than the UNITED State, which is also synonymous for our present purposes, with Deity, Divine Consciousness, or Absolute Thought itself. In the authoritative words of one of the greatest Occultists and Seers, H. P. Blavatsky –

Our DEITY is neither in a paradise, nor in a particular tree, building, or mountain: it is everywhere, in every atom of the visible as of the invisible Cosmos, in, over, and around every invisible atom and divisible molecule; for IT is the mysterious power of evolution and involution, the omnipresent, omnipotent, and even omniscient creative potentiality. . . . it is *Absolute Thought* itself.<sup>20</sup> In short, our Deity is the eternal, incessantly *evolving*, not *creating*, builder of the universe; that *universe itself unfolding* out of its own essence, not being *made*.

Since we believe in no *personal* God, how can we believe that he endows man with anything? We believe in no *creation*, but in the periodical and consecutive appearances of the universe from the subjective on to the objective plane of being, at regular intervals of time, covering periods of immense duration.

*From Spiritual philosophy:* as expressed tersely by the sublime philosopher and sage of the twentieth century, Paul Brunton –

The atheist says, “God is nowhere!” The mystic says, “God is now here!” The philosopher says, “God is!”<sup>21</sup>

\* \* \*

19 Perusing the above fragment one can appreciate HPB’s remark about how ‘the innermost thoughts and ideas of Newton . . . one of the most spiritually-minded and religious men of his day . . . were perverted, and of his great mathematical learning only the mere physical husk was turned to account’—a statement even truer for contemporary science than in HPB’s time over one hundred years ago (*SD-2*, pp. 207, 215).

20 A fact repeatedly stressed by Paul Brunton as well.

21 *The Notebooks of Paul Brunton*, Volume 16, Part 3: World-Mind, What is God? para. 52.

---

**For all intents and purposes for the remainder of this section, Deity, Reality and the Divine are all equivalent to the UNITED State.**

---

It is hoped that having sketched a truer outline of the meaning of Deity, Divinity, etc., by stripping away some popular misconceptions and prejudices attaching to it, we can now proceed with

the remainder of this section with the implications of our discovery (the unsatisfactory term 'God' will henceforth be discarded). Our presentation will continue to be simple and couched in scientific terms. The objective is to adumbrate the Occult principles to be described in subsequent sections.

## WHAT THEN IS THE RELATION OF DEITY TO THE COSMOS?

KEYWORDS: Deity, Divine Mind, Cosmos, limitation, change of state

Our deliberations so far have attested to the Deity as being Divine Consciousness which (a) pervades and permeates the manifested system (Cosmos) which He has emanated from His own essence, while He Himself remains unaffected by His manifestations; who also (b) guides and controls His system from within; and who (c) expresses Himself partly as what are called the 'Laws of Nature' operating with mathematical precision, which Western science studies and manipulates to perfection.

It may be helpful to express the above through a mathematical metaphor for the benefit of scientists. To this end, Deity is *like* a Divine differential equation describing in a fully general and complete manner, any particular class of natural phenomena, and having any number of solutions (manifestations) depending upon the initial conditions, and the limiting, or boundary conditions prevailing at the time.<sup>22</sup> This will actually be demonstrated later.

## And How Does the Deity Manifest the Universe?

In simple terms by a movement from *within*, without; symbolically, from the centre to the circumference; the Reality, or implicate order becoming the explicate manifestation as a result of self-limitation. Manifested Universes are therefore (from the ultimate standpoint) illusory shadow-worlds resulting from the periodic (a) Self-projection, or ex-pression; with ensuing (b) increasing differentiation and discontinuity; and (c) reflection of this implicate Reality in progressively lower, increasingly separated and explicate states of *Itself*. There is only a change of *state*, not a change from one *thing* to another thing, just as ice, water and steam are all different phase states of the same H<sub>2</sub>O. Manifestation at any level always involves a *limitation*, that is, a *bounding field in which to manifest*. This vital principle will be further explained and demonstrated later.

<sup>22</sup> For example the Navier-Stokes equations (analogous to the Deity in the above example) describe any fluid phenomenon in the most general way. They are unsolvable unless limited by boundary and initial conditions to yield a particular solution (presiding Ruler of manifested Cosmos). Numberless solutions (manifestations) of the equations in no way detract from the latter themselves.

## But What Is Our Relationship to the Deity

The Sanskrit Shlokas state this beautifully as the ‘creative source of the Divine Mind, Hidden in a veil of thick darkness, formed mirrors of the atoms of the world, and cast reflection from his own face on every atom.’<sup>23</sup> What is the philosophical basis of such an assertion? It is that there is only ONE BEING and we are projected manifestations of IT, hence the totality must be mirrored in every one of its parts; in other words, Divine Consciousness is projected into, and pervades Its own manifestations, in the same sort of way that a fragment of a hologram embodies the whole. It is for this reason that the (manifested) Deity is sometimes referred to in Eastern esoteric philosophy as Brahma-Vishnu—compounded of the two chief deities, derived from the Sanskrit root *Bri*, ‘to expand’, and *Vish*, ‘to pervade’; hence Brahma-Vishnu is ‘THAT which expands and pervades.’

## THE PROCESS OF MANIFESTATION

**That which is motionless cannot be Divine. But then there is nothing in fact and reality absolutely motionless.**

*THE SECRET DOCTRINE*<sup>24</sup>

KEYWORDS: Limitation, Motion, One Reality, Maya, Duality, Triplicity, Consciousness, Power

## The Necessity of Limitation

Nothing can manifest without a prior limitation. Many examples from our daily life can be cited to show that a limiting, or bounding field must be established before any manifestation can occur. For example, a human embryo ‘manifests’ within the limiting containment of the womb. Likewise, if we have all day to perform a task, the chances are little gets done; but when constrained to, say, an hour, more is accomplished. By the same token, a thinker must first delineate the subject, or field of his deliberations; a composer must self-limit himself to his composition (e.g. opera, symphony, sonata), an author to his subject-matter—they cannot compose and write interminably on everything.

## What Constitutes Manifestation – What Exactly Is It?

From a scientific standpoint, the most interesting corollary of the fundamental unity of existence which is ‘ONE THING’ is this: since absolutely nothing can exist in addition to, or ‘outside’ this ONE THING, or One REALITY, the only

<sup>23</sup> SD-2, p. 348.

<sup>24</sup> SD-1, p. 70.

changes that can occur must necessarily be that of Perpetual Motion<sup>25</sup> in Its 'substance', which has an infinite capacity of assuming innumerable forms as the basis of (i.e. under-lying) phenomenal manifestation. More technically, by means of such Motion-induced forms are produced the (a) raw material of the manifested Universe; and (b) the means, or instruments of perception of the objective aspect of the manifested Universe in its various degrees of tenuousness, dependent upon its level of differentiation below the integrated state.

Such Motion is explained by HPB as the 'equivalent on the material plane' of the 'Breath' of the One Existence [which phrase] is used in application only to the spiritual aspect of Cosmogony by Archaic Esotericism.<sup>26</sup> Accordingly, the phenomenal (manifested) worlds, although 'real' in themselves at their level, must from the ultimate standpoint be an illusion, since such worlds are nothing other than one or other formative *appearances* of the One, or Ultimate Reality. This maya and the role of motion is elaborated below, since a fuller grasp of the essential idea contributes towards an understanding of Nature *in abscondito* and the attendant problem of mistaking mirages for reality. In passing, note that Einstein's general relativity theory, though obviously not the same as the Occult doctrine, is nevertheless a large step towards it, in that theories in physical science were accounted for by Einstein on the basis of motion (relative movement). The Occult doctrine on the role of motion has thus been partly corroborated by modern, Western science.<sup>27</sup>

We now resort to the previous analogies from physical nature and mathematics to bring out the nuances behind the above assertions.

## Analogies to Highlight the Importance of Motion as the Basis of Manifestation and Illustrate the Nature of Maya

### THE OCEAN

Recall the previous example of the Ocean and imagine a calm day with little movement in the water. Now imagine the churning of the water either by the weather, or by, say, a ship propeller, which will produce an innumerable number of 'wavescapes' of almost infinite variety.

---

**Abstract Motion is the basis of phenomenal manifestation and its perception, produced in the One Reality as an appearance. The world is mind produced.**

---

But the water *in itself* is unchanged and the innate stillness of the depths of the ocean is unaffected by the motion within itself. We previously quoted an aphorism from the Bhagavad-Gita, which bears

<sup>25</sup> In no way is Motion meant in a blind, mechanical sense, but curiously, there is a close correspondence between Newton's Three Laws of Motion and the three gunas in Occult Science (more later).

<sup>26</sup> SD-1, p. 125. There exists a sublime correlation between the Spiritual aspect with its Material plane equivalent—Breath with Motion or Change, representing Unconditioned Consciousness. Both underpin the organic, life-principle in existence. For it is a fundamental tenet of Occult Science that *there is no dead matter anywhere in the whole Universe*. All is LIFE in varying degrees of conscious expression and complexity of form.

<sup>27</sup> This is one of many examples of HPB's prophetic remark about science being honeycombed with metaphysics, and dragged into the maelstrom [to science, that is] of Occult Science.

repeating: 'Having pervaded this whole universe with one fragment of Myself, I remain.' In terms of our ocean example this quotation could be recast as: 'Having manifested all kinds of wavescapes by virtue of Motion within itself, the essential nature of the Ocean as a whole is unaffected and unchanged.'

Thus the phenomenal (manifested) worlds are mayavic in that, in manifestation, which certainly includes the physical plane, all these worlds appear to have different, independent ex-istences (like the various wavescapes). But in fact these worlds are not separated from the One Reality in its essential nature of pure Consciousness in which they are produced by Motion—the Reality in itself (like the ocean) remaining absolutely unchanged. Motion is the dynamic aspect of Reality underlying phenomenal manifestation. The world, physical matter, so-called, is essentially a *mental* phenomenon, produced by motion in mental stuff. [However one should resist the temptation for loose statements like 'its all an illusion anyway', for the manifested worlds like the waves are very real to themselves and to others *on their plane of existence*—as our toothache is very real to us when it happens, but assumes an altogether illusory countenance when cured! It is from a higher standpoint that manifested worlds are a transitory appearance—*whenever we move away from any integrated state, relativity and duality supervene.*]

## MATHEMATICAL EXAMPLES

*Equations of physical phenomena* Consider any mathematical equation that characterizes a physical phenomenon, such as the inverse square law of gravity, or the laws of fluid dynamics. The equation represents the noumenonal relationship in completely general terms; its many solutions represent particular phenomenal manifestations of that relationship. Now any number of solutions of a particular equation do not affect the equation itself! For example, take the well known case of the electrical current in a circuit being the applied voltage divided by the resistance of the conducting medium. This equation can generate innumerable solutions depending upon chosen values of voltage and resistance. But whatever the particular solution (manifested phenomenon), the equation-in-itself (noumenon) remains unaltered. All its solutions are subsumed in the integrated<sup>28</sup> state of the equation itself. The potentially infinite number of solutions are mayavic—the only enduring reality is the equation.

*Binary arithmetic* Many ancient civilisations (such as the Babylonians, Mayans, Egyptians, Chaldeans and Indo-Aryans, to name but a few), have regarded the zero as the source, i.e. infinite potential, of all numbers. This is founded on the esoteric principle of the interplay between the zero (symbolizing the UNITED State, or ultimate Reality), and its primary differentiation, symbolized by the 1, which generates an infinity of manifested (mayavic) products. This can also be discerned in Fig. 5.1. There is interestingly, a direct correspondence with binary arithmetic, which constitutes the basis of calculation in computers. The binary notation requires just two digits, 0 and 1, which, depending on their arrangement,

<sup>28</sup> The term 'integrated' used of course in a qualitative and not in the calculus sense.

can generate any required number (for example the binary equivalent of the decimal number 9 is 1001).

## What Principles are Involved in 'Causing' Manifestation? A Simple Appreciation

A fundamental pre-requisite for manifestation to occur (at any level), is a limiting field in which to manifest, as previously stated. *Without limitation and associated containment, there can be no manifestation.*

Referring again to Fig. 5.1, manifestation occurs when (1) by Self-limitation, the primary differentiation of the UNITED State (2) first gives rise to two equal and opposite (i.e. polar) differentiated states; which subsequently (3) differentiate to produce an infinite number of expressions and forms; such that (4) the totality of all such productions from the two primary poles is equal and opposite so that the balance in the UNITED state (Void or zero) is maintained—we previously explained that the 0 and  $\infty$  reflect one another.

The first differentiation of the UNITED State gives rise to the primal polarity. In quasi-mathematical language, this can be written as

$$\partial(\text{UN-ITED State}) = \text{primary polarity}^{29}$$

which is, so to say, the reverse of the previous 'equation' about the UNITED State being the integration of all possible differentiated states.

It is wrong however, to assume that limitation and then duality follow in sequence (although they necessarily have to be described in a sequential manner owing to the limitations of language); rather the two processes occur *pari passu*, that which is being manifested creating its own field of limitation.

## The Emergence of Duality

How do we ever know something or anything? Even asking such a question throws up a duality. Because we can:

*either* know by the living experience of actually being that which we wish to know—entering into and becoming one with the essential nature of the integrated thing-in-itself. This involves no dualities since the knower and the known are merged, which as explained in Part II represents the esoteric paths of mysticism and Occult Science;

*or* we can adopt the scientific method which is to know via the mind and intellect which inevitably creates a duality between subject (the perceiver) and object (the

<sup>29</sup> As with the integral sign previously used, the above differential operator,  $\partial$ , is not used in the strict calculus sense, but to convey, in a form that is familiar to mathematicians, the 'flavour' of the general principle of differentiation in Nature.



perceived), which duality necessarily invokes the third factor, perception, hence resolving the duality into a triplicity.

*So whenever an integrated state at any level, is beheld through the instrumentality of mind and intellect, hence through analysis and fragmentation, and therefore partially—the former appears as a pair of polarized opposite principles in manifestation, emanating from a central point.*<sup>30</sup> The emergence of a duality from an integrated state, and the role of the point, are so important that the next section is devoted to a further explanation, along with a physical analogy to facilitate understanding. Meanwhile let us continue with some of the general characteristics of dualities.

## Basic Characteristics of a Duality

The duad is the fundamental propelling principle behind all manifestation in Nature at any level. Why? As its name implies, a duad is an essentially unbalanced state of affairs, rather like a two-legged stool. Accordingly, the duad is a dynamic principle with an intrinsic propensity for action. It is for this reason that esoterically, duads are said to be the 'origin of Evil, or Matter'—Evil to be regarded as the counteracting principle, or that which provides the resistance and opposition necessary for something to be brought through into manifestation on the plane of objectivity. Being inherently unstable, the duad always seeks to resolve into a triad which, in its stability and balance (like a stable, three-legged stool), mirrors in manifestation, the pre-existing harmony that existed before the duad 'emerged' from the integrated state. However if duads are not satisfactorily harmonized and oppose one another, then we do have evil in the generally accepted sense of an increasing fragmentation and isolation of differentiated parts from the integrated whole, resulting in conflict and war.<sup>31</sup>

The essential characteristics of any duality born of an integrated state are:

1. The poles are complementary, and of opposite sign.
2. Each pole reflects the other, though one pole invariably predominates over the other (which pole predominates depends upon the actual circumstances). When any one pole is in the foreground the other is always in the background.
3. It has an innate tendency to resolve into a triad, that is, the forging of a new, third element that unites the two poles of the duad and therefore partakes of the nature of each. Whenever two polar principles (or any two different principles) interact, a third principle partaking of the nature of both, is needed to act as a bridge and interface between the two.

30 This is another way of stating HPB's remark that when we move away in thought from the Absolute, duality supervenes in the contrast of Spirit (or Consciousness) and Matter, Subject and Object. This will be amplified considerably in the next section.

31 This applies at any level. For instance in the psychological sphere, Eusibius and Florestan symbolized the introverted and extroverted sides of the composer Robert Schumann's psyche; which unresolved duality contributed to his ultimate insanity.



## Principal Duality Responsible for Manifestation

We explained earlier the emergence of the manifest from the unmanifest, stating that for this to occur, there has to be a duality between Divine System—what the Divine IS, and Divine Function—what the Divine DOES (by virtue of being what it IS). This is none other than a duality of **Shiva**, or Divine Consciousness, and **Shakti**, or Divine Power.<sup>32</sup> For convenience, the above is summarized in the Table below.

Primary duality resulting from the first differentiation of the UNITED State is:		
<b>Shiva – Divine Consciousness</b> which refers to, so to say, the Divine <i>System</i> , or what the Divine <i>IS</i>	and	<b>Shakti – Divine Power</b> which refers to, so to say, the Divine <i>Function</i> , or what the Divine <i>DOES</i>

Refer to Fig. 5.1

The Occult catechism states: ‘Shiva and Shakti are the innermost soul and essence of the Universe.’ In other words, manifestation, or the phenomenal worlds are produced against a background of Pure Consciousness by the interaction of these two polar, ultimate Principles, which are the origin and root of all ex-pressions of Divine Consciousness (Shiva) and Divine Power (Shakti) at different levels of manifestation. Thus all dualities in Nature spring from this primary duality, as all manifestation is the result of an interplay between Shiva and Shakti at whatever level of differentiation and descent.

The above is further explained in the next section in which we also explore in greater depth the role of Shiva and Shakti, before considering how their joint interaction manifests the Cosmos.

32 Many other terms are used to designate this cardinal duality, but there is no need for them at this stage.



# Section 6    Unity – Duality – Diversity

Having set the overall framework of that part of Occult Science that is relevant to our purpose, we must establish the core principles that constitute the bedrock of the further development of our exposition.

## In this section

- The fact of unity
- Why dualities appear from unity
- The occurrence of diversity
- The doctrine of graduated unity
- The conditioning influence of the mind
- Primal duality responsible for manifestation

## THE UNITY OF ALL EXISTENCE

**The radical unity of the ultimate essence of each constituent part of compounds in Nature—from star to mineral atom, from the highest Dhyân Chohan to the smallest infusorium . . . this unity is the one fundamental law in Occult Science.**

*THE SECRET DOCTRINE*<sup>1</sup>

The above quotation sets out the foundation of Occult Science. Mystics and poets have intuitively sensed this Unity since time immemorial and now modern science, using its own ways and methods, is increasingly subscribing to this ageless truth, as intimated in Section 2 (see for example Fig. 2.13). In Section 5, we sketched a broad outline of that portion of Occult Science which is pertinent to our present scope and alluded several times to the ‘radical unity of the ultimate essence’ of all existence, by showing how the smallest constituent parts in Nature are inter-related, one with another, and rooted in what we called the Unmanifested-Integrated State (see Fig. 5.1). We also stated the rationale for our assertion of this truth and highlighted the fact that manifestation occurs as a result of the activity of a primal, polar duality arising in the unmanifest. In this section we ask why and how a duality can indeed arise from a state of intrinsic unity and wholeness, before proceeding, in the next section, to explain the role of dualities in the actual mechanism of manifestation.

---

<sup>1</sup> SD-I, p. 179.

## FROM UNITY TO DUALITY

**But once that we pass in thought from this (to us) Absolute Negation, duality supervenes in the contrast of Spirit (or Consciousness) and Matter, Subject and Object.**

**Spirit (or Consciousness) and Matter are, however, to be regarded, not as independent realities, but as the two symbols or aspects of the Absolute, Parabrahman, which constitute the basis of conditioned Being whether subjective or objective.**

*THE SECRET DOCTRINE*<sup>2</sup>

The above recondite quotations encapsulate the subject of our discussion which is conveniently divided into three parts: (a) a rudimentary appreciation by way of a simple physical example to illustrate why dualities emerge from an integrated state; followed by (b) the Occult statement embodying the heart of the subject; and finally (c) the emergence of duality according to the principles just enunciated.

### Rudimentary Appreciation and Physical Example – Why and How Dualities Emerge from a State of Wholeness and Unity

The UNITED State alone is the universal solvent in which all potential dualities are resolved and subsumed. So why then do dualities ever appear out of an integrated and unmanifested state? The reason is that when we move in thought away from the state of wholeness, any manifested aspect of an integrated state appears, or presents itself, as a duality between subject and object, knower and known, etc. *due to the polarizing effect of the mind*. This is shown in Fig. 6.1(a) where it is seen that ultimately, a polarity is a mind- or intellect-bred appearance. Slay the mind<sup>3</sup> and we realize that both Spirit and Matter are, ultimately, a maya.<sup>4</sup> But why does mind and intellect do this? Because its very nature is to analyse, it cannot see the whole picture—so it functions in the realm of the relative and not the absolute. Fig. 6.1(b), which is a sort of bird's-eye view of Fig. 6.1(a) illustrates this point by way of a simple physical analogy.

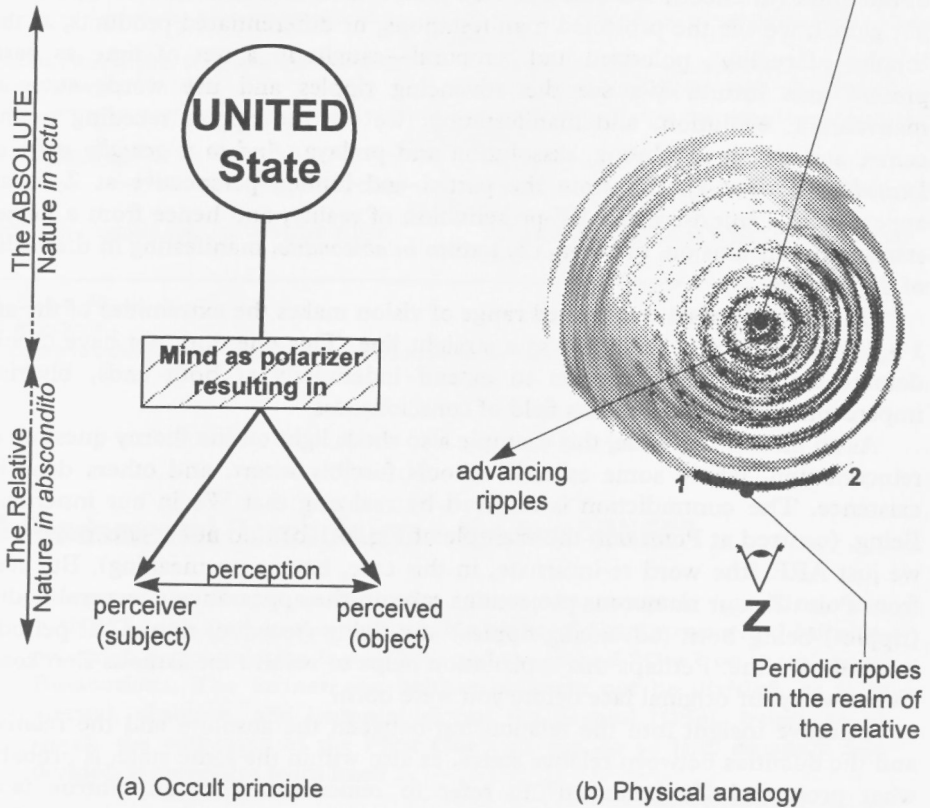
Let us drop a heavy stone in the centre of a large, perfectly still lagoon and watch what happens from two different perspectives: (a) from 'within', that is, the inner standpoint at the centre at 0; and (b) from 'without', which is the detached, external perspective from the shoreline at Z.

From a position at 0, we see all the outflowing ripples as a whole (we shall imagine that we are gifted with global, 360 degree vision). But if we now move

<sup>2</sup> SD-1, p. 80.

<sup>3</sup> Adapted from *The Voice of the Silence*, verse 5. This famous passage alludes to the inherent characteristic of the lower mind to act as a sort of polarizing and refracting prism, thus producing multiple images of the pure light of consciousness. There is a close relationship between mind and light which will be explained later.

<sup>4</sup> SD-2, p. 357.



'But once that we pass in thought from this (to us) Absolute Negation, duality supervenes in the contrast of Spirit (or Consciousness) and Matter, Subject and Object.'

*The Secret Doctrine*

**Fig. 6.1** The Emergence of Duality – The Absolute and the Relative

our perspective to point **Z** on the shore, we do not see circular ripples advancing from a central point of disturbance, but rather circular arcs of ripples 1 - 2 that cross our field of vision at regular intervals of time, depending on the velocity of the ripples emanating from their single point of disturbance at 0. We also notice that these ripples do not have precisely defined boundaries separating them from the surrounding water as a whole.

At 0 our consciousness is centred in the integrated state of reality, so we see, or rather experience 'at-onement' with the reality-in-itself—non-polar, non-relative and eternal. This is nature *in actu* from the standpoint of the absolute—an

essentially subjective experience. But when we attempt to experience, or rather to *know*, the same reality objectively<sup>5</sup> (i.e. as something outside of ourselves that is presented to consciousness) then we must necessarily invoke the instrumentality of the mind (intellect). Because our view is now from a particular standpoint and not global, we see the projected manifestations, or differentiated products, as the 'ripples of reality', polarized and temporal—caught in a net of time as past, present and future. We see the advancing ripples and use words such as *manvantara*, evolution, and manifestation; we see the ripples receding to the centre and call it involution, dissolution and *pralaya*. *And so it actually is for us located at Z*. But all this from the partial and limited perspective at *Z*, is an appearance, a mind-created RE-presentation of reality, and hence from a higher standpoint, an illusion, or *maya*, i.e. nature *in abscondito*, manifesting in the realm of the relative.

On a cosmic scale our limited range of vision makes the extremities of the arc 1 - 2 of a cosmic circle appear as a straight line. This line does not have clearly demarcated ends, but appears to extend indefinitely at both ends, blurring imperceptibly into the limitless field of consciousness.

As an interesting aside, this example also sheds light on the thorny question of reincarnation, where some esoteric schools forcibly assert, and others deny its existence. The contradiction is resolved by realizing that We in our innermost Being, (centred at Point 0 in the example of Fig. 6.1(b)), do not re-incarnate—for we just ARE (the word re-incarnate, in this case, having no meaning). But seen from Point *Z*, our numerous projections take on the appearance of several bodies (ripples) being born (advancing ripples) and dying (receding ripples) at periodic intervals of time. Perhaps this explanation helps to resolve the famous Zen koan: 'What was your original face before you were born?'

Intuitive insight into the relationship between the absolute and the relative, and the dualities between relative states, as also within the same state, is probably what prompted Krishnamurti<sup>6</sup> to refer to reincarnation as an 'untrue fact'. Perhaps we can speculate that the whole of manifestation is also an untrue fact! Perchance also for this reason, HPB stated that 'Matter is Spirit at the lowest point of its cyclic activity; and both [i.e. Spirit and Matter] are—MAYA.'<sup>7</sup>

We give three exquisite excerpts from esoteric literature (repeating our opening quotation), with subtle variances in nuance, to highlight the relationship between the absolute and the relative, or the integrated state and its differentiated appearances (corresponding to the standpoints at 0 and *Z*, respectively, in the above example).

In the next section we state the central Occult exegesis corresponding to the above elementary account of how unity can divide to manifest a duality.

5 Objective from the Latin *obicere* meaning 'to lie in the way, or put in the foreground'.

6 Krishnamurti was assiduously (and notoriously!) circumspect when asked about reincarnation. This is one of his most direct answers. For he refrained from supplying cut-and-dried answers to questions that demanded a holistic and total approach.

7 SD-2, p. 357.

The UNITED State -	Manifestation – Manifold Appearances
<ul style="list-style-type: none"> <li>• The ABSOLUTE</li> <li>• Eternally still</li> </ul>	<ul style="list-style-type: none"> <li>• The Relative</li> <li>• Ever-active</li> </ul>
But once that we pass in thought from this (to us) Absolute Negation,	H. P. Blavatsky <sup>a</sup> duality supervenes in the contrast of Spirit (or Consciousness) and Matter, Subject and Object.
The Moment sees —	Sri Aurobindo <sup>b</sup> the ages struggle to express.
What really happens does not take place in time,	Paul Brunton <sup>c</sup> but it will unfold for you in time because you are in time.

a SD-1, p. 80.

b Aphorisms

c Advice to a student—see *Paul Brunton: A Personal View*, by Kenneth Thurston Hurst, Larson Publications, 1989.

## A Fundamental Occult Axiom – the two “ONES”

Moreover, in Occult metaphysics, there are, properly speaking, two “ONES”—the One on the unreachable plane of Absoluteness and Infinity, on which no speculation is possible; and the second “One” on the plane of Emanations. The former can neither emanate not be divided, as it is eternal, absolute, and immutable; but the Second [One], being, so to speak, the reflection of the First One . . . can do so [i.e. emanate and divide]. It emanates from itself . . .

THE SECRET DOCTRINE<sup>8</sup>

Radiation is . . . the unconscious and spontaneous shooting forth, the action of a something from which this act takes place; but emanation is something from which another thing issues in a constant efflux . . . Radiation can come from the Absolute; Emanation cannot.

H. P. BLAVATSKY<sup>9</sup>

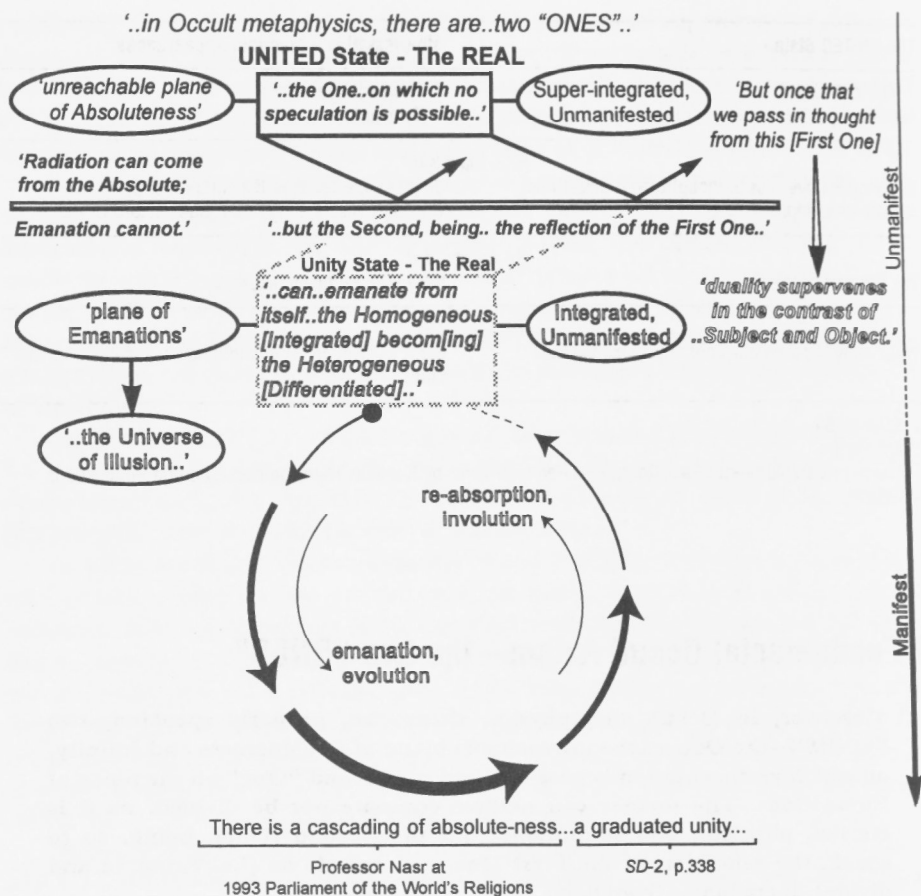
As an aid to understanding, the above axiom of Occult Science is shown in a semi-pictorial form in Fig. 6.2, along with the terms used to designate the two “ONES”, viz:

*The First “One”*: as displayed in the upper section of Fig. 6.2. We shall refer to the First “One” by three equivalent terms, depending on context—*REALITY*, or *REAL*, or *UNITED State* (from Unmanifested and super-Integrated State), which as previously mentioned, is in many ways the most appropriate term for the

<sup>8</sup> SD-1, p. 188.

<sup>9</sup> *Transactions of the Blavatsky Lodge*.





**Fig. 6.2** The two "ONES" - UNITED and Unity (all quotations are in italics and taken from SD-1, pp. 80, 188 and the Transactions of the Blavatsky Lodge)

scientific flavour of this overall exposition. (By 'super-Integrated' is meant that which is even beyond integration, being the origin and source of the latter.)

*The Second "One"*: seen in the middle section of Fig. 6.2 shows, so to speak, the reflection of the UNITED State as being the *Unity State*—the abode of *Reality*, or the *Real*. This is the 'plane of Emanations' from which the cycle of emanation commences.

Whereas these terms will be used as strictly as practicable, it will be appreciated that in a transcendental subject like this, literal adherence to definitions can become didactic, so that a degree of flexibility of usage is unavoidable (at least by the present writer).

Referring to the second quotation above, an important distinction is made

between *radiation*, and *emanation*. The REAL radiates, the Real emanates—the primal radiation of the REAL is the periodical manvantaric emanations.<sup>10</sup> Emanation may deplete its source, radiation can never diminish it (this is amplified in Section 9 on the topic of infinite energy). Meanwhile note that it is because of the *emanatory* nature of the manifested Cosmos from the plane of the Unity State, that the third fundamental proposition of the SECRET DOCTRINE becomes an absolute necessity. For such emanation is the manvantaric process—a journey commencing with evolution as increasing descent of Spirit into Matter, the activity being outgoing, or centrifugal, resulting in apparently separated and differentiated units; but which must subsequently be counterbalanced by the involutionary journey of return and re-absorption into pralaya—inward turning, or centripetal. The ‘Divine purpose’ of this obligatory pilgrimage of every Soul through the Cycle of Necessity is that each apparently separate unit may awaken to complete consciousness, i.e. become SELF-conscious of its unity and innermost divinity and so ascend through all the degrees of intelligence, from mineral to plant up to the holiest Dhyani-Buddha.

## SWEEPING ASIDE SOME MISCONCEPTIONS

To conclude this part, it is a misconception, according to the writer, to regard the REAL as being coldly aloof and divorced from all manifestation. Just because the REAL is unaffected by its reflection(s) as, and into, the ‘Universe of Illusion’—the ‘untrue fact’—does not mean that there is no affinity, or relation between the two, for as long as the latter exists. Connection does not imply any sort of control, interference or manipulation—only a radiative association in the same sort of way that a radiant heater in a cold room is in no sense diminished, affected by, or concerned with either the number or types of people who choose to, or decide not to partake of its warmth; but there is still a relation between the source and receivers of radiation. We may go even further and suggest that the REAL *acts*, for HPB has explicitly stated in the above quotation that radiation is the ‘action of a something from which this act takes place’ (i.e. no radiation could happen without action on the part of the radiator). Further commentary, however, on the REAL is undesirable, particularly since this is a realm stated categorically as being beyond speculation. (But there is no injunction against an ‘EXPERIENTIAL KNOWING’ through MEDITATION, for it is *speculation* that is futile—the transcendental need not be the unknowable or the non-experienceable).

---

**Can the Rootless Root of all existence  
have no association with its  
reflections, while they last?**

---

The second misconception applies to the notion of reality being a separated sort of state. When HPB speaks of a ‘graduated unity’, and Professor Nasr refers to a ‘cascading of absolute-ness’ (see the bottom of Fig. 6.2), both are implying that reality, other than in the ultimate sense, is a *relative*, or *graduated* condition. Accordingly, different realities pertain to different planes of existence, each such ‘relative reality’ rooted in, and therefore reflecting to some degree, the ultimate

<sup>10</sup> Refer to SD-I, p. 83.

REALITY. On any such plane, the greater the degree of integration and co-ordination, the closer is the approach to the 'real' on that plane—conversely, the more the fragmentation and disunity, the more 'unreal'. It is much more profitable, and accurate, to understand terms like 'real' and 'unreal' as signifying

the degree of integration and fragmentation, respectively, of a particular state, rather than a special set of circumstances, or extrinsic mode of existence.

---

**By reality we mean, in general, a state of integration and wholeness—not a special sort of existence.**

---

We are now in a position to contemplate the primary duality responsible for all manifestation. But to reiterate our central theme, there is no *ultimate* and *irresolvable* duality, such as 'God' and (or versus) Man, Creator and Universe, spirit and matter, good and evil, heaven and hell. All dualities are subsumed in the essential unity, the UNITED State. This is the pivotal tenet of *Theos-Sophia* from all ages and traditions since time immemorial.

Existence is ONE THING, not any collection of things linked together. Fundamentally there is ONE BEING [having] two aspects, positive and negative. The positive is Spirit, or CONSCIOUSNESS. The negative is SUBSTANCE, the subject of consciousness. This Being is the Absolute in its primary manifestation. The moment one lets it go [i.e. the fundamental unity] the idea of SEPARATION supervenes, and the study loses its value.<sup>11</sup>

## The Primal Duality – Shiva and Shakti Tattvas

But the Duad, although the origin of Evil, or Matter—hence *unreal* in Philosophy—is still Substance during Manvantara . . . And from this Duad proceeded all the *Scintillas* . . . which are in constant interaction and correspondence.

THE SECRET DOCTRINE<sup>12</sup>

The Universe is made out of the Tattva, it is sustained by the Tattva, and it disappears into the Tattva . . .

THE SECRET DOCTRINE<sup>13</sup>

We shall now 'pass in thought' from the UNITED State, so that 'duality supervenes' on the 'plane of Emanations'—the Unity State, the abode of Reality. We can intuitively appreciate that the very onset of manifestation is characterized by dualities, that is, everything in Nature from that point onwards is criss-crossed

11 Madame Blavatsky on *How to Study Theosophy*, Theosophical Publishing House, 1960. See also Bowen Notes, 8 and 9.

12 SD-2, p. 343. The term 'Evil' is hardly meant in the theological hell-fire sense, but rather as the 'counteracting principle' (SD-2, p. 339), or *DEMON EST DEUS INVERSUS* (SD-2, pp. 129–41). In electricity for example, it is the resistance of a conducting medium that provides the 'counteracting principle' without which the flow of current in the former would be infinite and therefore unmanageable.

13 SD-5, p. 469.

by pairs of opposites such as night and day, good and evil, and that these manifestations are real as long as they last—but they do not last for ever. What is the nature of such dualities?

We alluded in Section 5 to the fact that ‘all is life’ (there is no such thing as ‘dead’ matter) and so any living being *acts* according to its essential *nature*. At the highest level, then, Reality manifests aspects of itself by acting according to its nature. Put in scientific terms, Reality can be characterized by a duality pertaining to its *systems* characteristic—what it IS, or the Pure Principle-in-itself; and its functional characteristic—what it DOES, or the Ex-pression of the Pure Principle, by virtue of acting out what it IS (see Fig. 5.1.). In Occult terms, manifestation is the derivative product of the interaction of two primary, polar and dual principles—**Shiva**, or **Consciousness** and **Shakti**, or **Power**.<sup>14</sup> It is very important to appreciate the *inter-related* qualities of each, as shown in the tabulation associated with Fig. 6.3 overleaf.

In essence, then, the Shiva and Shakti Tattvas:

- (a) exist in a fully integrated form in the UNITED State, the ‘unreachable plane of Absoluteness’, in which all principles are subsumed—the Rootless Root of existence, the State that is neither ‘this’, nor ‘that’, but the source of all manifestation and modes of existence;
- (b) but they exist in the Unity State, the reflected ‘plane of Emanations’, as the primal duality and polarity responsible for all manifestation. Shiva and Shakti are ‘One, in reality, yet Two in the universal conception of the Manifested, even in the conception of the One Logos, its first “Manifestation.”’<sup>15</sup> (This ‘One Logos’ is the Mahabindu, (Great Point), the first product, or “Manifestation” of the Shiva~Shakti<sup>16</sup> interaction, as we shall discover in the next section.)

Now the above implies that all principles have their ultimate, or highest aspect in the REAL, but that does not mean that they manifest from the REAL, or that

---

**Shiva and Shakti are fully merged and subsumed in the UNITED State, but co-exist in the Unity State as the primal duality responsible for manifestation.**

---

the REAL manifests. Such principles are fully integrated and subsumed in the REAL and cannot be actuated, so to say, without first being reflected on to the ‘plane of Emanations’, from which the primal duality emerges, so that manifestation can happen.

Now the dual, polar principle of Shiva and Shakti is also referred to in Indian Occultism by the terms Brahma Chaitanya and Shabda Brahma.<sup>17</sup> Brahma is derived from the Sanskrit root *Bhri*, meaning ‘to expand’; while Chaitanya<sup>18</sup> is

14 Other terms in *The Secret Doctrine* referring to this primal duality are Father and Mother, besides of course, Parabrahman and Mulaprakriti.

15 SD-1, p. 317 which refers, in point of fact, to Parabrahman and Mulaprakriti. However the meaning applies equally to the *universal* Shiva and Shakti Tattvas as above defined in Fig. 6.3. For a scientifically-based exposition we prefer to deal with Shiva and Shakti rather than Parabrahman and Mulaprakriti, which terms are more suited to metaphysics and philosophy.

16 All dualities are denoted by a swing-dash ‘~’.

17 I. K. Taimni, *Science and Occultism*, The Theosophical Publishing House, 1987, pp. 173–4.

18 This term is full of meaning. Curiously it is used by HPB only twice in *The Secret Doctrine* (SD-1, p. 73 and SD-5, p. 153).

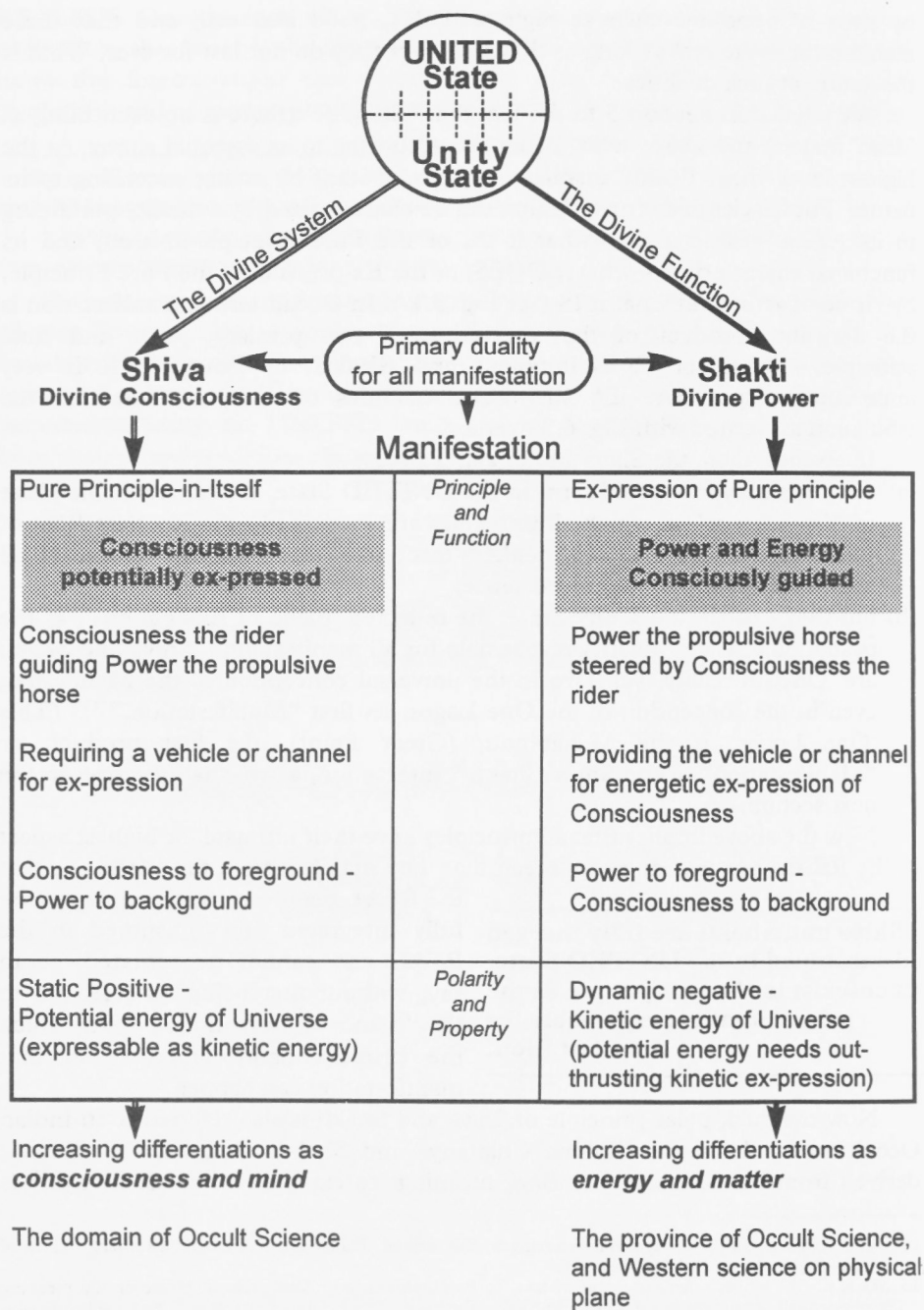


Fig. 6.3 'The Universe is made out of the Tattva'

derived from Chit, meaning consciousness, or mind. So Brahma Chaitanya means to expand (*Bhri*) as consciousness (Chit). It refers to that aspect of the UNITED State as Supreme Consciousness containing all principles and functions in their highest form. Shabda Brahma means to expand (*Bhri*) as Power in the form of mystic Sound (Shabda). It refers to that aspect of the UNITED State as the propensity for ex-pressing all principles and functions in manifestation. Shabda Brahma is inherent in Brahma Chaitanya, that is, within the pure principle lies also the potential for its infinite ex-expression. It will be realized that apart from a subtly different nuance of meaning, the dual, polar Shiva~Shakti is virtually synonymous with the dual, polar Brahma Chaitanya~Shabda Brahma.<sup>19</sup> (It is certainly not the intention of the writer to propagate new and unfamiliar terms. However the significance of Brahma Chaitanya and especially Shabda Brahma lies in their relation to the role of sound and light in bringing about manifestation, as will be explained in Sections 7 and 8.)

The role of Consciousness/Brahma, i.e. '*Consciousness Expanding*' as the ever-present uniting factor in the primary duality responsible for manifestation (and for that matter in all subsequent dualities that are subsets of the primary) is highlighted in Fig. 6.4.

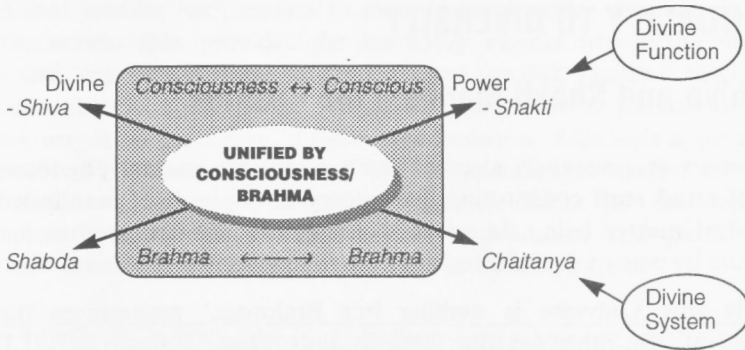


Fig. 6.4 The Unifying Factor of Consciousness

As an analogy to draw out the essential meaning behind the dual, polar principle of Shiva~Shakti, (or near-equivalent Brahma Chaitanya~Shabda Brahma), consider a musical performer. In order that his latent (i.e. unmanifested) musical talent can be fulfilled he needs to have both (a) innate musical disposition, or potential (Shiva-related quality); and also (b) musical technical ability (pervaded and guided by his innate musicality), which provides the vehicle and means of expression for the former (Shakti-related quality). With only technical dexterity, a performance would be a mechanical sequence of perfect notes, certainly not musically expressive. Conversely, the greatest

<sup>19</sup> The subtle difference between the two groups of terms is akin to the difference between a duad and a duality; the former refers to a group of two, the latter to the *state* of being two.

musician could perform nothing without a technique. But the musicality and technique *are not separate*; within the former is also contained the power of its expression through the latter.

By similar reasoning, because the polar, duality of Shiva and Shakti emerges from its integrated condition in the UNITED State, the poles are complementary, of opposite sign, and contain and reflect one another; when any one is in the foreground, the other one is in the background. (Background does not necessarily mean subordinate, or less important.) They always present as a pair—never singly—and they are both rooted in the One Principle, or REALITY in which they are subsumed, and from which they emerged. This duality, like all dualities in general, has an innate tendency to resolve into a triplicity by the creation of a third principle that partakes of the nature of, and therefore unites, the opposite poles of the duality. This was explained in Section 5. But despite their vital part in the overall scheme of manifestation, triplicities will not be emphasized in the subsequent exposition, owing to the more fundamental role of dualities, which must first be grasped before the part of triplicities and the sevenfold system can be meaningfully comprehended.

## FROM DUALITY TO DIVERSITY

### How Shiva and Shakti Manifest the Cosmos

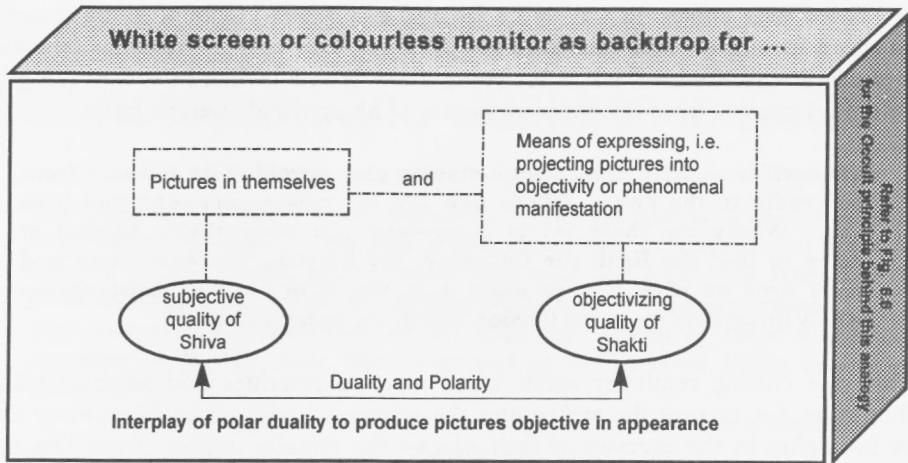
Manifestation as previously stressed is an essentially mental phenomenon, the motion of mind stuff constituting that energy at the basis of manifested worlds, and physical matter being ‘imprisoned energy’ as Western science has shown. This occurs by way of the interaction of the following two fundamental principles:

1. ‘Verily this Universe is nothing but Brahman,’ pronounces the Occult catechism. In other words, there is only One Ultimate REALITY (the UNITED State). Accordingly, manifested Universes are the result of successive projections, reflections and ex-pressions of the one REALITY in progressively lower and increasingly differentiated states of *Itself*.
2. ‘Shiva and Shakti are the innermost soul and essence of the Universe,’ declares another Occult catechism.

Taking 1. and 2. together, means that against a background of pure Consciousness, manifestation is the result of the interplay between the ultimate dual, polar principles Shiva and Shakti, which are the root of all phenomenal ex-pressions of Consciousness/mind (Shiva) and Power/energy (Shakti). This was shown in Fig. 6.3.

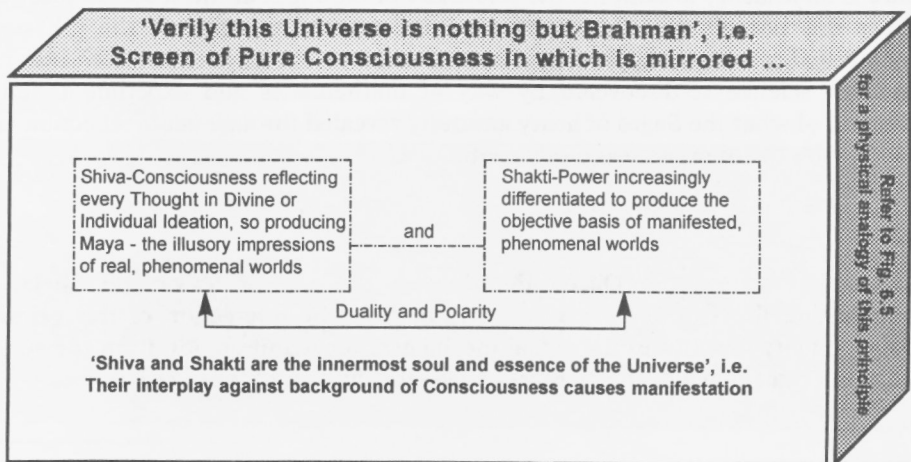
Pictures at the cinema or on a video monitor provide a good physical representation of the above principle of manifestation. Referring to Fig. 6.5, the image on the screen (or video monitor), so real and objective in appearance *while it lasts*, has no existence in itself, but is in fact temporary and therefore an illusion.





**Fig. 6.5** Pictures at a Cinema or on a Video Monitor, Reflecting Fig. 6.6 by way of a Physical Analogy '... a wholly imaginary story, an illusion within the great illusion'.

It is light that enables such images to assume an objective appearance, and the pure white screen that provides the backdrop against which the images are projected and 'contained'. Turn off the light and the only reality is the imageless, white screen. Accordingly, as Fig. 6.6 shows, manifested or phenomenal worlds are mental images on the screen of Pure Consciousness. Although apparently real, there is nothing in existence except (a) Pure Consciousness serving as the screen for the mental images as phenomena; and (b) Light as the radiance of Consciousness whereby such images are both produced and perceived. The common and, in fact, only factor in (a) and (b) is Consciousness.



**Fig. 6.6** Manifestation of Universes by Shiva and Shakti

Those who choose to wallow in the toys of scientific technology or resort to escapism in empty video games or soppy films, may care to note the following message. It was 'transmitted' to the young Paul Brunton when he sought refuge in a Bombay cinema from the apparent failure of his spiritual quest in India.

**Life itself is nothing more than a cinema play unrolling its episodes from the cradle to the grave. Where now are the past scenes—can you hold them? Where are those yet to come—can you grasp them? Instead of trying to find the Real, the Enduring, the Eternal, you come here and waste time on what is even more deceptive than ordinary existence—a wholly imaginary story, an illusion within the great illusion.<sup>20</sup>**

This is a cutting reminder about what our true priorities and sense of values should be, i.e. to seek the *real* behind the ephemeral and not to fritter away time by indulging in the excesses of technology—the popular notion of progress in a scientific age; or yielding to the allurements of the lower psychic worlds, all too frequently mistaken for genuine spirituality by many of the unbalanced, anti-scientific brigade.

## **Partial Corroboration from Western science about Evanescent Nature of 'Solid' Physical World**

It was emphasized that manifested worlds, like cinema pictures or mental images, have no *intrinsic* existence or permanent independence of their own, but are temporary forms or im-pressions in Consciousness—therefore from the higher standpoint, are illusory. In Parts I and II we commented how quantum physics states categorically that it is not possible to know with *certainly* that a specific atomic particle exists at a certain location in space-time. All that can be known for sure is its *tendency to exist*, i.e. the *probability* of finding it at the specified location. Does this not allude to the ephemeral and transitory nature of the (physical) manifested world, so apparently real and solid to our physical senses? Has not modern science re-discovered by way of mathematics and experimentation a fraction of what the Sages of hoary antiquity revealed through acute reflection and meditation (a surer and less costly route)?

★   ★   ★

Having condensed the Occult doctrine on the role of Shiva and Shakti in manifesting the Cosmos, we now examine how the interaction of this primary polar, duality constitutes the actual mechanism for manifestation from the super-physical, right down to the physical plane—the domain of Western science.

---

<sup>20</sup> Paul Brunton, *In Search of Secret India*, Samuel Weiser Inc., 1994, p. 272. As readers of this famous book will know, a few weeks after this stern admonition, Brunton achieved his glorious spiritual illumination in the company of Sri Ramana Maharshi at Arunachala.

# Section 7 Mechanism of Manifestation and Dualities in Nature

The Gods and Monads of the Ancients . . . and the Atoms of the present materialistic schools . . . are only a compound unit, or a graduated unity like the human frame, which begins with body and ends with Spirit [or Consciousness]. In the Occult Sciences they can be studied separately, but they can never be mastered unless they are viewed in their mutual correlations during their life-cycle, and as a Universal Unity during Pralaya.

THE SECRET DOCTRINE<sup>1</sup>

Fig. 7.1 attempts a physical representation of the key features from the above quotation by showing how a prism refracts light into a spectrum. On the one side of the prism there is invisible 'white' light, representing the unmanifested state where all principles and attributes are subsumed—also known as Nirguna, meaning *without* Gunas (attributes). But on the other side the integrated light is refracted (or 'differentiated') into its *corresponding* visible, coloured lights in *mutual correlation*, representing the manifested state—also known as Saguna, meaning *with* attributes.<sup>2</sup> This diagram emphasizes the relation, or *relativity* between the whole and its parts; or the One and the many; or the integrated state and its differentiated states—the former a Unity, and the latter always co-existing in mutual correlations that correspond to the former. Remove the prism and the 'life-cycle' of coloured lights is ended—all that remains is the white light, the Unity—the Real. (Many similar examples can be cited, such as the correspondence between the integrated state of deep and dreamless sleep, which subsumes all our separate daytime activities, the latter in mutual correlation with each other.)

## In this section

- |  |   |
|--|---|
| • Fundamental principles                       | • The duality of Energy and Matter                |
| • How manifestation is brought about           | • How Energy and Matter Arise                     |
| • The role of Sound, the Point, Space and Time | • What exactly is Matter                          |
| • The duality of Space and Time                | • Discontinuities in Nature                       |
| • How Space arises                             | • Correspondences between Matter, Sound and Light |
| • The origination of Time                      | • Scientific corroboration of Occult doctrine     |

<sup>1</sup> SD-2, p. 338.

<sup>2</sup> The terms 'Nirguna Brahman' and 'Saguna Brahman' sometimes used are, strictly speaking, imprecise, for it is Parabrahman that is Nirguna and Brahma that is Saguna, as explained by HPB in the *Theosophical Glossary*.

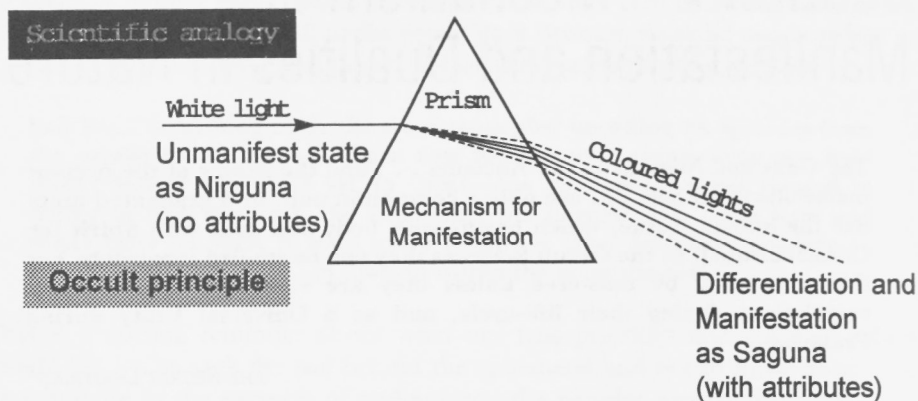


Fig. 7.1 Nirguna and Saguna – Unity and Manifestation

## MECHANISM AND PROCESS OF MANIFESTATION

**KEYWORDS:** Mechanism, mystic Sound, Ideal Point, Space, Time, differentiated forms

What is the mechanism and process of manifestation whereby the Unity represents Itself as diversity? Krama (not to be confused with Karma or Kama) is the generic, Sanskrit term for the overall mechanism behind the manvantaric process whereby the manifest periodically and cyclically (a) appears from the unmanifest—emanational emergence, or evolution; and (b) disappears into the unmanifest—re-absorption as involution ending in pralaya. Krama is, in a sense, synonymous with Fohat, but has a more specific connotation, and so is the preferred term for our exposition. Krama represents, so to speak, the 'esoteric connecting rod' or 'gear wheel', enabling the unmanifest to manifest, or ex-press, *aspects* of itself; and since Krama operates at the unmanifest/manifest interface, it necessarily partakes of the nature of both states (see Fig. 6.2 in Section 6).

Accordingly, Krama (represented by the prism in Fig. 7.1) is responsible for the integrated principles in the unmanifest (analogous to white light) being both:

- differentiated into different principles in the manifested worlds (spectrum of colours)—the '*downwards/vertical*' *aspect*, so to speak; and also for the
- harmonious relationship of the differentiated states of various principles, one with another in 'mutual correlation' (precise wavelength and frequency

relationship between different colours of the spectrum)—the ‘horizontal/lateral’ aspect.

Krama is characterized by three fundamental component-principles, as shown in Fig. 7.2: (1) *Shabda\_Nada*, mystic ‘Sound’;<sup>3</sup> (2) *Mahabindu\_Bindu*, the Point, and its association with *Mahakasha\_Akasha*, Space; and (3) *Mahakala\_Kala*, differentiated time-related forms. Similar terms used in *The Secret Doctrine* are Gods, Monads and Atoms, respectively.<sup>4</sup> In order to explain how their triple activity produces manifestation, these three principles will first be explained individually and then in combination. Fig. 7.2 also shows the mechanism and process of manifestation in simplified form.

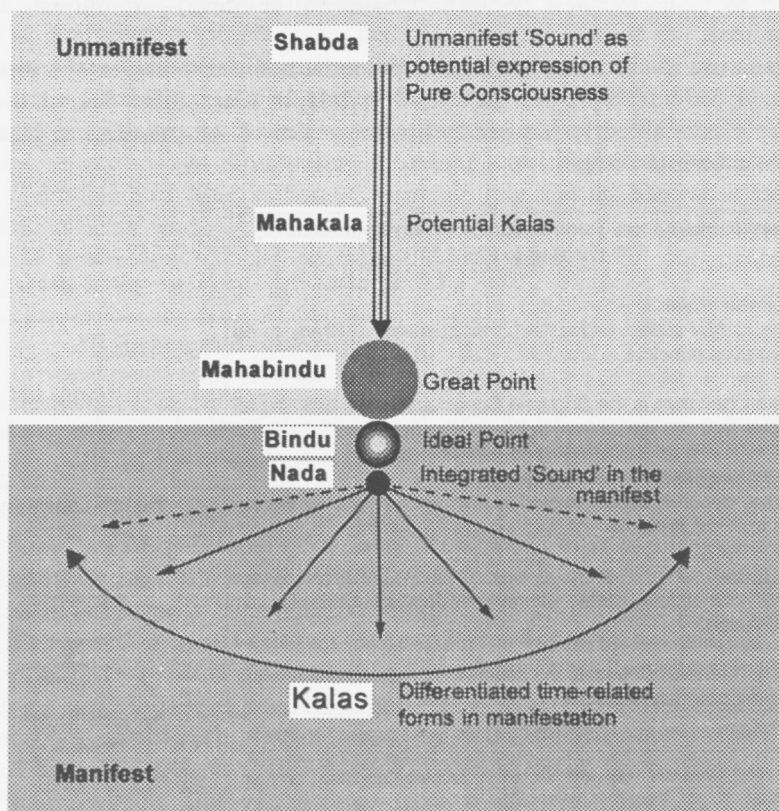


Fig. 7.2 Krama – The Mechanism for Manifestation

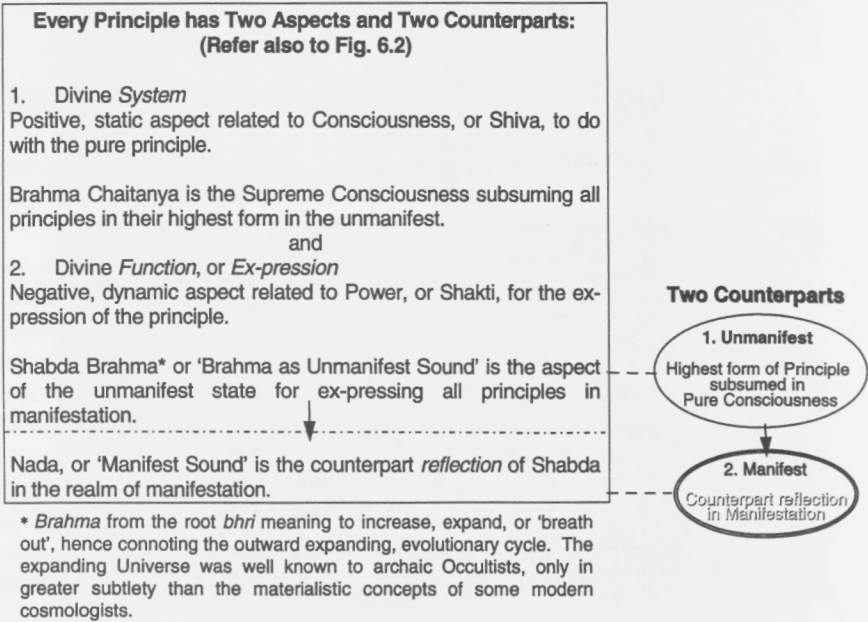
<sup>3</sup> The underscore ‘\_’ always denotes the counterparts of the same principle in the unmanifest and manifest states, respectively, e.g. *Shabda\_Nada* means: Sound in the unmanifest state\_Sound in the manifest state.

<sup>4</sup> *SD-2*, pp. 335–8.

# Fundamental Characteristics of Every Principle

A brief recapitulation and condensation of principles established in the previous section is necessary to understand the role of ‘mystic Sound’ (the only English term and unsatisfactory at that), of which acoustics is just one of its many differentiated aspects on the physical plane. Referring to the Table below, two fundamental statements can be made:

- 1. It is precisely because the potentiality for ex-expression of a principle is always inherent within the pure principle-in-itself (in other words, Shabda Brahma, or Shakti, is inherent within its polar correlate,<sup>5</sup> Brahma Chaitanya, or Shiva), that every ex-expressed principle is endowed with, pervaded by and inextricably bound to Consciousness (Brahma Chaitanya, or Shiva)—its ultimate origin and source.
- 2. It is because the ultimate, or highest potentiality for ex-expression of a principle is always present in the unmanifest as Shabda, or Unmanifest Sound, that the principle is enabled to ‘descend’ into the realm of the manifest as Nada, or manifest Sound.



Statements 1. and 2. taken together, and reinforced in the above Table mean that: **every principle, rooted in Consciousness, has its highest functional, or ex-expressive aspect as Shabda Brahma in the UNITED**

5 The strict definition of ‘correlate’ is a ‘mutual or complementary relation’, which is explicitly what is meant by the above.



**State, and its counterpart *reflection* as Nada in the Unity State, from which subsequent descent into manifestation can occur.** Footnote 3. defines the convention that is rigidly adopted to denote the two counterparts of the same principle, i.e. its ultimate form in the unmanifest, and its counterpart reflection in the manifest.

## **Shabda\_Nada (Mystic Unmanifest Sound\_Manifest Sound)**

Nada is the integrated totality of all forces in manifestation, being the source and origin of all different forces existing and performing various functions in the manifested Universe. Therefore Nada must also be the source of Occult powers from the highest to the lowest kinds (an example of acoustic levitation using the Occult properties of Sound is outlined in Section 9).

The counterpart of Nada in the manifest, is Shabda in the unmanifest (because every principle in manifestation has its highest or ultimate counterpart in the unmanifest as stressed above). Do not however regard Shabda merely as 'unheard' (because unmanifest) Sound, but rather as a Motion-Principle (not principle of motion) as Unmanifest Sound. It is the highest and most integrated form of Motion-Principle, as Sound, remembering that (a) Motion is the basis of all manifestation and (b) Shabda Brahma is Reality (in the Unity State, or plane of emanations) in its functional or dynamic aspect for ex-pressing in manifestation, as Motion, its polar correlate, the Supreme Consciousness. It

immediately becomes obvious that Nada is the vehicle of consciousness in manifestation, i.e. through the 'channel' of Nada, the Supreme Consciousness, Brahma Chaitanya, the polar correlate of Shabda, is provided with a means and

---

**All forces and energies in manifestation reside in their integrated totality as 'Sound'—Shabda in the unmanifest and Nada in the manifest state.**

---

vehicle for Its ex-expression (refer to Fig. 7.2).

All the various functions of consciousness, and forms of energy on all planes of existence thus have a corresponding vibration in Nada. And because, as stated above, Consciousness is at the background of all energies and forces, what Western science calls self-guiding, natural forces are in fact conscious, *intelligent* forces, by no means inert, dead or insentient. This association of *innate* intelligence<sup>6</sup> with every force and process in Nature accounts for the marvellous symmetry, co-ordination, balance and adjustment in Nature which Western science acknowledges, but brushes aside (more on this in Section 9).<sup>7</sup>

Finally, why is Shabda\_Nada sometimes referred to as Gods as intimated above? Mantras are not merely words or sounds in the ordinary sense, but specific

---

<sup>6</sup> *Innate* intelligence, meaning not the by-product of some molecular, bio-electro-chemical activity to be explained away by neuroscience. As always, we ask, how can consciousness be a by-product of something if it is not already inherent in the very nature of the components of that activity which ex-presses it?

<sup>7</sup> For example, the inspiring and beautiful Nature Programmes by Sir David Attenborough; but obviously this must be so, for science prefers to avoid the question Why, and since it can find no physical mechanism, the What and How, for such marvels in nature, it just accepts them at face value or tries to explain them away without probing the deeper implications.



and sacred Sound vibrations<sup>8</sup> representing the vesture or 'sound bodies' of certain aspects of Cosmic forces, known *collectively* as the Gods (in the plural, *never* the singular). These Cosmic forces are the (spiritual) agencies whose joint, co-ordinated and *intelligent* activity produces manifested worlds. Consciousness is all-pervading; but it assumes innumerable forms, each associated with a particular Sound or Mantra. This is further detailed in Section 8 on the role of Sound as an agent in bringing about manifestation, and in Section 9 where the use of Sound for Occult purposes is explained.

## Mahabindu\_Bindu (Great Point\_Ideal Point)

Manifestation (at any level) is the outward, centrifugal projection of a reality from a centre of consciousness. What is this 'centre of consciousness' and how is the Point involved? We can invoke the 'as above, so below' rule to fire our intuitions. Just as the physical centre of gravity of an object is the (dimensionless) point through which the weight of the object apparently acts, so the Bindu is an 'esoteric centre of gravity', the Ideal Point in which every reality is centred and focused—its spiritual fulcrum (centre of gravity being analogically equivalent to centre of consciousness). (Even in common language, we say 'to make a *point*', meaning to bring through an idea from the plane of the mind into meaningful physical manifestation or ex-pression.) Because the Great Point, Mahabindu, is the first product of the interplay of the Shiva-Shakti duality, it necessarily incorporates the essential nature of both. Therefore it is an ultimate Principle for *releasing* infinite Consciousness—Shiva, endowed with infinite Power—Shakti (the Maha- prefix connoting the Parent, or highest Principle rooted in the unmanifest). ('Infinite' is meant in the literal sense, not just 'enormous', which is still limited.) The subsequent Points, Bindus, proliferated from the Mahabindu are therefore moving centres (vehicles or channels) of tremendous consciousness-power, or will-power. *So the role of the Point as the differentiating principle is to act as the primary vehicle of consciousness and power on all the various planes of manifestation, not just on the physical—see again Fig. 7.2.*

It may help to convey this abstruse doctrine by way of a simplistic example, which becomes ridiculous if taken literally, or pushed to excess. Consider driving a motor car. Consciousness is the Driver holding on to Bindu the steering wheel, which is that part of the vehicle closest in touch with the Driver, and by means of which he implements his intentions through adjusting movements. Nada are the road wheels which transport the car according to the willed intent of its Driver, conveyed through the steering wheel. Thus the steering wheel (Bindu) and road wheels (Nada) both act to transform the unmanifested will and energy of the

---

8 Such Sound vibrations, Mantras are 'heard' by Sages in profound meditation. Who knows that they were not heard also by the great musical Masters of both East and West? How could the (physically) deaf Beethoven's divine harmonies have found ex-pression on the physical plane unless the 'germ' of the music had been 'heard' by the Master at a subliminal level in silence, perhaps in space/time orders of mind very different from our mundane world? Short of amassing information on neurological responses of the left and right brain hemispheres, Western science seems unwilling at present to cross the Rubicon and ask profound questions such as these.

driver into a manifested road journey. So they are both vehicles of consciousness, but at *different relative levels*. Occultly speaking, Bindus are the wheel-like moving Points, that interface between, and 'convey' Consciousness and Power from the unmanifest to the planes of the manifest.

---

**Whenever an Unmanifest state is transformed into a manifest state, a Point (Bindu) is involved as the differentiating principle and instrument of manifestation.**

---

[We should never disdain from seeking (or struggling to find, but not inventing) physical examples, however simplistic, to illustrate a lofty or abstract principle. Far from denigrating the

latter, they serve to demonstrate that we are not indulging in empty, theoretical word-spinning, because we are *trying to discern the impress of higher principles, cascaded down to, and mirrored, as their counterpart workings, on the physical plane*. The important point however, is not to drive an example out of context, or take it literally.]

Now because these Points are rooted in, and take their rise in the Divine, the Divine Plan is holographically imprinted and mirrored into each Point rather like the encoded memory chips of the central processing unit of a computer. Therefore the Universe emanating through these Points runs itself according to the 'Divine Computer Program' automatically for the most part (but *not* as a machine-like automaton), as what Western science recognizes as the immutable and 'self-guiding' laws of Nature. Occasionally however, necessary 'Divine adjustments' are made from *within* as Newton intuited.<sup>9</sup> Further examples of such 'adjustments' that we can recognize on the physical plane are minute changes over several years in the values of the fundamental physical constants, such as the speed of light, gravitational constant, Planck's Constant, etc. Although some scientists would vehemently argue that such 'changes' are due to experimental error of measurement, there is mounting evidence that this is simply not the case—see Section 9 for a fuller discussion. It is because Western science has singularly failed to appreciate the significance and ramifications of this 'encoded memory' of the Divine Plan in each Point (extending from the Bindus right down to 'physical' atoms and particles), that scientists either have to invent an external anthropomorphic 'God' who constantly or infrequently (depending upon which scientific preference is in vogue) interferes with His creation; or amongst those who are atheists, resort to natural selection—the newly-invented God (blind of course) of materialistic biology<sup>10</sup>—the source of that selection process being probability and statistics.

---

9 '... blind Fate could never make all the Planets move one and the same way in orbs concentrick, some inconsiderable Irregularities excepted . . . and which will be apt to increase, till this System wants a Reformation. Such a wonderful Uniformity in the Planetary System must be allowed the Effect of Choice'—Sir Isaac Newton, *Opticks*, Dover Publications, 1979, p. 402. Contrast these lofty thoughts with what follows below!

10 As one of literally dozens of examples of letters from scientists, the following appeared in *The Guardian* newspaper on 25th September 1996: '... does the natural order suggest a designer? A designer cannot precede order—being, in fact, itself a form of order. Order, of some kind, must therefore be in the nature of things. As the universe displays both order and disorder, there is no logical need for a cosmic designer'. This extract shows yet again the current popular notion (scientific and religious), of 'God' as an independent, anthropomorphic Designer/Creator who 'creates' His Universe as the carpenter fashions his chair, which man-invented (or lower-mind invented) notion, as previously explained, is illogical and ludicrous.

## MAHAKASHA\_AKASHA (GREAT SPACE\_SPACE)

Associated with the Mahabindu is its opposite limit, Mahakasha, Great Space, as the ultimate Principle of Space residing in the unmanifest (note: *Principle* of Space, not just Space—Maha- denoting the highest principle). Thus the same Reality is characterized by two aspects: the infinitely small, and the infinitely large—Mahabindu and Mahakasha, respectively. The counterpart of Mahakasha in the manifest is Akasha—the ultimate expansion of Bindu. We can intuitively understand that any Point must, by its very concentrated nature, want to expand. For example, an initial covetousness can develop into an all-consuming possessiveness. More productively, seed thoughts of compassion planted in the mind from reading sacred scriptures can ‘grow’ within oneself into acts of service for mankind; and the finest example is the formation of a ‘nucleus of the universal brotherhood of humanity’,<sup>11</sup> which *nucleus* must expand to encompass a love of entire humanity at heart. In all such cases, that which was concentrated into the Point fills its expanding ‘Space’.

---

**Infinite Space is the ultimate expansion of the dimensionless Point.**

---

The nature of Space, and how Time arises are treated in greater depth in due course.

## Mahakala\_Kala (Great Instant of Time\_Instant of Time)

Kala is an elusive term with a wide range of interpretations. The basic meaning however is the differentiated forms *in time* of any principle in the realm of manifestation, (the principle existing, as always, in an integrated form as Shabda and Nada, in the unmanifest and manifest states, respectively). Referring again to Figs. 7.1 and 7.2, a principle (analogous to white light) is differentiated into its corresponding spectrum of Kalas (spectrum of colours) by the differentiating action of the Point (refracting prism).

---

**The differentiated forms in time (Kalas) of every principle (Tattva), spring into manifested ex-istence only when the ‘Sound’ (Shabda\_Nada), embodying these principles in the unmanifest manifest state moves through a Point (Mahabindu\_Bindu).**

---

Now Kalas in manifestation have their counterpart in the unmanifest as Mahakala—the ultimate Principle of time. The different time measures of different planes of ex-istence are the Kalas of Mahakala. This is taken up further below.

But note that Kalas are not just restricted to the notion of time as commonly understood. In another sense, the collective Solar Logoi, or Third (Manifest) Logos are the Kalas of the Cosmic Logos, or First (Unmanifest) Logos—the Logoic Principle resident in the ever-unmanifest. This accounts for the perfect harmony of the Cosmos (by no means purposeless or callous as some scientists would argue), since the innermost consciousness of all the trillions of solar systems are in ‘borderless touch’ and

---

11 The First Object of The Theosophical Society.

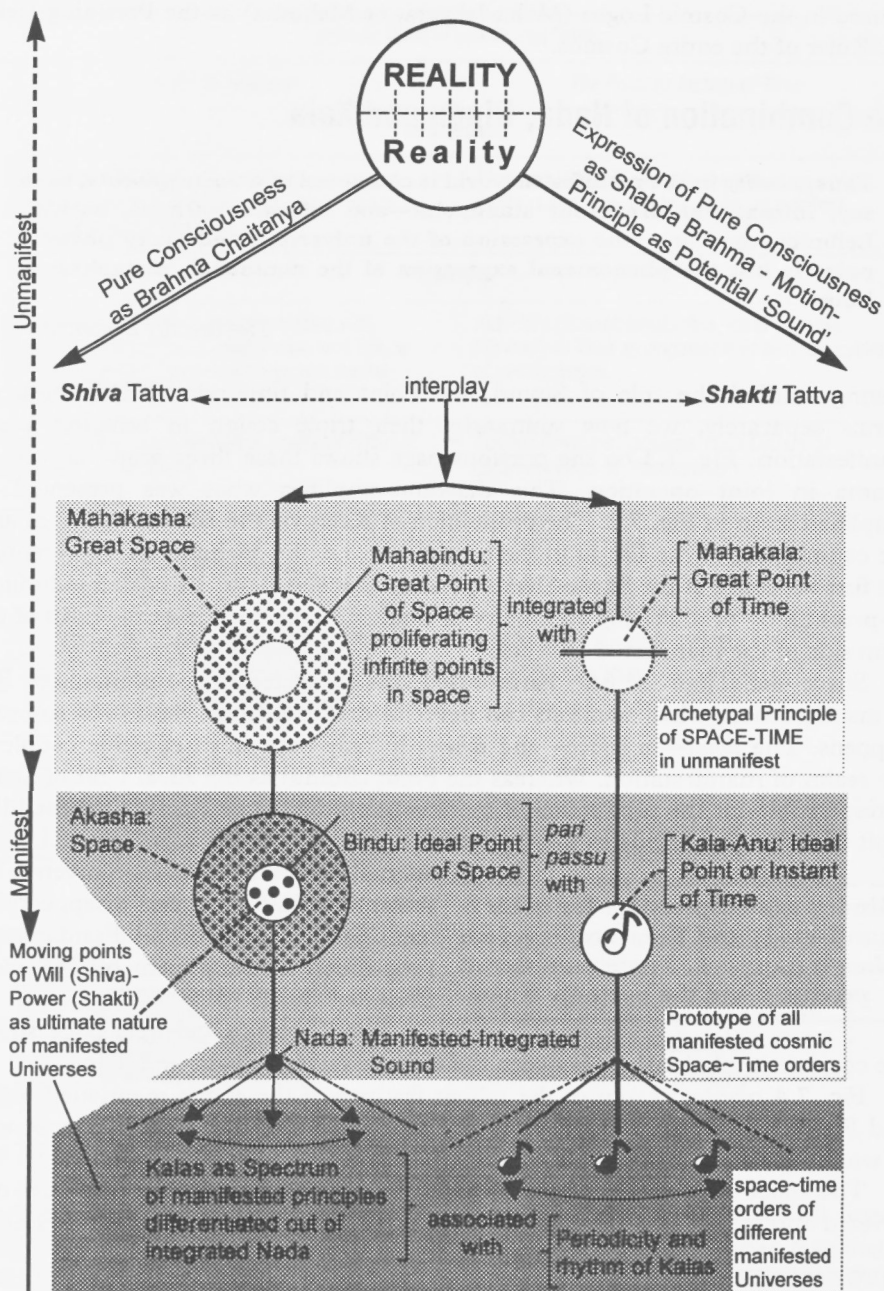


Fig. 7.3 The Space-Time Fabric of the Cosmos

centred in the Cosmic Logos (Maha-Ishvara, or Mahesha) as the Presiding Deity and Ruler of the entire Cosmos.<sup>12</sup>

## The Combination of Nada, Bindu and Kala

Thus, *reality* in the manifested world is composed of a *unity of units*, so to say, immaterial—from our standpoint—and infinite. With us, as with Leibnitz, they are “the expression of the universe,” and every physical point is but the phenomenal expression of the noumenal, metaphysical Point.

THE SECRET DOCTRINE<sup>13</sup>

Having studied the role of Sound, the Point and time-related Differentiated Forms separately, we now summarize their triple action in bringing about manifestation. Fig. 7.3 on the previous page shows these three grand aspects of Krama in joint operation. This diagram amplifies what was presented in simplified form in Fig. 7.2. The production of Kalas via the Bindu is seen, as also the counterpart of the Bindu in the unmanifest, i.e. the Mahabindu, representing the first outcome of the Shiva-Shakti polarity. It is seen how the Mahabindu finds ex-pression by proliferating an infinity of Bindus, which constitute the basis of the form side of the manifested Universe.

Space and Time are fully harmonized and integrated in the unmanifest. But in manifestation, what manifests can never be divorced from when such an event happens. The *what*—in space—and *when*—in time—are an inseparable couple in the realm of manifestation. Whereas the Point (Bindu) as the Ideal Unit of Space is responsible for the production of manifestation, Ksana or Kala-anu is the Ideal Unit of Time that regulates the rhythm of manifestation<sup>14</sup> as that periodicity and

alternation of ‘numberless Universes incessantly manifesting and disappearing,’ mentioned in the Second Fundamental Proposition in the Proem of *The Secret Doctrine*.<sup>15</sup>

---

**Bindus are responsible for *what* is manifested; and Kala-anu regulate *when* it happens. Their manifested products are the periodic Kalas.**

---

The Table on the next page shows the coexistent relationships between the Cosmic units of Space and Time.

Fig. 7.4 overleaf captures the salient features of the above mentioned Table and Fig. 7.3, in order to highlight how Space and Time weave the fabric, or web of worlds at all levels of manifestation.

The space-time fabric of the physical universe that modern science has discovered and formulated through the general relativity theory of Einstein is seen to

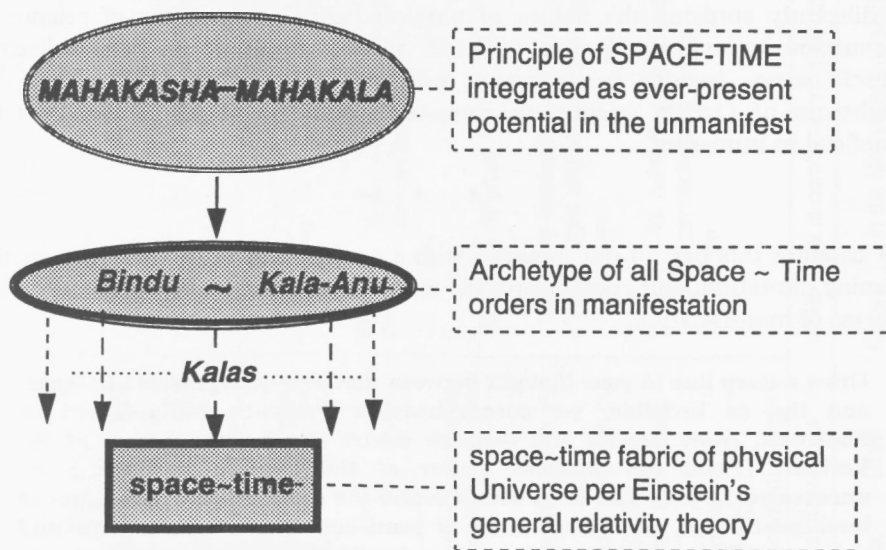
12 Adapted from I. K. Taimni, *Science and Occultism*, The Theosophical Publishing House, 1987.

13 *SD-2*, pp. 354–5.

14 We need not labour the point. Any phenomenal event, whether it be the construction of the Taj Mahal or the Channel Tunnel, or the writing of a book, or the uprising and downfall of an empire, or the birth and death of the smallest insect, human being, or largest galaxy, is always associated with a unique time event or period. Therein lies one of the cues to a proper grasp of the true *science* of astrology, of which esoteric principles orthodox ‘science’ has not a clue.

15 *SD-1*, p. 82.

Cosmic Units of Space and Time	
The Point of Space	~ The Point or Instant of Time
<b>Unmanifest</b>	
<i>Mahabindu/Mahakasha</i> : Great Point, associated with Great Space, as highest Principle of Space resident in the unmanifest.	<i>Mahakala</i> : Great Time as highest Principle of rhythms and time resident in the unmanifest.
<b>Manifest</b>	
<i>Bindus/Akasha</i> : Ideal Points, associated with Space, being irreducible, ideal measure of Space as Centres of Consciousness to project mental worlds into manifestation.	<i>Kala-Anu (Ksana)</i> : Irreducible, ideal Instants ('Points') of Time as origination of periodic cycles of manifestation.
<i>Cosmic Space</i> : governs Space orders of different planes of manifestation	~ <i>Cosmic Rhythms</i> : governs Time Orders of different planes of manifestation



**Fig. 7.4** Space and Time Constitute the Weft and Warp of the Fabric of the Cosmos

be one of the many 'downwards' projections from the *archetype* of all Space~Time orders in manifestation, i.e. the Bindus associated with Ksanas resulting in the Kalas. This archetype has its counterpart as Mahabindu/Mahakasha integrated with Mahakala, as the ultimate Principle of SPACE~TIME, a potential ever-present in the unmanifest. Note however that when Einstein declared space to be relative, he referred to the physical *dimensions* of space that are relative. Space in itself, as vibrant Energy-Substance, is certainly **not** relative—the dimensions of Space are not the same as Space by itself.



## Partial Scientific Corroboration

Can science demonstrate some of the abstruse Occult principles expounded above? Yes, albeit partially. Fig. 7.5 shows the Occult principles involved in manifestation along with optical and mathematical examples that serve both, as an analogy to the former, and also to illustrate the same principle operating at different levels on the basis of 'as above, so below'. It is seen how the Point (Bindu) differentiates any integrated principle, as a prism refracts light, or fine water droplets produce a rainbow (the literal Sanskrit meaning of Bindu is a 'drop' or 'sphere'). Because the Ideal, or mathematical Point is of zero dimension, it transcends all limitations of dimension, hence provides the common junction and entry to all worlds of dimension. Subatomic particles and atoms are examples of *moving* Points in the physical world. These physical particles in fact are the clothing and vehicle of the infinite Points which serve as the centres of expression for the former. In the example of the calculus shown in Fig. 7.5, the differential operator acting upon an (integrated) function produces differentiated products.

Fig. 7.5 also shows the close relationship between consciousness and light. By so diligently studying the nature of physical light,<sup>16</sup> the corpus of science is unconsciously and unbeknown to itself, striving to uplift its own collective consciousness, besides being drawn willy-nilly into, what HPB called the maelstrom of Occult Science, the long-term outcome of which can only be beneficial to humanity.

\* \* \*

Let us close this part of our inquiries with a excerpt that both complements the opening quotation, and encapsulates the essential teaching on the mechanism and process of manifestation.

**Draw a deep line in your thought between that ever-incognizable Essence, and the as invisible, yet comprehensible Presence Mûlaprakriti or Shekinah, from beyond and through which vibrates the Sound of the Verbum [Point of conscious power at the Cosmic awakening, or unrevealed Logos], and from which evolve the numberless Hierarchies of intelligent Egos, of conscious as of semi-conscious, *apperceptive* and *perceptive* Beings, whose Essence is spiritual Force, whose Substance is the Elements, and whose Bodies (when needed) are the *Atoms*—and our Doctrine is there.**

THE SECRET DOCTRINE<sup>17</sup>

We continue by unlocking a few more of the secrets of space and time.

<sup>16</sup> The close relationship between light and consciousness is only too well known to mystics of both East and West. In India Ramana Maharshi would gaze at the noonday sun with unflinching eyes for hours; and England's greatest mystic and Occultist Sir Isaac Newton, would stare at the sun for long periods using a looking-glass. *Both were confronting face-to-face, the physical embodiment of the Deity, Sun-Light.*

<sup>17</sup> SD-2, p. 354.



Principle of Occult Science	Analogies from Western science	
	Physical Light	Mathematics: Calculus
<p>Shabda: Unmanifest Motion-Principle as Potential 'Sound'</p> <p>Mahakala: Potential Kalas</p> <p>Mahabindu: Great Point</p> <p>Bindu: Ideal Point</p> <p>Nada: Manifest-Integrated Sound</p> <p>Unmanifest</p> <p>Differentiated Products in Manifestation</p> <p>Kalas as spectrum of manifested principles differentiated from Nada</p> <p>Ideal (mathematical) Point, Bindu is both the:</p> <ul style="list-style-type: none"> <li>• interface, or boundary between the Unmanifested-Integrated and manifested-integrated states; and</li> <li>• instrument for dispersing an integrated principle into <i>corresponding</i> differentiated states.</li> </ul>	<p>Invisible White Light</p> <p>White Light=Nada</p> <p>Raindrop or Prism=Bindu</p> <p>Visible Colours</p> <p>Spectrum of colours refracted from white light=Kalas</p> <p>Raindrop, or prism is both the:</p> <ul style="list-style-type: none"> <li>• boundary between the invisible White Light and visible coloured lights; and</li> <li>• medium for refracting White Light into its corresponding colour spectrum.</li> </ul>	<p>Bindu Nada Kalas</p> <p><math>\frac{\partial}{\partial x}</math> is the differential operator, = Bindu</p> <p><math>Z (\neq \frac{\partial Y}{\partial x})</math> is product of such differentiation as the differentiated forms of Y, =Kalas</p> <p>Y is the original integrated state that was differentiated, = Nada</p> <p>Thus integrated state Y (Nada) has been differentiated by <math>\frac{\partial}{\partial x}</math> (Bindu) into corresponding forms Z (Kalas).</p>
Unmanifest " = " $\int$ all manifestations as	White Light is combination of all colours or	$Y = \int \frac{\partial}{\partial x} X \dots$

**Fig. 7.5** The Role of { Nada, Gods, Bindu, Monads, Kalas, Atoms } in the Mechanism of Manifestation and the Especial Significance of the Point

## DUALITIES IN NATURE – THE FABRIC AND FORM OF THE COSMOS

**KEYWORDS:** Raw fabric, form, Space~Time duality, Energy~Matter duality, Shiva~Shakti, consciousness, discontinuities

**FATHER-MOTHER SPIN A WEB, WHOSE UPPER END IS FASTENED TO SPIRIT, THE LIGHT OF THE ONE DARKNESS, AND THE LOWER ONE TO ITS SHADOWY END, MATTER; AND THIS WEB IS THE UNIVERSE SPUN OUT OF THE TWO SUBSTANCES MADE IN ONE, WHICH IS SVABHĀVAT [plastic essence of world-substance].**

*THE SECRET DOCTRINE*<sup>18</sup>

There are two fundamental dualities in Nature as explained below along with a simple physical analogy:

Occult Principle – Fabric and Form of Cosmos	Physical Analogy of a Cloth Garment
Space~Time duality: 'raw fabric' (web or stuff) of Cosmos	raw material as the cloth
Energy~Matter duality: form of Cosmos	cloth shaped into clothing or garment

As shown in Fig. 7.6 below, *every* duality in Nature (manifestation) is rooted in, and therefore reflects and expresses, to some degree, the primary duality of Shiva~Shakti, but with the Consciousness-component and Power-component in different proportions.

Space and Time constitutes the fundamental duality in manifestation. Space is the basic, or cardinal member, and Time the subordinate member of this duality. Energy and Matter constitute the secondary duality, being the product (in manifestation) of the former—a garment cannot be shaped (Energy~Matter) until the raw fabric is first woven (Space~Time). Energy is the cardinal, and Matter the subordinate member of this duality.<sup>19</sup> These assertions will become clearer as we proceed.

<sup>18</sup> SD-1, p. 148.

<sup>19</sup> In terms of the calculus notion: Spirit '='  $\partial$  (SPACE); Matter '='  $\partial$  (Spirit); or Matter '='  $\partial^2$  (SPACE). As always, such quasi-mathematical notation must not be taken literally, but viewed in a symbolic sense in order to sense the spirit of the argument.

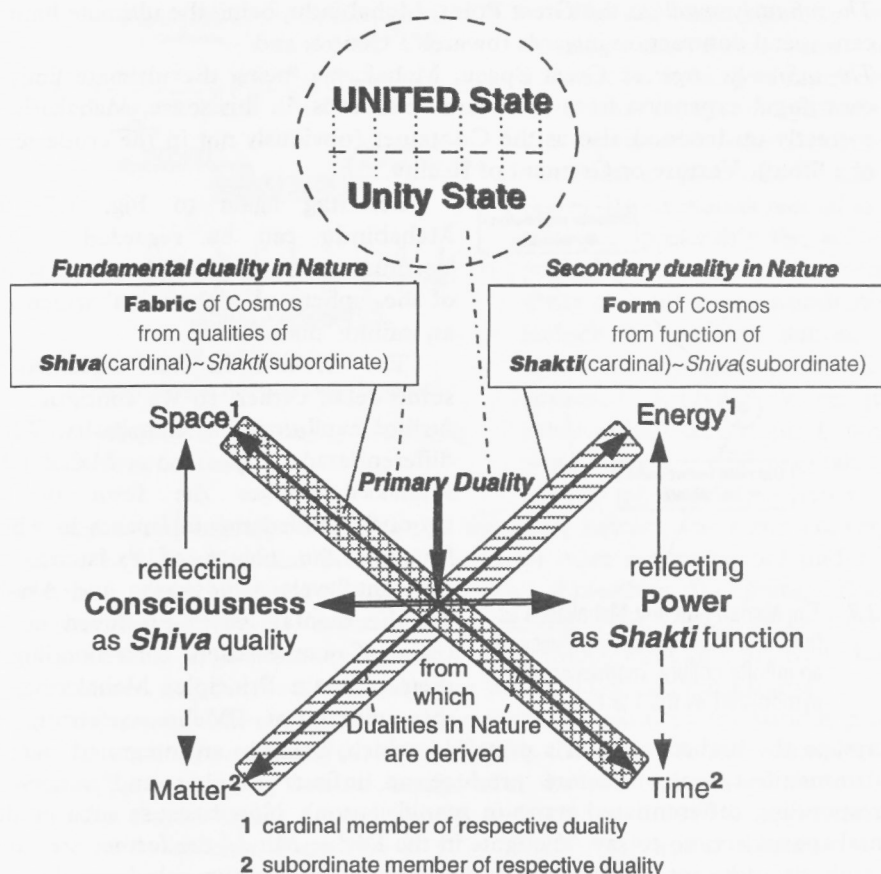


Fig. 7.6 The Fabric and Form of the Cosmos – ‘Spirit is the first differentiation of [and in] SPACE; and Matter the first differentiation of Spirit.’ SD-1. p. 302.

## THE FABRIC OF THE COSMOS – SPACE AND TIME

A Deity that manifests in *Space* and *Time*—these two being simply the forms of THAT which is the Absolute ALL—can be but a fractional part of the whole. . . . *esoterically*, Time and Space are forms of the One *incognizable* Deity.

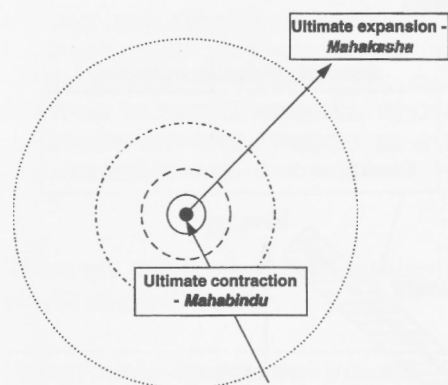
THE SECRET DOCTRINE<sup>20</sup>

### What ‘Constitutes’ Space?

The secret lies in the Point. It was explained earlier that the same Reality can be characterized by two aspects as shown in Fig 7.7 below, viz:

20 SD-3, p. 166 and footnote on p. 381.

1. *The infinitely small*: as the Great Point, Mahabindu, being the ultimate limit of centripetal contraction inwards towards a Centre; and
2. *The infinitely large*: as Great Space, Mahakasha, being the ultimate limit of centrifugal expansion from the Centre outwards. In this sense, Mahakasha is correctly understood also as the Container (obviously not in the crude sense of a 'box'), Vesture or Garment of Reality.



**Fig. 7.7** The Mahabindu and Mahakasha as the Centre and expanding Space of an infinite sphere, mathematically symbolized by the 1 and  $\infty$ .

Referring again to Fig. 7.7, the Mahabindu can be regarded as the 'spiritual centre of gravity' or laya centre of the 'sphere of Mahakasha' which has an infinite 'diameter'.<sup>21</sup>

The Mahabindu was explained in some detail earlier, so we continue with further exploring the Mahakasha. When differentiated by the Mahabindu, Mahakasha takes the form of the variously graded mental spaces in which function the planes of ex-istence on different levels. Chidakasha and Akasha are the mental spaces produced in the realm of manifestation, corresponding to their ultimate Principle, Mahakasha, in the unmanifest (Maha- referring, as

always, to the highest state of a principle, which, being in an integrated state in the unmanifest, can therefore produce an infinite number and variety of corresponding differentiated states in manifestation). Now because such graded mental spaces are, so to say, 'thoughts in the Divine Mind,' the former are, from the higher standpoint, illusory, just as the thoughts in our own minds are illusory; the only reality (relatively speaking) is the (infernally!) thought *producer*, the mind—not the ephemeral and transitory products of the mind.<sup>22</sup>

A simple mathematical analogy may help to clarify the above.

## ILLUSTRATION FROM MATHEMATICS – THE CONVERGENCE OF INFINITE SERIES

The well-known convergence of infinite series is used as a mathematical illustration (not proof)<sup>23</sup> of the meaning behind the Mahabindu and Mahakasha. The number 1 can be represented by a converging, infinite series of several kinds, two of which are shown in Fig. 7.8.

- 21 Big Bang theory also talks about an expanding Universe understood in the literal sense of the Universe expanding from an infinitely small physical point. Although incomplete and restricted only to the physical plane, this theory does nevertheless faintly echo, in materialistic terms, what is an entirely metaphysical principle—the centrifugal expansion of, and from, a Point to what constitutes Space. See Section 9 for a fuller exposition.
- 22 Ramana Maharshi's reiterated counsel to serious students of meditation was to 'trace thought to its place of origin, watch for the real self to reveal itself . . .'
- 23 The writer is well aware that this is no more than an explanation-by-example, which does not involve formal mathematical rigour. Rather it uses the 'spirit of mathematics' to depict *qualitatively* the Occult doctrine concerning the Point and Space.

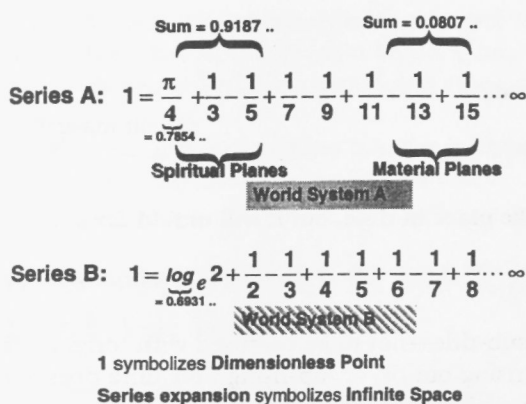


Fig. 7.8 Convergence of Infinite Series Symbolizing the Point and Space

term 'infinite converging series', since at the limit, infinity, the series converges exactly to 1. We realize that the *same* numerical value is represented under *two aspects*: the 1, and its corresponding *infinite series* of numbers. By analogy, Reality is represented under its two aspects of the infinitely small (dimensionless Point) and the infinitely large (limitless Space), i.e. the Mahabindu and the Mahakasha as stated above. But the mathematical series provides two further insights.

We may regard a discrete portion of the series as portraying the various planes of manifestation in a particular world system. In Series A for example, the numbers  $\{\pi/4 + 1/3 - 1/5\}$  would characterize the spiritual planes since these numbers lie closest to the 1, and indeed their sum = 0.9187 .. approximates closely to it. By contrast, the numbers  $\{1/11 - 1/13 + 1/15\}$  would characterize the more material planes because their sum, equal to 0.0807 .., is further from the 1 than the sum of numbers closest to the latter.

Furthermore, Series A and Series B may be regarded as the expansion of the 1 *as* worlds having dimensional characteristics entirely different from each other. Although united in that all these worlds arise from the 1, there can be no communication between such worlds, since their respective space~time orders, i.e. 'grades of substances' would be entirely different, so pertaining to different states of consciousness. This idea of non-communication across a plurality of worlds is a thesis of one of the central interpretations of the two-hole experiment in quantum physics as described in Section 2. It is also fully expounded in the Occult doctrine of globes '*in CO-ADUNITION but not IN CONSUBSTANTIALITY WITH OUR EARTH . . .*'<sup>25</sup> (but more of this in Section 9).

24 This is no indulgence in semantic hair-splitting. Whereas classical science in the main, regarded space as an empty 'box' in which objects and worlds were contained, modern science asserts that the (physically) expanding Universe *is* space-time. The Universe does not expand *into* an (empty) space. The Big Bang theory partially echoes the esoteric cosmology. This is further expanded in Section 9.

25 SD-1, p. 220. These famous, weighty words from *The Secret Doctrine* describe a vast evolutionary scheme in superbly terse and expressive fashion. It means the existence of globes united together, but *not* of the same substance. Imagine a set of beads of different materials strung together on a circular thread. The beads are united as a necklace, therefore in co-adunition, but being of different materials, they are not in consubstantiality.

## The Origination of Time

**Time is the wheel – Eternity the axle**

Occult maxim

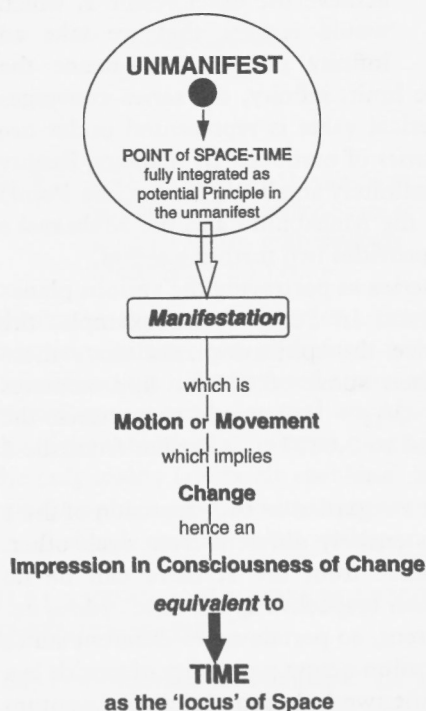
**What really happens does not take place in time, but it will unfold for you in time because you are in time.**

PAUL BRUNTON<sup>26</sup>

The term 'origination' in the above sub-title—not to be confused with 'origin'—is deliberately chosen to indicate an 'arising out of' or 'up-rising', for time does not have an 'origin' as such, except in an arbitrarily defined sense.

What gives birth to time? If the Mahabindu were to say: 'Now I will proliferate Points from Myself,' that *instant* of proliferation would be the Mahakala—from where Time takes its rise as a potential Principle in the unmanifest.<sup>27</sup>

How does Time up-rise? As an aeroplane leaves a vapour trail in the sky, or a subatomic particle a trail in a bubble chamber, *Time is the 'trail', or after-image type of impression left in consciousness by a change in Space, that is, a change of mental image in 'mental space' (Chidakasha)*. This is shown in the adjacent diagram, Fig. 7.9. The Great Point, Mahabindu associated with Great Space, Mahakasha, is fully integrated with Time, Mahakala, and subsumed in the unmanifest as a unified Principle of SPACE-TIME; but they emerge as a 'not-two' or 'Siamese twin' of Space-&-Time upon manifestation. It then becomes apparent that since Time is the impression of change of mental space, Space is therefore the basic or cardinal member, and



**Fig. 7.9** The Origination of Time

<sup>26</sup> Kenneth Thurston Hurst, *Paul Brunton: A Personal View*, Larsons Publications, p. 191.

<sup>27</sup> When Hawking states that questions about time before the Big Bang are meaningless, he is correct in his terms. But he is both inaccurate and unphilosophical in asserting that inquiries about the pre- Big Bang state are senseless for a scientific model—insofar, that is, as scientific models have anything to do with science, which is concerned with the pursuit of Truth, without desires or prejudices. Understanding of this essentially qualitative state assumes far greater significance for the Occultist than quantitative data accumulation on the ever-changing phenomenal Universe—in *abscondito* shadow-worlds indeed, which so mesmerize our modern cosmologists. Refer to Stephen W. Hawking, *A Brief History of Time*, Bantam Press, 1988, p. 46.

Time the derived, or subordinate member of the Space~Time duality. Without (change in) Space, there would be no Time.<sup>28</sup> Space and Time are Nature's way of ensuring that we do not experience all events in the same place and at the same instant!

We continue by inquiring into the joint activity of Space and Time in weaving the fabric of the Cosmos (see Fig. 7.6).

## WEAVING THE FABRIC OF THE COSMOS – THE DUALITY OF SPACE AND TIME

Thus at the roaring loom of Time I ply,  
And weave for God the garment thou see'st Him by.

GOETHE<sup>29</sup>

Brahma; his spirit is enwrapped in himself. He, the mighty one, is present in every part of space . . .

LUDWIG VAN BEETHOVEN<sup>30</sup>

Space . . . alone remains as the vehicle of reality.

EINSTEIN<sup>31</sup>

The above quotations beautifully express the idea of Brahma breathing out, so increasing and expanding, and thereby **becoming** the Cosmos-as-garment **woven out of His very substance**.<sup>32</sup> Let us inquire further into this process of weaving. The principle is illustrated in Fig. 7.10 by analogy with the simple textile weaving process, which like all such depictions must be understood in terms of its underlying meaning and not as a literal simulation.

The Cosmos has to be woven out of something to constitute its underlying substance/energy. That 'something' is Space and Time, constituting the Weft (Woof) and Warp of the *fabric* of Universes on any plane. Goethe's celebrated

28 Without overdoing the fact, this provides one of the keys to the alarming problem people experience in middle age when time seems to fly past at an almost exponential rate; what previously felt like years now seems to be compressed into months. The secret lies in slowing down the generation of mental images, for the further we move outwards from the Eternally still axle of the wheel of Time, the more we experience the grating movement on the circumference. There is no doubt that as children we lived more in the here-and-now present, less burdened by an ever-increasing flurry of mental activity, leaving as its 'trail' the impression of a speeding up of time. The solution lies in meditation. Done correctly, although we must *grow* physically older with time (the unavoidable biological fact), we need not psychologically *feel* old!

29 Also quoted in SD-1, p. 148. Whereas Goethe is justly revered as a great poet, his contributions to science are unjustly neglected. Of especial significance are his treatises on light.

30 Beethoven's deep forays into Eastern literature are cited in *Thayer's Life of Beethoven*, ed. Elliot Forbes, Princeton University Press, 1970, pp. 480–2. His friendship with Goethe might have spurred his interests in this metaphysical direction.

31 A. Einstein, quoted by R. Thiel, *And There Was Light*, 1958, p. 345.

32 Yet again it must be emphasized that 'God' or Brahma, etc. does not 'create' a Universe—the general concept of orthodox religionists and scientists (amongst those who are not atheists); rather the Cosmos as the outward expansion and projection of His Being, is His garment made from His own substance, as a spider's web is made, not from external materials with the spider as 'creator', but from the secretions of the very spider itself.



	Physical Analogy – Textile Weaving	Relation to Shiva-Shakti	Occult Principle – 'weave for God the garment'	
<b>Apparatus</b>	Textile loom		'the roaring loom of Time'	
<b>Intended Purpose</b>	To weave a textile		To weave Universes	
<b>Two fundamental processes required for such weaving are:</b>				
<i>Firstly:</i>	To organize process as a whole	Define boundaries and extent of textile and provide it with structural stability as a whole	Static <i>Shiva</i> quality	Define the field of limitation and organize, control and regulate the overall Universal process of manifestation
<i>Agency</i>	Weft (Woof) to consolidate textile			Space to limit and organize the Cosmos
<i>Instrument</i>	Transverse yarn in loom			Sound – a property of Akasha
<i>Secondly:</i>	To produce raw material	Then to fill out the textile boundaries so delineated with the fabric material	Dynamic <i>Shakti</i> function	Infill the limiting Space or 'field' so created with raw material
<i>Agency</i>	Warp to fill out textile			Time to 'fill out' Space so delineated
<i>Instrument</i>	Longitudinal yarn in loom			Light – a property of Taijas (itself derived from Akasha)
<b>Outcome</b>	Woven fabric or textile from interlaced weft yarn and warp yarn	Combined <i>Shiva~Shakti</i>		Fabric of the Cosmos from 'woven' Space-Sound and Time-Light

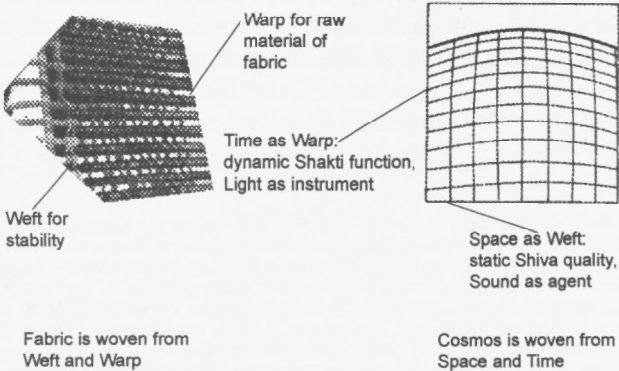


Fig. 7.10 Basic Principle in Weaving Fabric – Textiles or the Cosmos

verse is pregnant with meaning. Note carefully his choice of words. For we never see 'God' directly, but only his (woven) *garment*—what we call manifestation as Universes.<sup>33</sup> With similar attention to words, Einstein refers to Space not as reality, but as the 'vehicle of reality'. Fig. 7.10 and its associated Table on the previous page show that to weave a textile, we need first to delineate the boundaries of the textile and then fill in with the fabric material. Similarly, the fabric of Universes is 'woven' from Space as the static, stabilizing Weft, and Time as the dynamic, infilling Warp. The weft and warp of textile are both constituted of discrete yarn (or threads, fibres, etc.), but the woven product presents the appearance of continuity; similarly Space and Time as the Weft and Warp of the fabric of Universes are both discontinuous in manifestation, but appear as a smooth Space-Time continuum. Furthermore the weft and warp of textile are both made of the same material, i.e. yarn, which fulfils different functions. Similarly, Space and Time both derive from the One Reality, which fulfils the requisite functions (with associated agencies and instruments) in order to manifest Itself. Pull out the weft from a piece of fabric and the warp falls to pieces—eliminate Space, and Time disintegrates. This is the reason why it was mentioned earlier in Fig. 7.6 that Space was the cardinal member, and Time the subordinate member of the Space~Time duality. It may also be what Einstein meant when he declared the quintessence of his world-view in the words 'Space has devoured ether and time . . .'.<sup>34</sup>

## Shiva and Shakti – the Role of Sound and Light

From the above, it follows that:

- Space as the Weft of the Cosmos corresponds with the static, organizing and stabilizing quality of Shiva, which Shiva-derived quality is actuated through the agency of Sound for *self*-limiting, regulating and controlling the field in which manifestation is to occur;
- Time as the Warp of the Cosmos<sup>35</sup> corresponds with the energetic, dynamic production function of Shakti, which Shakti-derived function is actuated through the instrumentality of Light as the raw material of Universes. But note that this raw material does not become a 'fabric' until first organized by the weft. Without the latter we would have only a pile of loose warps, not a fabric.

This association of the Shiva-derived Space quality with Sound, and the Shakti-derived Time quality with Light may come as a surprise, but this will soon become clear when the roles of Sound and Light are explained in greater depth in

<sup>33</sup> Therefore, our modern savants who claim to be investigating and unravelling the 'mind of God' would do better to probe into their own minds to discover the arrogance and philosophic naiveté of such 'investigations'.

<sup>34</sup> A. Einstein, *loc. cit.*

<sup>35</sup> Indeed the popular term 'time warp' is apt, indicating a transference to different realms of manifestation associated with different orders of space and time.

Section 8. At present however, note that Sound precedes, and so plays a higher and more fundamental part than Light in the order of manifestation. But this does not mean that Shiva occupies a higher role than Shakti. For as repeatedly explained, Shiva and Shakti are a primal polarity subsumed in the unmanifest as co-equal and integrated Principles. But *for manifestation to occur*, (from the plane of emanations—the Unity State), their associated agencies ‘click in’ at different stages with Sound at a ‘higher’ stage than Light. [Terms such as ‘higher’ are much prone to misunderstanding. By higher, we do not mean greater as opposed to lesser, in a judgmental sense, but a logical, hierarchical order of precedence in terms of a sequence of derivation, in the same way as in any institution, the overall policy plan and organization must necessarily be established by the director, before any useful production can be undertaken by the workers. Of course the director and workers are all equally important: without workers there would be fine plans but no *manifested* product, and without obedience to the director’s *word* (a clear allusion to the role of sound), chaotic output, but not organized production. However, the director’s role is higher and more fundamental.]

## Discontinuities in Space and Time

**Time and Space are divided by the same and equal division.**

ARISTOTLE<sup>36</sup>

This is a notable fact, the import of which has barely received any consideration in scientific circles (not surprisingly, since Western science as repeatedly mentioned, is more often concerned with the mechanistic behaviour and utilization of the subject of its investigations, and less with its essential nature and origin). It is worthwhile to examine, in some depth, how and why discontinuities in Space and Time are fundamental to their role in the mechanism of manifestation. We use the example of cinematography to demonstrate the above from the physical standpoint, hence as an analogy for the Occult principle on the basis of ‘as above, so below’.

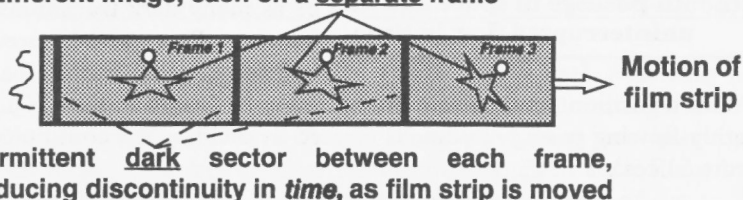
### CINEMATOGRAPHY AS PHYSICAL ILLUSTRATION ON ROLE OF DISCONTINUITIES FOR MANIFESTATION

In the last section, we used the example of cinema pictures to illustrate the metaphysical principles that underpin the whole question of manifestation in general. We now examine the importance of discontinuities, in the actual mechanism of manifestation. We said earlier that cinema pictures, apparently real and objective, have no reality in themselves. When the romantic show is over, only the blank, white and viewless screen remains. Nevertheless during the actual film production, by what means are pictures produced, such as the rotating star shown, as an example, in Fig. 7.11? The optical illusion of continuity and

36 Communicated to the writer by Dr. A. M. Davie, DSc., whose ancestor was Sir Isaac Newton.

movement is produced by (1) an intermittent sequence of (2) different, (3) still photographs, projected on a screen in rapid succession. The transition between each still picture, or frame is so rapid that the eye and brain of the observer 'irons' out the discontinuities into an illusion of a smooth-flowing manifestation in space and time. In order that each individual frame may be projected as a succession of static images, the transition between one frame and another is made to coincide with the interposition of a light-excluding shutter in the projector.

**Discontinuity in *space* as film strip is moved, produced by different image, each on a separate frame**



**Fig. 7.11** Movement of Separated Images with Intermittent Dark Sections Producing Cinema Pictures

Now these mechanical necessities of cinematography are underpinned by three general requirements needed to create the illusion of coherent images (manifestation), namely: (1) a serial presentation of images; (2) differentiated images; and (3) discontinuities in both space and time. Let us examine these three factors, referring again to the example of Fig. 7.11.

### **Moving Images**

It is obvious that unless the images on the film strip are sequentially presented, i.e. moved in sequence across the projector lens, we would not see a rotating star, only a static picture of any one frame.

### **Differentiated Images**

If all frames had exactly the same image (as, say, on Frame 1), then even if the film were moved across the projector lens, we would still not see any motion, i.e. a rotating star, but only one picture of a star, which would appear entirely static. Differentiated images, that is, different and discrete images on the moving strip, as Frame 2, Frame 3, etc., are required to produce the illusion of rotation.

### **Discontinuities in Space and Time**

*Discontinuity in **space***: in order that the differentiation of images mentioned above can occur, each different image must necessarily be on a separate frame (for there is no way they can all be crammed into one frame). This separation of different images on separate frames constitutes a discontinuity of images in space. It is necessary to break up the uniformity of space into discrete 'pieces' of space in order to create the illusion of continuous manifestation in space.

*Discontinuity in time*: because if the film strip with different images, each on a separate frame, were moved smoothly, the result would not be a sharp picture, but a wash of visual blur.<sup>37</sup> In order to see a rotating star, each frame must be moved intermittently and therefore separated from adjacent frames by a dark transition (the intermittent, light-excluding shutter of the projector). Without

---

**It is a paradox that discontinuities in space and time are needed to produce the illusory impression of objective reality, or manifestation, regarded as a smooth passage in space and an uninterrupted flow in time.**

---

such dark transitions (of which the observer is consciously unaware), both ends of adjacent frames would overlap the field of view, resulting in an indistinct picture. There must obviously be as many dark transitions as there are frames. This serial presentation of individual, *static* frames, each separated

by a dark transition constitutes a discontinuity of images in time. The illusion of a smoothly-flowing passage in time is created by dividing the continuity of time into separate 'slices'.

### **Further Insights – From Pictures to Music**

The picture (visual manifestation) is the result, in essence, of an interplay between light and darkness. Music—an aural manifestation—is the result of an interplay between sound and silence. In music, the rests, or silences, between the sounded notes play a similar, but much more significant role, to the intermittent, dark transitions in cinematography. For unlike the latter, the silences in music tend to be more extended in time, so *are* apprehended by the listener. Furthermore, the silences in music also have an architectural feature in themselves and so do much more than just separate one sound from another—almost any great musician will confirm that the true art of composition and performance lies more often in the delicate manipulation, and subtle quality of the silences, than in the sounded notes.

### **OCCULT PRINCIPLE REGARDING DISCONTINUITIES IN SPACE AND TIME**

As with cinema pictures, or music, so in a general sense, manifestation is the result of Motion, differentiation and discontinuity as shown below.

---

<sup>37</sup> Apart from obvious differences in details, the same *principle* of discontinuity between a moving sequence of differentiated items applies to a video or audio tape; in fact whenever something is made to assume an appearance of objectivity.

In order for manifestation to occur, there must be:

---

**Motion, Differentiation and Discontinuity in Space and Time**

---

*Points of Space* responsible for  
different, discontinuous mental images,  
reflecting -

Static *Shiva* quality

*Instants, or Points, of Time* responsible for  
discontinuity in movement of mental images,  
reflecting -

Dynamic *Shakti* function

---

***Their joint interplay produces the illusion of  
phenomenal and objective Worlds***

(refer also to Figs. 6.5 and 6.6)

---

How are discontinuities introduced in Space and Time? Referring to the above table, recall that manifestation can only be actuated through the Great Point, Mahabindu, which acts as a Centre for re-producing, precipitating and proliferating an infinite number of Ideal Points, Bindus. Each such Point has (a) mirrored, or 'breathed' into it the Whole, but in different degrees of clarity;<sup>38</sup> and (b) is in itself separate and distinct—therefore a discontinuity in Space. Although these infinite Points are illusory *from the ultimate standpoint* of the Real, the *motion* of such distinct Points provides the basis of mental images constituting what is known as manifestation and the objective reality of phenomenal worlds.

What applies to discontinuity in Space applies equally to its Eternal partner, Time. In the unmanifest, Mahakala is fully harmonized and integrated with Mahabindu/Mahakasha as the potential Principle of SPACE-TIME (see Figs. 7.3 and 7.4). Therefore the Mahakala acts as a Centre for spawning Kala-Anu, or Ksanas, which are the instants ('Points') of time in manifestation.

How, in manifestation, do such moving, distinct Points, discontinuous in Space and Time provide the basis of mental images? In similar fashion to moving images on a film strip, imagine that each separated frame was equivalent to a (distinct) Point, the intermittent movement of which would create mental images instead of physical cinematic pictures. Accordingly, the manifested Universe is 'at

its ultimate basis, nothing but a phenomenon of moving points or ideal centres in consciousness endowed with energy.'<sup>39</sup> Further examples can be cited from ordinary life and more technically, from Western science to illustrate the role of Points in motion for bringing about manifestation.

---

**Both Space and Time are fully  
integrated in the unmanifest and  
therefore incapable of producing  
phenomena unless divided into  
'pieces' of Space and 'slices' of Time  
as Occult Science expounds.**

---

<sup>38</sup> For such reasons *The Secret Doctrine* states that 'The Adept, therefore, may read the future in an Elemental Monad, but he has to draw together for this object a great number of them, as each Monad represents only a portion of the Kingdom it belongs to . . . A number of Monads could represent simultaneously the thoughts of the two million inhabitants of Paris.'—SD-2, p. 356.

<sup>39</sup> I. K. Taimni, *Science and Occultism*, The Theosophical Publishing House, 1974, p. 160.

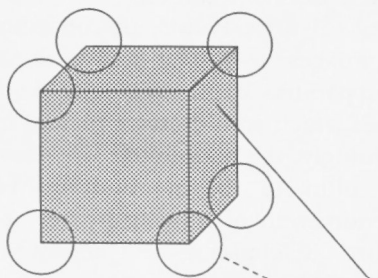
## FURTHER SUPPORT FOR OCCULT SCIENCE FROM WESTERN SCIENCE REGARDING DISCONTINUITY

Cinematography was used as an example, both to illustrate the importance of discontinuities in the mechanism of manifestation, and also to show how Occult principles are re-presented and re-enacted at the physical level. It is worth presenting further such examples in order to highlight an important aspect of our overall theme—that there is no irresolvable dichotomy between Western science and Occult Science, once it is realized that the former is a subset of the latter and bounded by the physical plane only, which can, nevertheless, supply useful evidence and support for the general meta-physical principles at work.

### Examples from Ordinary Life

A picture on a television screen is produced by the rapid tracing of a point (i.e. the tip of the electron beam emitted by the cathode-ray tube) on the photo-phosphorescent screen. Likewise, the individual blades of a rapidly revolving fan appear (manifest) as a solid disc. (Of course each blade is not a 'point', but the principle is just the same—that of movement of something discontinuous to produce the impression of continuity and objectivity.) Now if we shine light from a stroboscope onto the revolving fan (the pulse rate set equal to the frequency of rotation) then the actually rotating blades would appear stationary to our eyes, but not to our fingers accidentally inserted into the path of the blades. *Can ultimate verities therefore, ever be cognized through our physical senses, least of all when one sense contradicts the other?*

### Atomic Nature of Solids



Vibration or movement of atomic 'points' creates illusion of continuity and solidity of an object; and the atom *itself* is mainly vast space!

**Fig. 7.12** A 'Solid' Object is Mainly 'Empty' Space

Atomic physics has shown that an apparently solid and continuous object is really a 'space lattice' of atoms separated by vast distances, as shown in the notional representation of Fig. 7.12. Furthermore, such atoms themselves are substantially 'empty space';<sup>40</sup> but the vibration, i.e. movement, of these 'atomic points' creates the impression of continuity and solidity, because our physical senses cannot perceive the interstices between atoms and their constituent particles.

This example shows how Western science has demonstrated on the physical plane the Occult doctrine on the (1) movement of (2) Points with (3) dis-

<sup>40</sup> For some idea of relative scale, if an atom were the size of the dome of St. Peter's Cathedral in Rome, the nucleus would have the size of a grain of salt in the middle of the dome, and electrons would be minute specks of dust whirling around the extremities of the dome (see Fritjof Capra, *The Tao of Physics*, Fontana/Collins, 1975, p. 68). Whoever said the material world was solid!



continuities, as necessary factors for manifestation. For what is an atom, if not a *Point in Motion*—the lowest member of the tripartite family of Gods, Monads and Atoms, or Mahabindu, Bindu and Atoms. Of course the atom itself is constituted of, and the resultant, so to say, of the combined motion of more fundamental Points, i.e. subatomic particles. But ultimately it is from 'ideal points in motion' that the atoms are elaborated, step by step, in their infinite variety by different permutations and combinations [of moving points]. The arrangements and movements of such points can account for all the phenomena of sense-cognition even on the basis of scientific knowledge concerning the structure of the atoms of the physical plane.<sup>41</sup> We are told by trained Occultist that all this becomes plain knowledge, once consciousness is freed from the crippling hindrance of having to function at the physical level—the lowest plane of the Universe.

### Geometry

It was explained in Section 5 how a *line*—one-dimensional, therefore invisible, and hence a purely mental concept—was produced by the movement of discrete, invisible points; a *plane*—two-dimensional, invisible, and still a mental concept—by the movement of discrete, invisible lines; and finally a *solid*—three-dimensional, therefore visible—by the movement of discrete, invisible planes. The solid—continuous, visible and tangible to our physical senses—nevertheless takes its rise from the movement of an infinite number of discrete, or non-continuous Mathematical Points—invisible and dimensionless—hence an entirely mental concept.

It is also worth reflecting that in any mathematical function (however complex), that can be drawn in any co-ordinate system as a curve, the latter is an integration of an infinity of (dimensionless) Points each of which (a) has a specific position with unique co-ordinate values; and (b) bears, like a hologram, the impress of the whole mathematical function, such that the shape of the curve is conserved. The correspondence with the Bindus (Monads) is obvious. Each Monad reflects the whole (analogous to the mathematical function), but each also reflects in a unique way some or other aspect of the whole, to a greater or lesser degree of distinctness.

It becomes obvious that the essential nature of the so-called material world of

---

**The fundamentally mental nature of the world as asserted by Occult Science since time immemorial is finding increasing corroboration from Western science, especially from quantum and particle physics.**

---

objects is purely mental, because the motion of distinct Points, mental in origin, is a fundamental requirement for manifestation, in terms of what our physical senses experience as material solids in the world of objective phenomena.

The general modern term for such discrete, or non-continuous properties of Nature is Quantum, and although, strictly speaking, Western science has discovered the quantum action on the physical plane with respect to energy and the other forces of physical Nature (such as gravity), the quantum *principle* also

---

41 Taimni, *loc. cit.*

applies at more fundamental levels to Space and Time and is a basic requirement in the mechanism of manifestation.

We inquire now into the secondary duality in Nature shown previously in Fig. 7.6.

## THE GARMENT OF THE COSMOS – THE DUALITY OF ENERGY AND MATTER

KEYWORDS: Substance, Matter, matter, Elements, emanation, discontinuities

**To occult science, *force* and *matter* are only two sides of the same substance.**

THE SECRET DOCTRINE<sup>42</sup>

**We may therefore regard matter as being constituted by the regions of space in which the field is extremely intense . . . There is no place in this new kind of physics both for the field and matter for the field is the only reality.**

EINSTEIN<sup>43</sup>

**MATTER IS ETERNAL, becoming atomic (its aspect) only periodically.**

THE SECRET DOCTRINE<sup>44</sup>

The virgin fabric, or web of the Cosmos that has been woven by Space-Time, must be shaped into the form of various Universes. Fig. 7.6 and the associated Table on the previous page above it shows the role of the Energy-Matter duality in the shaping process.

### Proem

It is a paradox that the closer we move towards contemplating the Source of our Being, the more profound and simpler become the underlying fundamentals; whereas the further we digress from the Centre towards the whirlpool of physical existence, the issues become, relatively speaking, increasingly temporal and inconsequential, but ever more complicated and time-consuming. This certainly applies to our daily lives where mundane trivialities necessary for ordinary living can demand an inordinate amount of time, energy and money (which is a form of energy), compared with more significant matters. This must be so, because as

<sup>42</sup> SD-2, p. 348.

<sup>43</sup> M. Capek, *The Philosophical Impact of Contemporary Physics*, Van Nostrand, 1961, p. 319. In this quotation, do not make the mistake of thinking that space is the container with field the content—rather space is itself the field.

<sup>44</sup> SD-2, p. 275. Later on HPB states 'Matter as Substance is eternal and has never been created..'—SD-5, p. 449.

Reality descends to increasingly lower levels (of Itself) there is an increasing degree of differentiation as explained in Section 5 and associated Fig. 5.1. However, no alarm need arise, provided that it is firmly borne in mind that all complexities are rooted in, and take their rise from the simplicity of the fundamental Occult principles just enumerated.

The above caution particularly applies to the Occult teaching on the planes of manifestation and the septenary law in Nature. This is not the place to delve into the vast esoteric doctrines on the planes of matter and their various classifications and grades, with a volatile cocktail of Sanskrit, Tibetan, Latin, Greek (and other) terms drawn from archaic literature, with their poor English equivalents to compound the problem. It is enough for our purposes therefore, to adhere to broad fundamentals and attain an overview appreciation of the derivation and nature of energy and matter. This is necessary in order to fulfil our intended objective of showing Occult Science to be the parent of Western science—so that physics is honeycombed with metaphysical principles.

## A Rudimentary, Overview Appreciation – How Energy and Matter Arise from Space and Time

How does the duality of Energy and Matter arise from the duality of Space and Time, as Occult Science has always asserted and modern science is beginning to realize? Let us begin with a simple illustration from daily life before investigating the deeper aspects. Before that however, do not think of one duality following another in succession even though they inevitably have to be described in language like a sequential process. Hold in mind a hierarchical chain of derivation rooted in the One Reality.

### EXAMPLES FROM EVERYDAY LIVING

Tsiolkovsky declared that first a dream is born within us, then we clothe it in blueprints and formulas, and thus a fancy is physically materialized. Is it not then, a fact of common experience that everything that achieves tangible expression in our world is *preceded* by an inner impulse 'from within outward',<sup>45</sup> provoked by will, thought and emotion? Any creation, whether it be a musical composition, a landscaped garden, or the Channel Tunnel first begins as an *idea*, or mental 'object'. Such an idea, first existing subjectively on the plane of the mind in 'mental space', provides an inner model or template<sup>46</sup> for outward projection onto the physical plane, where physical material (be it musical notes, plants, or steel and concrete) is used to build the objective, tangible product *according to the inner archetype in the mind*. Thus we see how ideas in *mental space* are expressed/projected to become as corresponding objects in physical space. We can travel physically through the Channel Tunnel only because the designers first travelled *mentally* through it; then clothed the mental substance with physical

<sup>45</sup> Mme Blavatsky's phrase.

<sup>46</sup> In a similar manner to a photographic negative (analogous to the subjective idea) serving as a template for producing positive prints ('objectivization' of the subjective idea).

matter—the objective expression of the former. Physical energy and matter are used, strictly speaking, not to create the product, but to ‘objectivize’ the latter from its subjective, originating mental state. The product was not created, but rather *manifested* or evolved (from the Latin *e-*, *volvere* meaning ‘to un-fold, or ‘roll out’) from its inner mind state. So there are no logical grounds for the popular (materialistic) viewpoint that the tangible steel-and-concrete product in the physical world that we can ‘see and touch’ is any more real than its inner, mental model; in fact quite the reverse, for esoterically speaking, the outward projection into physicality is a shadow of its inner, in-substantial reality, but a shadow demanding nevertheless a considerable amount of energy and matter for its objective manifestation and continuing existence! Despite the advances of modern science in ‘de-materializing’ matter, the common prejudice that equates the ‘real’ with the ‘solid’, ‘concrete’ or ‘quantifiable’, still prevails.

## What is Matter – Matter to Western science and Matter to Occult Science

The distinction between matter as understood in Occult Science, as opposed to Western science, is vital to our further progress. This was summarized in the Glossary and is amplified below.

### MATTER TO A SCIENTIST

A definitive statement in the modern, prestigious McGraw-Hill Encyclopedia of Science & Technology, 7th Edition, states matter to be:

**The substance composing bodies perceptible to the senses. The distinguishing properties of matter are gravitation and inertia. Any entity exhibiting these properties when at rest is matter. According to Einstein's theory of relativity [ $E = mc^2$ ], matter and energy are equivalent quantities . . .**

For orthodox Western science, then, (notwithstanding the enlightened views of numerous modern scientists), matter is the material of which physical bodies are composed; namely something that has weight, occupies space and endows objects with their tangible realism cognized by the five physical senses. The blind forces of Nature as chemical, electrical, gravitational and nuclear interactions between matter give rise to consciousness as a by-product.

---

**For Western science, matter constitutes the observable Universe and, with energy, forms the basis of objective phenomena. The interactions between matter are responsible for consciousness.**

---

Modern physics has forced leading scientists to think of ‘things of matter’ more in terms of energies, processes and *connections*, rather than ponderable objects, and so the classical concept of matter has lost its ‘solid reality’. This was shown in Fig. 2.13 of Section 2. (But despite such frank admissions, Western

science in the main is still locked in a futile battle to unearth that elusive 'ultimate' subatomic particle assumed to be the fundamental building block of the Universe—another example in Western science of inconsistency of approach as materialism without matter!)

What then is matter? Over half a century before the non-materiality of matter was demonstrated by Western science, Mme Blavatsky made the prophetic remark (quoted above) about force and matter being two sides of the same substance. She continued by stating '... no experimenter can have anything to do with matter properly so termed, but only with the forces into which he divides it. The visible effects of matter are but the effects of force. . . . that which is now called matter is nothing but the aggregation of atomic forces, to express which the word 'matter' is used; outside of that, for science, matter is but a word void of sense.'<sup>47</sup> Mme Blavatsky also referred to 'atomic forces' nearly a decade and a half before J. J. Thomson proposed, in 1898, the first model of the atom (comprising clouds of positive charges within which floated equal numbers of electrons—in Thomson's words 'something like plum pudding').

In other words, what Western science calls (and worships as) matter is none other than the envelope or outer skin of an *aggregation of forces*. Carefully considered from the higher standpoint of Occult Science, such matter, or 'bodies' exist as an illusory veil and therefore the word 'matter' is indeed intrinsically sense-LESS. Existence<sup>48</sup> and Reality are often confused. For the thirsty desert traveller, mirages in the appearance of pools of water exist, but the 'water' is not real. A coiled object in a dimly lit room may exist as a snake in the mind of the observer—until he turns on the light and discovers it to be a coiled rope. The mirage and the snake are *not* non-existent, otherwise they could not possibly be illusory. But they are interpreted not in themselves, but by the preconceptions of the mind. In our everyday living, we often experience things that do not exist *ontologically*—such as the blue sky, or darkness, both of which are non-entities. It is in the nature of matter to cast a spell by throwing a mayavic veil over Reality, such that the unwary scientist too often confuses what he observes and measures with his physical senses, with what IS. In the ultra-modern terminology of semantics, the maps (mental models) and the territory, or the descriptions and the described, are confused. Modifying innumerable versions of the former does not affect the latter, or make it any more accessible to the physical senses (as we explained in some depth in Part II).

So what then is Matter to an Occultist?

## MATTER TO AN OCCULTIST

We will investigate this 'matter' under three headings: (a) key principles; (b) the origination of Matter; and (c) the essential nature of Matter.

### Key Principles

The root meaning of matter is primordial material (derived from the Latin *mater*,

<sup>47</sup> SD-5, p. 383.

<sup>48</sup> Ex-istence from the Latin root ex-sisto, meaning 'to stand out'.

meaning 'mother'). To an Occultist, then, Matter is not a ponderable 'thing', but the first differentiation of Spirit (or Consciousness), its opposite pole. It is a Mother-principle referring to the form-making or objectivizing function whereby Spirit is provided with its appropriate vehicle or channel through which to manifest or ex-press itself. Thus Spirit as originant, and Matter as resultant, are not independent realities, but two facets (two poles) of the One Reality; Matter being Spirit at its most dense, and Spirit being Matter most etherealized. In Einstein's terms quoted earlier, matter is the resultant (effect) of field-as-space, the originant. The essence of the problem is encapsulated in the three quotations at the beginning of this subsection. The first quotation as implied above, is tantamount to HPB stating  $E = mc^2$  in words, nearly two decades before Einstein declared the equivalence of energy and matter (on the physical plane) more precisely, by way of his renowned mathematical equation. But is there not a contradiction between Einstein and the second Secret Doctrine quotation, the former stating the field (space) to be the only reality, and the latter asserting that Matter is eternal? The following exposition is intended to elucidate this apparent paradox by explaining exactly what that disarmingly simple term 'matter' really means and implies.

### The Distinction Between Substance, Matter and matter

The above is not to indulge in semantic pedantry as will become obvious, for as explained in the Glossary, terms used in a popular sense convey very loose and vague concepts which, in esoteric science we can ill-afford.

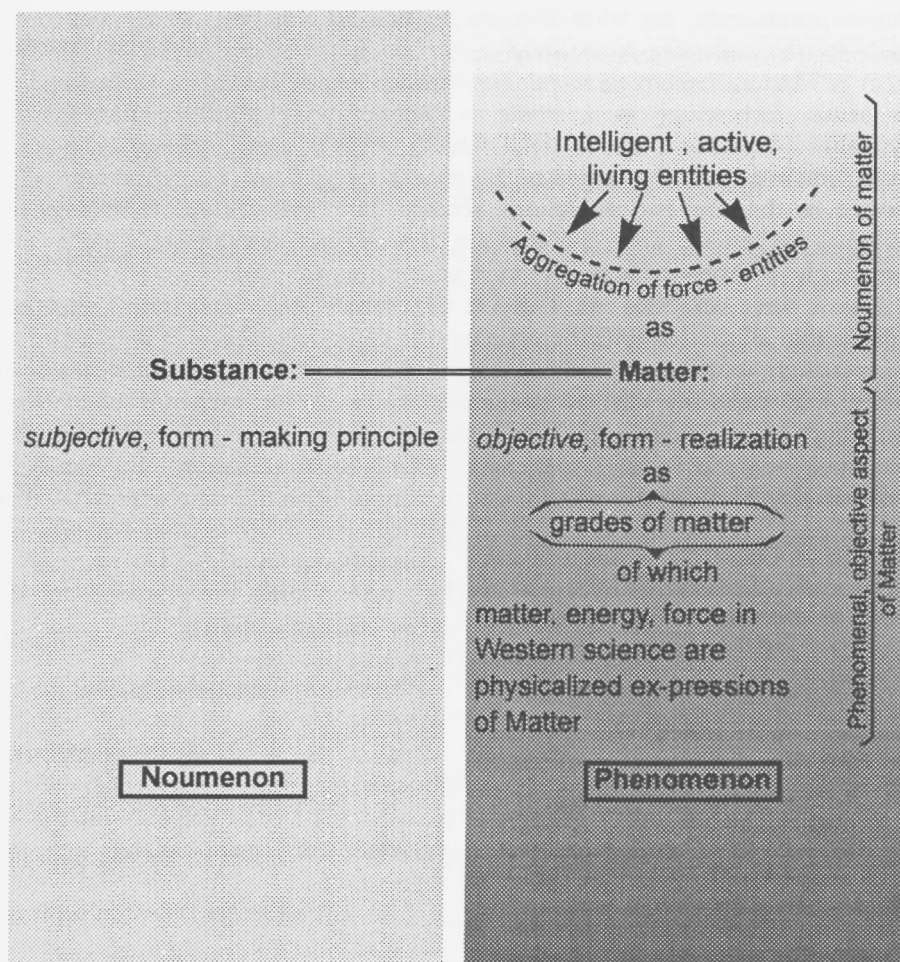
Referring to Fig. 7.13, **Substance** is the subjective, noumenal term applied to the form-making or vehicle-providing principle of which the objective realization is **Matter** (sometimes also written as **MATTER**), which is the phenomenal term applied in a generalized sense, covering the range of different grades of **matter** corresponding to the different planes of ex-istence. (Each plane has its corresponding 'matter-vehicle' for manifestation at that level.) By so providing Spirit, one pole of Reality, with an objective vehicle (objective to Spirit, that is) of Matter, the other pole, manifestation becomes possible. Put slightly differently, Cosmic Ideation needs a substantial connection (or vehicle) for its ex-pression, i.e. Cosmic Substance (both are general, abstract terms). Without Substance, Cosmic Ideation would remain a bare abstraction, for there can be no *manifestation* of Consciousness without the vehicle of Matter. Equally, during Pralaya, Cosmic Substance (with its corresponding grades of Matter) becomes resolved into a state of abstract potential objectivity, since Matter apart from Conscious perception is a pure abstraction. This is the condition into which the solar system will revert during Mahapralaya or the Great (Maha-) Night of Brahma, lasting a period of 311,040,000,000,000 years.<sup>49</sup> It is known as the *laya* state—a condition of inactivity and neutrality in which Substance becomes homogeneous and is unable to differentiate or act to become heterogeneous.

Referring again to Fig. 7.13, terms like Matter are all abstractions, i.e. generalized terms for hosts of living, force-entities acting *aggregatively*;<sup>50</sup> just as

49 Geoffrey A. Barboraka, *The Divine Plan*, The Theosophical Publishing House, 1980, pp. 13–17.

50 Adapted from G. de Purucker, Occult Glossary, *Theosophical University Press*, 1972.





**Fig. 7.13** The Distinction Between Substance, Matter and matter

the human body is the material counterpart, or 'matter' to its indwelling soul and spirit—the body itself being an aggregation of hosts of its living component-entities constantly self-renewing, although the overall body gives the impression of an unchanging vehicle.<sup>51</sup> Taking the word 'vehicle' in the strict sense (from the Latin *vehere* meaning 'to carry'), even a motor vehicle is an *aggregate* term for an ordered assembly of thousands of 'mechanically living' sub-components. The fundamental Occult maxim 'MATTER IS ETERNAL,' quoted earlier will now be appreciated, because subjective, form-*providing* Substance is never without its objective aspect as form-*realizing* Matter. The latter, in turn, is a generalized

<sup>51</sup> Adapted from Barborka, *op. cit.* We can extend this by pointing out that 'humanity' is an aggregative term for human beings of all types. *Bhagavad-Gita* is an aggregative title for living spiritual principles and active instruction. Many such examples could be cited.



term, as noumenon, for what Western science calls matter, energy and force, which are the collective *physicalized expressions* as the phenomenal, or objective aspect of Matter, 'becoming atomic (its aspect) only periodically.' Understood in this sense, technology as a whole is 'matter' to physical science, i.e. its physicalized expression and material vehicle, without which, science on its own would remain a bare abstraction of theories and equations. The important point however, is that the two disciplines, science (as originant) and technology (as resultant) are not the *same*; but they are certainly not disconnected—rather two facets of one reality—the laws of Nature on the physical plane.

Nearly three centuries ago, Leibnitz used remarkable metaphysical reasoning to prove that all matter could be reduced to a complex of forces. Modern physics is increasingly and covertly acknowledging this 'aggregation of forces' nature of matter, and curiously regards interacting forces as the exchange of massless, mediating particles called gluons (for example, gravitons are the massless particles exchanged between bodies experiencing gravitational attraction). But massless, force-carrying particles are tantamount to admitting an *aggregation of forces*, thus

providing another example of Western science being an ally of Occult Science, by corroborating the assertions of the latter through mathematics and experimentation.

---

**Matter to an Occultist is not a 'thing' but an overall *principle* acting at all levels as the vehicle for (subjective) Spirit, or Consciousness to manifest and ex-press itself in terms of objective ex-pression, or phenomenal appearance. Substance is a noumenal term covering the whole spectrum of its phenomenal, or objective manifestations as the variously differentiated grades of matter, known by the generalized term 'Matter'. It is vital to regard matter and bodies not as 'things' in themselves, but as the aggregate of *living* entities and forces, for there is no dead matter anywhere in the Cosmos.**

---

Now an obvious corollary to the above is that there is no such thing as 'dead' matter or 'empty' space anywhere in the Cosmos (because, to re-emphasize, matter is a general term for the aggregate of active, therefore *living*, force-entities). Through his deep alchemical researches, Newton explicitly declared that even a stone (dead matter to a conventional materialist) has soul and spirit. No wonder therefore that Lord Keynes remarked that 'Newton's deepest instincts were occult.'<sup>52</sup>

The above considerations could be one of the reason (according to the writer) why an Adept declared: '... we believe in MATTER alone' ... implying that Spirit without Matter would be a mere abstraction (and a hypothetical one at that), Matter being the most evolved form of expression (as opposite pole) of Spirit, its cover—'as visible nature and ... in its invisibility as the invisible omnipresent omnipotent Proteus with its unceasing motion which is its life ... outside of which nothing can exist.'<sup>53</sup> In mundane terms, to possess a talent without harnessing it productively is an iniquity against Nature.

<sup>52</sup> Lord Keynes bought a substantial portion of Newton's alchemical papers and was moved by them to make the above remark. In a lecture to a private audience at the Royal Society Club in 1942, Lord Keynes said that all of Newton's unpublished works on esoteric matters 'are marked by careful learning and extreme sobriety of statement. They are just as sane as the Principia.'

<sup>53</sup> *The Mahatma Letters to A. P. Sinnett*, The Theosophical Publishing House, 3rd ed., 1972, Letter No. 10, p. 56.

Harking back to the quotations at the beginning of this subsection, it will be realized that there is no contradiction at all between the statements of Einstein and *The Secret Doctrine*,<sup>54</sup> once the different meanings attaching to the terms 'matter' and 'MATTER' are understood.

## The Origination and Derivation of Energy and Matter

We consider this topic first by way of simple intuitive reasoning, before outlining the Occult doctrine on how energy and matter arise.

### AN INTUITIVE OCCULT APPRECIATION

It was explained earlier that in the unmanifest is subsumed the ultimate Principle of Space, Mahakasha, which is the infinite expansion and therefore the opposite limit of the Point-principle, Mahabindu. In the manifest these principles have their counterparts as Akasha and Bindu, respectively. Now we can imagine that as the Point expands, the 'containing volume' cannot be nothing in the sense of a complete annihilation. It is certainly no-thing, but rather a plenum of vital stuff (an 'energetic vacuum' to use the terminology of modern physics). The energy-mass that was concentrated into the Point is now the 'same' energy-mass 'dispersed out' as the 'energetic stuff' of expanding Space (just as the mass of rubber in a balloon would be the same before and after it had been inflated.)<sup>55</sup> (Note again that the Point does not expand *into* a space to fill that space, but by its expansion *constitutes* that very Space.) Thus in Occult Science the concept of 'empty space' (or 'dead' matter as explained above) is utterly meaningless, such vacuum-like emptiness applying only to a now outmoded, materialistic science.<sup>56</sup>

### THE ESSENTIAL NATURE OF ENERGY AND MATTER

Just as the vibration of physical atoms (separated by vast spaces) gives gross matter its appearance of continuity and solidity, similarly the Points in Motion (spawned from the Mahabindu) are that Space-Substance whose ceaseless, vibrant activity (Motion) constitutes that Energy as the basis of Matter. Thus manifested matter is derived from the 'vibrant Substance' of Space, which increasingly differentiates as manifestation proceeds 'downwards' along the evolutionary arc of increasing descent of Spirit into Matter. *This differentiation of*

---

**Energy and Matter are the transformed products of the vibrant Substance of Space.**

---

*Space produces corresponding differentiations of Matter, recognized in its objective aspect as the aggregate expression of the innumerable forces in Nature.*

<sup>54</sup> This should occasion no surprise as Einstein was supposedly a student of *The Secret Doctrine*, as documented in Section 2 with full references.

<sup>55</sup> Again this doctrine is partially echoed by the Big Bang theory which in an entirely materialistic, therefore incomplete manner purports to describe the birth of our physical Universe. The mass which is now the Universe was supposed to be concentrated into an infinitely small point at the moment of the Bang. As Above, so Below: mighty though it is, our physical Universe, as microcosm, displays the same cosmogonical characteristics of the grand Cosmic scheme—the macrocosm.

<sup>56</sup> Even here quantum physics has shown that the so-called vacuum state is a seething sea of energy out of which particles like photons (light particles, hence representing energy) can 'bubble out'.

Descent of Reality  
towards the Physical  
Plane



<sup>b</sup> ... in Occult metaphysics ... there are two "ONES" ... the Second, being ... the reflection of the First One, can do so [i.e. emanate and divide]. SD-1, p. 188.

Descending Emanational Sequence of Tattvas or Force-Principles, their Correlations with States of Matter and Correspondences with Sounds and Lights<sup>a</sup>

Tattvas with English Meaning	Elements and States of Matter	Sounds	Lights
Upper Triad - Arupa (formless)			
Adi (1st Logos) Primordial Force	Primordial Spiritual Substance	Sol	Blue-White
Anupadaka (2nd Logos) Spirit Force	Spiritual Essence	Mi	Yellow
Akasha or Alaya (3rd Logos) Creative Force - Aether or Space	Ether	La	Indigo
Lower Quaternary - Rupa (with form)			
Vayu Air or Vitality	Air or Gas **	Fa	Green
Taijas Fire or Radiation	Fire or Heat **	Do	Red
Apas or Jala Water or Liquid	Water or Liquid **	Si	Violet
Prithivi Earth or Solid	Earth or Solid **	Re	Orange-Red

<sup>\*</sup> Akasha is the 'Universal Soul ... from which all that exists is born by separation or differentiation. It is the cause of existence [standing out of]; it fills all the infinite Space, is Space itself, in one sense ....' SD-4, p. 81.

<sup>\*\*</sup> The solid, liquid, gaseous and 'ether' states of physical matter corresponding to earth, water, fire and earth elements are the 'lowest octave' or physicalized expression of Prithivi, Apas, Taijas and Vayu on the lowest plane.

<sup>a</sup> Adapted from SD-5, p. 478 and *The Divine Plan* by Geoffrey A. Barborka, The Theosophical Publishing House, 1980, pp. 173-8.

Fig. 7.14 REALITY and Reality – The Emanational Emergence of Tattvas and the Relation with Matter, Sound and Light

OCCULT DOCTRINE ON DERIVATION OF ENERGY AND MATTER

From the above, it will be realized why Akasha is described in Occultism as a radiation from Mahakasha, or Mulaprakriti—the very term ‘radiation’ connoting a quality of energetic, **Light**-bearing Substance. Fig. 7.14 shows how Reality descends towards increasingly lower (therefore ‘denser’ and more differentiated) levels of *Itself*. In order that this may occur, the primordial (noumenal) Substance, Akasha, separates or differentiates into all the grades of invisible and visible Matter constituting the objective Universe. Akasha is arupa—its derivative products, rupa, and each plane of manifestation is Akasha in one of its (seven)

aspects, the earth being the lowest, followed by the Astral Light, described as the picture-gallery of Nature.<sup>57</sup>

## WHAT CONSTITUTES MATTER

The above clearly shows why Akasha is the cause of all existence, or rather, existence, meaning 'to stand out of' (from the Latin as *ex-* and *sisto*). Existence is erroneously confused with Reality as previously cautioned. That *from*, and *out of which*, the standing is done (Akasha in the above instance) constitutes the Real, NOT that which has temporarily 'stood up'—a maya indeed!

Western science and Occult Science both agree that energy and matter are an *interconvertible* duality constituting the fundamental basis of the physical world. Physical matter, then, is 'pressurized energy'<sup>58</sup> both of which are differentiated and condensed out of their substratum state of undifferentiated Substance in manifestation, i.e. Akasha, of which the counterpart as the ultimate Principle subsumed in the unmanifest is Mahakasha, or Mulaprakriti—the abstract Substance-principle, or undifferentiated Root-matter.

Because Matter is a generalized term encompassing the infinite grades of subtlety from the most etherealized, or spiritualized, down to the grossest physical material, it will be realized that physical matter is not a separate concept that is unrelated to Matter in the Occult sense, but rather the lowest rung of the *principle* of Matter as understood by Occult Science—its lowest physicalized expression.

## The Duality of Energy and Matter

Fig. 7.14 and associated Table, plus previous explanations show how Akasha, as Aether or Space, is the sub-stratum of Matter. But as repeatedly stressed, no principle exists without its polar correlate. (Recall the explanation given in Section 6 about how dualities arise.) Hence, it would be strictly accurate to state that the Energy-Matter duality is a derivative product of the Space-Time duality. For Space (static, Shiva-derived quality) would remain a bare abstraction without coeval and co-eternal Time (dynamic, Shakti-derived function) to express and propel it into becoming the fabric-substance of (manifested) Universes; Time *potentizes* the potential of Space. Similarly, Energy (Shakti-derived function) would remain unfulfilled as 'vibrant potential energy',<sup>59</sup> without Matter (Shiva-derived quality) to stabilize and harness its latent dynamism. Conversely, Matter would be inert (not dead) without the stimulation of Energy.

57 This is because every thought and act occurring in the physical or psychic realms is indelibly impressed upon the Astral Light, and accessible to those with genuine clairvoyant faculties. As a very crude analogy, just as physical objects may be regarded as shapes 'carved' out of a 'block of light'—physical matter being, as Western science has confirmed, congealed light, or energy—so thoughts can be looked upon as forms sculptured into the Astral Light.

58 Other flamboyantly suggestive terms are 'crystallized light' and 'bottled-up radiation', the latter term supposedly by Planck himself. They all convey the essential meaning of matter as a particular state of energy/radiation/light.

59 Potential energy used in a metaphorical and not in the strict scientific sense of the energy of a body by virtue of its position above a specified datum.

The Energy-Matter duality constitutes, therefore, the secondary duality in Nature because it is a product, as resultant, of the fundamental Space-Time duality depicted in Fig. 7.6. Indeed we have quoted Einstein stating matter to be the local 'condensations' of the field, there being no grounds for assuming the reality of both field and matter. This clearly alludes to the primacy of field (Space) over matter. Furthermore, by virtue of being derived from Space-Time, the Energy-Matter duality must logically be related to the primal polarity of Shakti and Shiva as just mentioned (see again Fig. 7.6), and thus display the fundamental, polar characteristics of Power and Consciousness. Furthermore, it was said that the Shiva-derived quality of Space was the cardinal member of the Space-Time duality. In the Energy-Matter duality it is the Shakti-derived function of Energy that is the cardinal member (as is apparent from our inquiry into how energy and matter are derived). By such means does Nature achieve a perfect dynamic balance, for the manifested Universe, in its objective aspect, is the outcome of energy-matter, which itself is a differentiated form and expression of the ultimate Divine Power (with Divine Consciousness, as always, a polar correlate).

## The Discontinuous Nature of Energy and Matter

We summarize the vital contribution of Western science towards corroborating the Occult principle that energy and matter are discontinuous in manifestation.

### OCCULT PRINCIPLE CORROBORATED BY WESTERN SCIENCE

Section 2 stated the chief scientific discoveries around the turn of the twentieth century that ushered in the era of modern science. It was mentioned that classical science (up until 1900) had assumed energy to flow continuously. Planck, not by virtue of any esoteric reasoning or other such means, but driven by the pressure of *observed* phenomena, was forced to make the entirely arbitrary assumption (as it then appeared) of *non-continuous* energy, in order to make the theory fit the conclusions of experimental results.<sup>60</sup> Little did he realize at that time that he had formulated the lowest octave of an Occult truth, i.e. on the physical plane, which Western science in the next century may well be forced to accept by the inexorable logic of its own further discoveries. Quantum physics lies on the 'edge' of the physical sciences; its core concept—the *quantum*, derives from the principle of discontinuity in Occult Science.

The Occult doctrine on the discontinuous nature of Space and Time *in manifestation* was explained earlier. Since Energy-and-Matter is one of the products of Space-and-Time, the former would logically be expected also to display a discontinuous character. In other words, because such Power/Energy (and Consciousness) from the infinite source and reservoir, the Divine, is

60 By no means the first time in science where assumptions (however apparently bizarre) are chosen to justify and force-fit a predetermined conclusion, and those assumptions that conflict with the intended outcome are ignored. By this means many a theory is given a *mask of respectability* despite its lack of grounding in reason at the time of its formulation, although subsequent events and circumstances may well justify its validity.

transformed to the physical plane via the agency of Space and Time, which are themselves discontinuous, such energy at the physical level would obviously be discontinuous, as Planck discovered—so corroborating Occult Science. Indeed the equivalent Sanskrit term for quantum (which means ‘how much’) is *katama*. The discontinuous character of physical matter is too obvious to warrant any discussion, other than to point out that the interconversion of energy into matter, and vice versa, (asserted by Occult Science and formulated by Einstein) necessarily implies that if either one or other member is found to be discontinuous, then so must be the other.

This vital connection between modern Western science and Occult Science was explored in Section 2 and earlier in this section. It is re-visited in Section 9.

\* \* \*

Let us now bring together the information thus far in order to see how Occult Science explains the unfolding of the Cosmos as a whole, including the role of Sound and Light.





# Section 8 The Role of Sound and Light and The Unfolding of Cosmos

## PROEM

We touched upon the role of Sound and Light in Section 7 and mentioned their part as the agent and instrument of Divine Consciousness and Divine Power in the overall process of manifestation. This is a fascinating subject, not only because Western science is increasingly beginning to equate light with reality, but also because the all-important contribution of sound is virtually ignored in scientific circles for reasons that will become obvious.

Sound and Light are dual, polar principles whose intimate interaction fulfils the following triple roles:

1. manifestation of Universes, and production of its forms; along with
2. perception of the objective aspect of the phenomenal Universe of forms;
3. unified vision.

These three roles are shown in Fig. 8.1 and will shortly be explained. But first we need to understand the origin and nature of Sound and Light, before examining their different, but interactive roles in manifesting and objectivizing the Universe. A degree of repetition is unavoidable in attempting to explain, in words, the intimate and strongly coupled nature of Sound and Light; but it is hoped that each re-emphasis of fundamental principles will provide fresh nuances and overtones of meaning on this subject of supernal transcendence.

### In this section

- |  |  |
|--|--|
| • Origin, nature and role of Sound       | • How Sound and Light enable the perception of forms |
| • Origin, nature and role of Light       | • The unification of Sound and Light                 |
| • How Sound and Light manifest Universes | • The unfolding of Cosmos                            |

## SOUND AND LIGHT – THEIR FUNDAMENTAL ORIGIN AND NATURE

A brief recapitulation of cardinal principles is needed. Section 6 explained that the two aspects of REALITY, or the Unmanifested and super-Integrated State are:

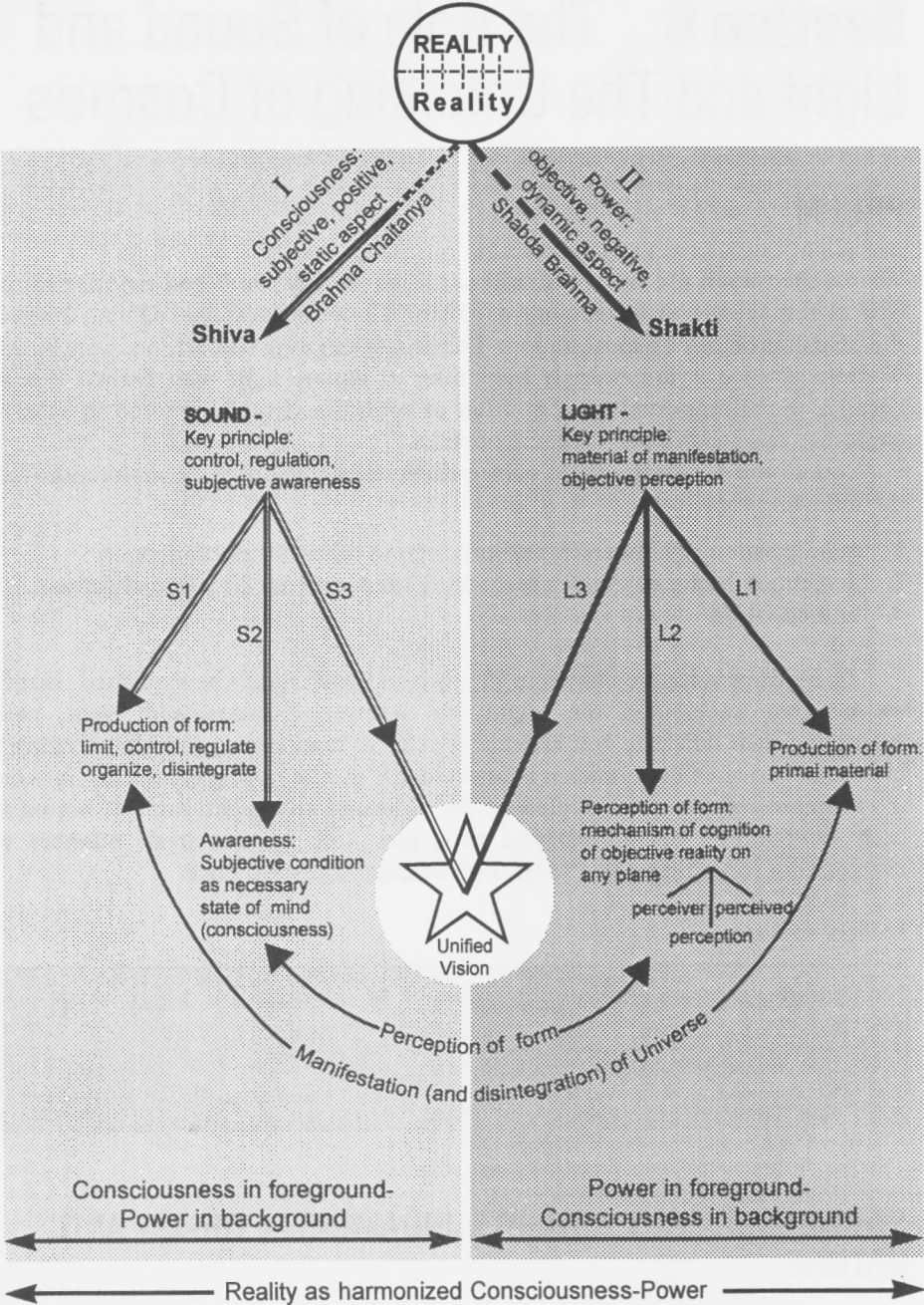


Fig. 8.1 Sound and Light – Dual, Polar Principles Exhibiting Triple Roles

1. 'System aspect' as Brahma Chaitanya, or REALITY in its aspect of Divine Consciousness—corresponding to the Shiva Tattva (see I in the top left hand part of Fig. 8.1); and
2. 'Functional aspect' as Shabda Brahma, or REALITY in its aspect of Divine Power—correlating with the Shakti Tattva (see II in the top right hand part of Fig. 8.1).

Now this Power is in fact Power *in the form of Potential 'Sound'*, the root meaning of the Sanskrit word 'Shabda' being the Word, or Logos. (In her posthumous Glossary, HPB speaks of Sabda Brahman (i.e. Shabda Brahma) as "Ethereal Vibrations diffused throughout Space." The word 'Vibrations' immediately evokes a sense of Motion, Power, Energy, etc. ***Sound, then, is the agent of the positive, static principle of Divine Consciousness, Shiva, and provides the vehicle, or means whereby the latter can ex-press Itself.*** Recall the difference between system and function explained in Sections 5 and 6.

Light is the instrument of the negative, dynamic principle of Divine Power, Shakti. It provides the functional propensity of Shiva, via the agency of Sound, with the primal material to be organized and objectivized as ex-expression in phenomenal worlds of manifestation. Any potential function for ex-expression remains in a state of bare subjectivity unless a suitable vehicle is provided to

---

**Pure function—a subjective state of potential—in order to release such potential by expressing its function, requires material so to functionalize or objectivize through into the objective state. Light is involved with the objective aspect and Sound with the subjective aspect of manifestation. Both derive from, and are subsumed in, the UNITED State.**

---

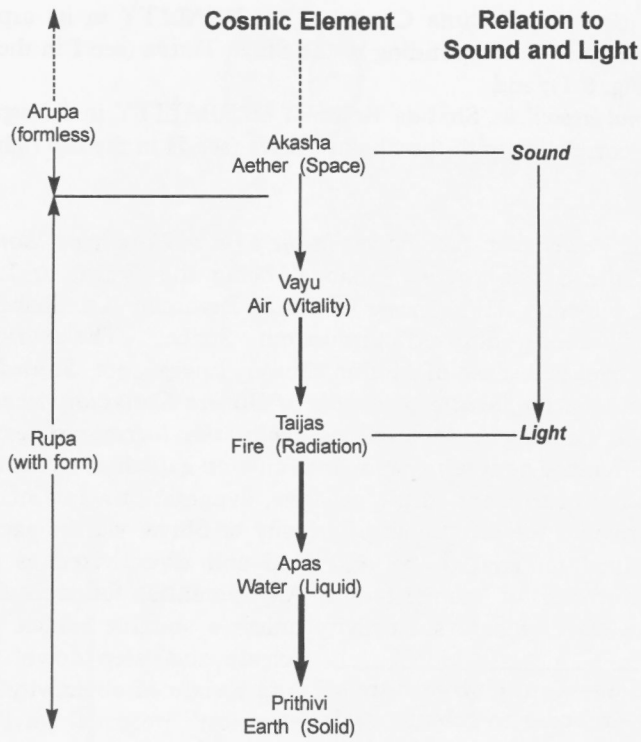
release and 'step down' such potential into a state of objectivity (rather like an electrical potential is harnessed as current via transformers and conducting wires). ***Light therefore, is the instrument of Shakti, in order to provide the functionalizing potential of Shiva with the material and objectivizing mechanisms through which to ex-press such potential into a state of objectivity.***

Let us delve more deeply into their sacred and transcendental roles.

## Sound – Its Origin, Nature and Role

**KEY PRINCIPLE:** agent of Divine Consciousness, Shiva, as the dynamic aspect of REALITY for the manifestation of Universes and the unfoldment of conscious awareness.

The derivation of the five Cosmic Elements was previously stated in Section 7, Fig. 7.14. Their explicit relation to Sound and Light is shown here in Fig. 8.2. Akasha is the primary Element from which all other Elements are derived and it is well known that Sound is a property of Akasha. But it is in the ultimate principle of Akasha, i.e. Mahakasha (in the unmanifest) in which inheres the ultimate Sound known as Shabda, or Potential 'Sound'—see Table below. Shabda is the



**Fig. 8.2**    Sound and Light – Their Relation to Five Cosmic Elements

dynamic aspect of REALITY, being the agent of the Divine Consciousness, Shiva. Now for manifestation to occur, this unmanifest and Potential ‘Sound’, Shabda, passes through the Logoic Centres—Mahabindu (the ultimate principle in the unmanifest, of the Monadical Centres, or Bindus in the manifest), to become Nada, or integrated Sound in the realm of the manifest (see Fig. 7.2 in Section 7). Nada is the manifested-integrated origin of all powers, energies, forces and motions that Western science recognizes on the objective physical plane as the Laws of Nature.

Source of Sound		
Source		Quality of Sound
Mahakasha (Mulaprakriti)	Unmanifest	Shabda – Potential, Integrated Sound
	Manifest	
Akasha		Nada – Potentized, Integrated Sound

Stated in terms of the logic outpourings, Potential 'Sound' is the agent of the First (unmanifest) Logos, Mahesha, through whose consciousness Potential 'Sound' becomes potentized Sound, Nada, which is the agent of the Third (manifest) Logos, Brahma, for controlling and organizing the world-system over which He presides as its ruling Deity. (The Greek term *Logos* means word, or sound.)

The triple role of Sound therefore, is to:

1. organize, control and regulate the primal material of the objective Universe, for (a) the construction and maintenance of forms during the evolutionary period; then (b) the gradual disintegration of forms during the involutionary period of dissolution as the Universe approaches its pralaya;
2. provide the necessary subjective conditions (states of consciousness) for the perception of forms;
3. merge into the integrated state of unified vision.

## Light – Its Origin, Nature and Role

**KEY PRINCIPLE:** instrument of Divine Power, Shakti, for providing the 'raw', or primal material for manifestation and the objective mechanisms of the manifested Universe and its perception.

Referring again to Fig. 8.2, Light, or Prakasha (meaning the root of Akasha) is a property of Taijas (which itself is derived from Akasha of which Sound is a property). Sound is thus seen to occupy a more fundamental role than Light in the order of derivation. This is logically consistent with the above-mentioned fact about Sound being the controlling and regulating force; and Light, at a lower stage in the process of manifestation, pertaining to the objective mechanisms and its perception. Note however that a literal, 'lower mind' concept of Light following Sound in a sequential, linear fashion is quite untenable—for both are cosmic principles and work *pari passu*.

The essential nature of light is radiation (not emanation) and matter is crystallized light as modern science has explicitly shown.<sup>1</sup> In its highest aspect, Light is the *radiation* of Consciousness through which the objective world of mind is both produced and perceived, the different aspects of Light being the correlative, different ex-pressions of the Supreme Consciousness—***all lights are the ex-pression and forms of the supreme Light of Reality***. (Section 7 showed how consciousness, which is of the nature of 'spirit' can ex-press as, and assume the forms of the various vibrations of energy associated with the corresponding grades of matter.) A simplistic example of the objectivizing function of light on the physical plane is how an object in a dark room can be perceived only when we turn on the light. Before the light, the object remains 'subjective' to us—unless we bump into it! The light has 'objectivized the object' to our senses—we see objects only with the help of light. This also illustrates the

<sup>1</sup> Condensed, imprisoned, bottled-up or congealed light are all suggestive phrases.



fact that what we call the physical organ of perception—the human eye in the above example—must also be regarded as an instrument of perception, for it derives its essential nature from Light. In fact the human eye is strictly an organ of *light*, that fulfils its function as the instrument of sight.

The triple role of Light therefore, is to:

1. supply the primal material of the objective Universe;
2. provide the instrument of perception (which includes the appropriate organs of perception) and objectivizing mechanisms for perceiving the forms of the Universe;
3. merge into the integrated state of unified vision.

## SOUND AND LIGHT IN INTERACTION

Referring back to Fig. 8.1, Light materializes and objectivizes what Sound proposes, directs and influences by:

1. providing the primal material and producing forms; as also the
2. instruments of perception which are not separate from the forms so produced—thereby enabling the objective perception to the subjective consciousness (recall the cinema example in Section 6 where it was shown that the role of light was to produce the objective (and temporary) pictures on the screen of consciousness).
3. merge into the integrated state of unified vision.

The joint interaction of Sound and Light in the *manifestation of phenomenal worlds, the perception of forms, and unified perception*, corresponding, respectively, to 1., 2. and 3. above, is elucidated further.

---

**Light materializes and objectivizes what Sound proposes and directs.**

---

*perception*, corresponding, respectively, to 1., 2. and 3. above, is elucidated further.

## Their Joint Roles in Manifesting Phenomenal Worlds

**KEY PRINCIPLE:** Sound *directs* to limit, influence and control the process of manifestation, as also to organize (or break-up), regulate (or disperse) such manifested forms. Light *works* to make primal material and produce manifested forms according to the Sound-directed influence. (See **S1** and **L1** in the centre of Fig. 8.1.)

**God has created the world out of His own substance, that is His own thought, and the thought [i.e. Divine Consciousness, Shiva whose agent is Sound] becomes Light.**

ZARATHUSHTRA

**Ahura Mazda's Body is Light and his Spirit is Truth.**

PORPHYRY

**And God said, Let there be light: and there was light.**

GENESIS, CHAPTER 1

The above lofty verses from sacred scriptures, both Eastern and Western, show that for manifesting a Universe, the Word—as Sound—becomes the Universe—as Light. The Supreme Consciousness, as Zarathushtra, Krishna or Christos, etc. invokes the agency of Sound to cloth Himself in a fabric of Light drawn from His own essence; this Light Body constituting what we call the Universe—a part of Himself. Thus, Sound occupies a more fundamental role than Light, as just stated.

The above also shows why in the *exoteric* interpretation of religions, Shiva, whose role is essentially regenerating, is often misleadingly referred to as the 'Destroyer' because it is through His Consciousness using the power of Sound that He can as well disintegrate (as so-called Destroyer) the old form of the Universe, so that new forms can be 'created', or rather manifested.

The following transformations occur when Light, the *prima materia* of the Universe, is organized through Sound acting via the intermediary of etheric matter and other cosmic agencies:

*Macrocosmic level:* as Sound producing an underlying force field acting from the centre of the sun which organizes the movement of the whole planetary system by what science calls the forces of gravitation and inertia.<sup>2</sup> There are also veiled hints on this mysterious influence of Sound in the esoteric literature in phrases like the 'music of the spheres'.<sup>3</sup> Furthermore, we are told that the sacred Sound OM (AUM) is 'in spiritual affinity with cosmic forces' and that 'He who remembers that the Universe is built up from the Tattvas will readily understand something of the power that may be exercised by vocal sounds.'<sup>4</sup>

*Microcosmic level:* as Sound producing an underlying force field from the centre of the atom to regulate and control the movement of orbiting entities which are of the nature of crystallized light, or what science calls electrons or particles. The atom is the result of an interaction between the correlates of Divine Consciousness and Divine Power on the physical plane. The consciousness appears as the static force that regulates the centripetal and centrifugal forces

2 A wonderful account of this is given by Professor G. R. Jain, *Cosmology: Old and New*, Bharatiya Jnanpith Publication, 1991.

3 There is a striking similarity with heavenly music on the earthly plane. For it is the unheard, 'inner sound field' in the mind and heart of a great composer that 'organizes' the notes (analogous to light) of his composition—the manifested musical product. Then the performer 'co-ordinates' the notes of his instrument according to the inner sound of the composition. This inner sound—unstruck and unheard—needs material to transform into sound—struck and physically audible. Musicianship (technique) is to do with the skill with which the notes are made to correspond with, and mirror, the inner sound; whereas musicality concerns the quality and sublimity of the directing inner sound itself. Each reflects the other and this applies (in different senses) to both composer and performer. These facts also help towards understanding the basis of music therapy, which is now gaining popularity and recognition.

4 SD-5, p. 505.

within the atom; and the power expresses itself as the kinetic, or dynamic energy of the orbiting electrons.

*Human level:* as an inner 'sound field' emanating from the Heart Centre. This Sound is called Anahata Shabda, or Unstruck Sound, and is the basis and sustaining principle of the beating physical heart—the struck sound. This is why the seat of consciousness in the human being 'resides' in the Heart Centre—never the brain; for the light of the brain is a reflected or 'borrowed' light, as moon-light is reflected sun-light. The more fundamental role of Sound over Light in human life is shown by the fact that we may choose to *look* away, but we can never 'listen away'. The origin of language and use of words goes far in unveiling fundamental precepts. For we speak of *sound* health, not 'light' health! Furthermore, we are enjoined in the scriptures to listen to 'God', but it is considered impious to look upon God as a representation in idols.

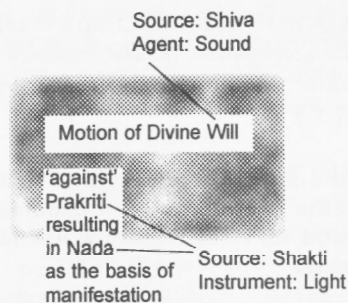
It is now obvious that because Light—the instrument of Power, is organized by Sound—the agent of Consciousness, *Light must therefore be permeated by Consciousness*. Hence the unvarying reference in all esoteric literature to light as being practically synonymous with consciousness—a point that will be reinforced in Section 9.

## ANALOGIES TO ILLUSTRATE JOINT INTERACTION OF SOUND AND LIGHT

Many simplistic examples can be cited to elucidate the closely coupled, but different roles of Sound and Light and how the whole structure of the manifested Universe is based on Sound. For example, a powdery substance spread evenly over the surface of a drum will take on a unique pattern according to the way the surface is vibrated. This almost literally shows the formative, matter-organizing characteristics of Sound as a vibration on the physical plane. Now consider any institution. The director's word is obeyed by his workers. He does not flash lights to make his point, but voices his command to his workers to make things happen. The director gets things moving, but does not do the actual moving. In time, the workers will become imbued with their director's intelligence (analogous to light as consciousness), but their roles will still be different. Now a new-born babe emits a cry, not a sparkle from its eyes, and by the same token, the Universe is born with a Bang (metaphorically speaking), and not a Flash. (The fact that on earth we hear thunder before seeing lightning shows how reflected and inverted is this physical world—a maya indeed of shadows.)

A more sophisticated example is given in Fig. 8.3 which shows a remarkable similarity of principle between the interaction of physical magnetism and electricity, and that of Sound and Light. As the movement of a magnetic field across a conducting coil of wire induces a current in the latter, so the Motion of the Divine Will vivifies prakriti (Nature), resulting in Nada as the source of all movements, energies and forces in the realm of manifestation. Furthermore, the source of the electricity lies in the magnetism; similarly the cause of all

## Occult Principle



Three factors necessary for manifestation :

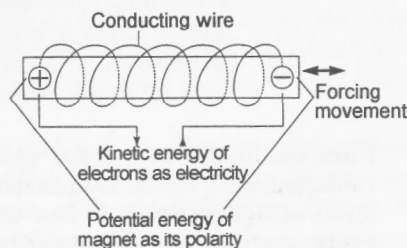
1. The movement of the Divine Will (subjective aspect);
2. vivifies prakriti, its 'conducting medium';
3. producing Nada as the basis of (objective) phenomenal manifestation and all energy and matter.

**Sound** is agent for Shiva Principle of Consciousness, being the Source of Divine Will as subjective aspect of manifestation.

**Light** is instrument of Shakti Principle of Power, being the source of energy and phenomena as objective aspect of manifestation.

Shiva-Consciousness always in background, i.e. subjective, behind all phenomenal manifestation deriving from Shakti-Power in the foreground, i.e. objective - and vice versa.

## Scientific Analogy



Three factors are required to produce electricity:

1. The potential energy, i.e. polarity of magnet;
2. when moved inside a conducting coil of wire;
3. produces kinetic energy of electrons in wire as electricity.

Source of electricity (dynamic, objective aspect) is in magnetism, i.e. polarity of magnet (static, subjective aspect) - and vice versa.

**Fig. 8.3** The Interaction of Sound and Light in the Mechanism of Manifestation

manifestation and the origin of Nada from which are derived all energies by subsequent differentiation, lies in the polar Shiva~Shakti Tattva. The positive, static pole of Shiva-Consciousness is the source of the Divine Will which remains in the background; and the negative, dynamic pole of Shakti-Power is the source of that Energy which appears in manifestation as the phenomenal world.

## Their Joint Roles in the Perception of Forms

**KEY PRINCIPLE:** Sound is concerned with the *state of consciousness* (subjective conditions) necessary for awareness of form on any manifested plane. Light is involved in the *mechanisms for the cognition* of the objective reality on any plane of manifested ex-istence. (See **S2** and **L2** in the centre of Fig. 8.1.)

**I am essentially that Shiva whose essential nature is the Light of Pure Consciousness which illuminates Itself, is the Real illuminator behind all kinds of lights, which is that transcendental Light of Reality which also expresses Itself in external and internal lights.**

SANSKRIT SHLOKA<sup>5</sup>

Referring to Fig. 8.1 it is clear that in general, the perception of form needs a subjective principle and an objectivizing mechanism, in other words (a) the relevant mental state (consciousness) to re-cognize what is presented to it by (b) the appropriate mechanisms and organs of perception.

On any plane of ex-istence, Sound is the agency for bringing about the necessary changes in consciousness as subjective states of mind; and Light is the medium necessary for the cognition of the objective realities (forms) on that plane. Whatever the mode and instrument of perception on any plane, the 'screen' of consciousness is always present in the background to provide the illuminating power of perception in the foreground (recall the cinema-picture analogy of Figs. 6.4 and 6.5 in Section 6).

'External and internal lights' in the above quotation refers to the mode of perception on the three planes of the personality, i.e. physical, astral and lower mental, where light is the instrument of perception through its associated and co-related sense organ. 'External light' refers to the instrument of perception on the physical plane, i.e. light as an electro-magnetic vibration which, through its associated organ of perception, the eye, results in physical sight. *Western science has minutely investigated the physics, optics and neurochemistry of this mysterious process, but is still very much in the dark as to how nervous impulses along the optic nerve to the brain centres are 'transformed' into sensate experience.* 'Internal light' refers to the instrument of perception on the two planes above the physical—astral and lower mental. The process of perception is analogously similar to that on the physical plane, i.e. light is used to stimulate the associated sense organ, except that this light is of much smaller wavelength than physical light (therefore physically invisible), and the sense organs are the so-called astral and lower mental centres. Apart from some laudable work by individual scientists, Western science, as a whole, has not investigated (and has little interest in) internal light.

'Light of Pure Consciousness' and 'Light of Reality' refer to an altogether different mode of perception on the three Spiritual planes of the individuality, i.e.

5 I. K. Taimni, *Science and Occultism*, The Theosophical Publishing House, 1987, p. 252.

the Higher Mental, Buddhic and (Lower) Atmic planes. Here there is no distinction, as such, between light and an organ of perception. For there is a mysterious connection between consciousness and light, such that the two become practically indistinguishable. Indeed on the spiritual planes the demarcation of Consciousness from Light becomes so blurred that Consciousness may be regarded as Reality in its aspect of Light; and Light as the same Reality in its aspect of Consciousness. Consciousness as Light is synonymous with the Light of Consciousness.

Thus in summary, the above quotation says in essence that *our innermost and essential Self is Pure Consciousness (Shiva) whose nature it is to express as the various vibrations and forms of Light (Shakti)*. This is in perfect accord with one of the deepest tenets of *Theos-Sophia*, that Man reflects in his essential being the whole nature of Cosmos in all its aspects.

## Their Unification

**Behold! thou hast become the light, thou has become the sound, thou art thy Master and thy God. Thou art Thyself the object of thy search: the VOICE unbroken . . .**

*THE VOICE OF THE SILENCE – FRAGMENT I*

**As the eyes are the windows of the soul, so are the ears its gateways or doors.**

*LIGHT ON THE PATH*

As hinted above, when consciousness deepens and increasingly approaches its pure Source, in the final stages of Self-Realization, there is a merging of the roles of Sound and Light (see **S3** and **L3** in the centre Fig. 8.1). All distinctions between Perceiver, Instrument of Perception and Perceived merge into the undifferentiated, or unified state of the Real. Some indication of the time-honoured steps towards such a goal are suggested in Section 11. Beyond this however, little, rather nothing can be said about the actuality of such an exalted state for it is an *experience*,<sup>6</sup> utterly ineffable, that can only become degraded and debased by any attempt to describe that which 'is beyond the range and reach of thought . . . "unthinkable and unspeakable."'<sup>7</sup>

**When, seeing the Self by the self, he is satisfied in his own Self . . . he moves never from the Reality.**

*BHAGAVAD-GITA (SRI SANKARACHARYA VERSION),  
SIXTH DISCOURSE – DHYANA YOGA*

<sup>6</sup> The writer obviously makes no claim whatsoever for such an experience but has only recorded, hopefully faithfully, the unequivocal statement of true saints and adepts the world over.

<sup>7</sup> Extract from the First Fundamental Proposition, *SD-1*, p. 79.



## THE INVESTIGATION OF SOUND AND LIGHT BY WESTERN SCIENCE AND OCCULT SCIENCE

The question remains as to what extent sound and light can be investigated by the methods of Western science and Occult Science. This is shown in the following table.

Contrasting Capabilities for Investigating Sound and Light by Western Science and Occult Science		
	Western science	Investigation by: Occult Science
<b>Sound</b>	<p>Very limited, except for consequential effects of Sound on the physical plane.</p> <p><i>Reason:</i> Sound is related to, and is the agent of Divine Consciousness. It concerns the subjective aspect of reality. Therefore its function in the realm of manifestation is barely amenable to the objective methods of science for investigating the phenomenal world.</p>	<p>Almost exclusively.</p> <p><i>Reason:</i> Sound concerns the subjective aspect of reality. Therefore it is amenable only to the subjective methods of yoga for investigating subtle levels of mind and consciousness.</p>
<b>Light</b>	<p>Possible, especially the 'outermost shell' as physical light.</p> <p><i>Reason:</i> Light is related to, and is the instrument of Divine Power. It concerns the objective aspect of reality. 'Crystallized light', or matter, is the primal material of the phenomenal Universe. Therefore Light, or Energy, can be investigated by the objective methods and instruments of science.</p>	<p>Fully possible.</p> <p><i>Reason:</i> Occult powers can be used to transcend the limitations of physical-plane instruments and investigate the nature of Light, or Energy, and Matter.</p>

Refer also to the Table in Section 2, which summarizes the main differences between sound and light on the physical plane.

It should be obvious by now that the primarily objective methods of Western science are only equipped to investigate, that too, partially, the role of light in manifesting the physical world and the perception of the forms thereof. The role of light in the perception of forms on super-physical planes, as also the role of sound in the manifestation of the Universe and perception of its forms, are virtually outside the purview of Western science and amenable almost exclusively to Occult Science, using the methods of yoga.

Western science on its own can deal with—incompletely—one-quarter of the total picture; whereas Occult Science (aided by Western science) can assimilate the whole Truth. A harmonious and balanced relationship between Western science and its parent, Occult Science therefore becomes an imperative.

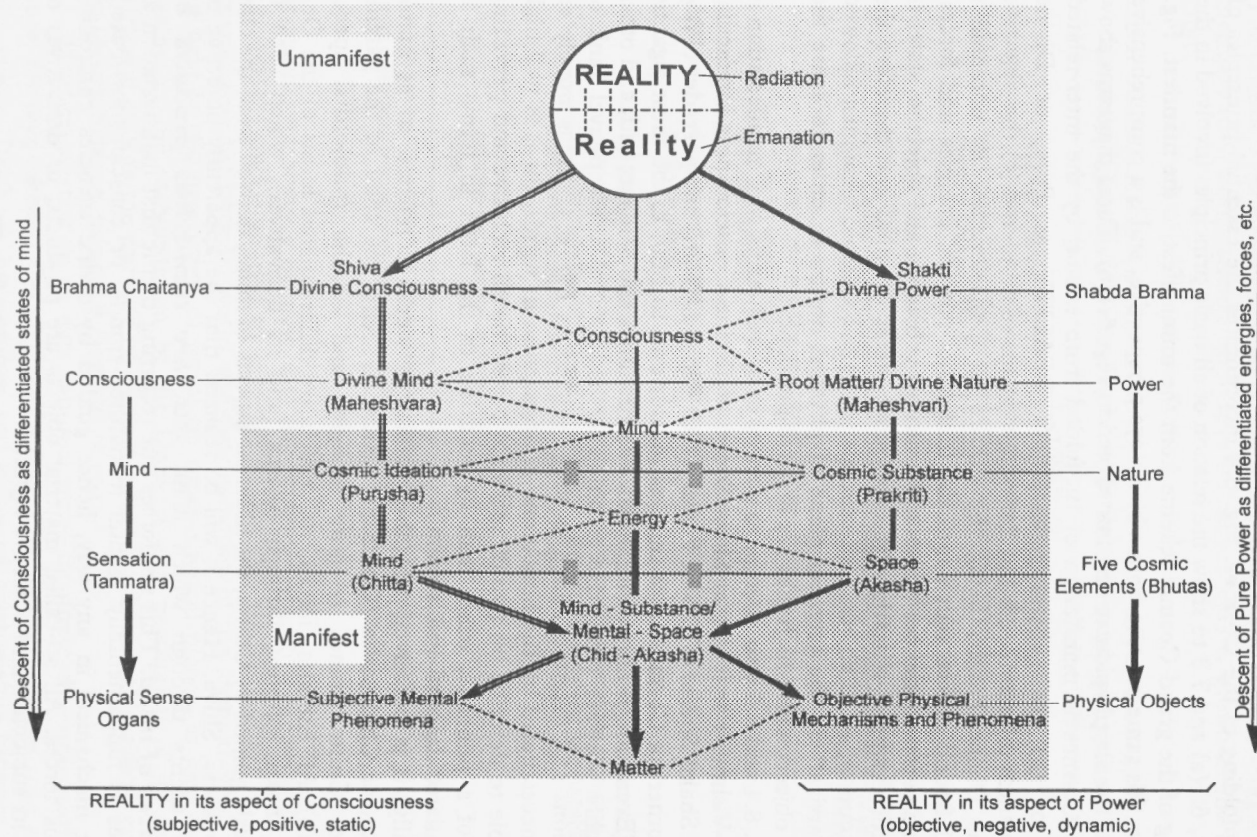
## THE UNFOLDING OF COSMOS

We now draw together all the material presented in this section and previously in Sections 5 to 7 in order to summarize, in broad terms, how Occult Science treats of the unfolding of the Cosmos. Fig. 8.4 incorporates the essential principles of Figs. 5.1, 6.1(a) and 7.3 to show the relation of all basic principles involved in the unfolding of the grand Cosmic scheme from the unmanifest to the manifest. Fig. 8.5 shows this same process from a bird's-eye perspective, and is a comprehensive version of the simple picture first introduced in Fig. 6.1(b). These diagrams show how the Cosmos is manifested or un-folded from *within*, by the inter-related descent of (a) the subjective aspect of REALITY as Pure, or Divine Consciousness differentiated into the various states of mind and (b) the objective aspect as Divine Power, being the vehicle of Consciousness as unmanifest Potential Sound differentiated into the numerous powers, energies and forces. The broad correspondences between the various subjective and objective states is shown; for example, sensation (the subjective states of mind and therefore the mental counterpart of objects) corresponds to the five Cosmic Elements; followed by the 'arrival' on the physical plane of physical organs in order to sense the material objects with which they are in correspondence.

Figs. 8.4 and 8.5 also attempt to portray in overall terms why manifestation is Brahma-Vishnu. For it is that Shiva *Stream* of Divine Consciousness interacting with the Shakti *Stream* of Divine Power which expands (*Bhri*) and pervades (*Vish*) every 'corner' of Cosmos from smallest infusorium, to Man to the most gigantic galaxy. (Even though Shiva and Shakti, Parabrahman and Mulaprakriti, and other such highly abstract terms are traditionally assigned to the top-level rank of descriptions and diagrams, such as that depicted in Fig. 8.4, this is merely an artifice necessitated by the limitations of description in words; for it is well-nigh impossible to describe on two-dimensional paper the all-inclusive and pervading quality of a principle, other than by referring to the latter in terms such as 'differentiated descent' and 'stream'.)

Finally, it is perceived why the manifested world is referred to as mind-substance, or Chidakasha (Chitta plus Akasha), being the child of the parent-principles Chitta (mind, or pure thought) and Akasha (primordial space-substance). All energies, forces, etc. which are differentiated forms of the One Power, Shakti, ex-press through Akasha (and its derivatives), which itself is consciously guided by Chitta, the different aspects of mind, derived from the One Consciousness, Shiva. Hence it will be realized that the apparently objective or material agents through which mind acts, ***are themselves products or derivatives of mind***. This reinforces our recurring theme that manifestation as Universes is fundamentally mental in nature—mind-, or consciousness-based, and not mechanical in any way, hence guided by divine agencies controlling conscious forces. All so-called material objects are products, or derivatives of mind in its subjective and objective aspects.

Figures 8.4 and 8.5 show, with a force, that whereas Western science may divide its field of research into the origin of the Universe, the nature of



**Fig. 8.4** From Unity to Diversity - The Unfolding of Cosmos from the Unmanifest to the Manifest

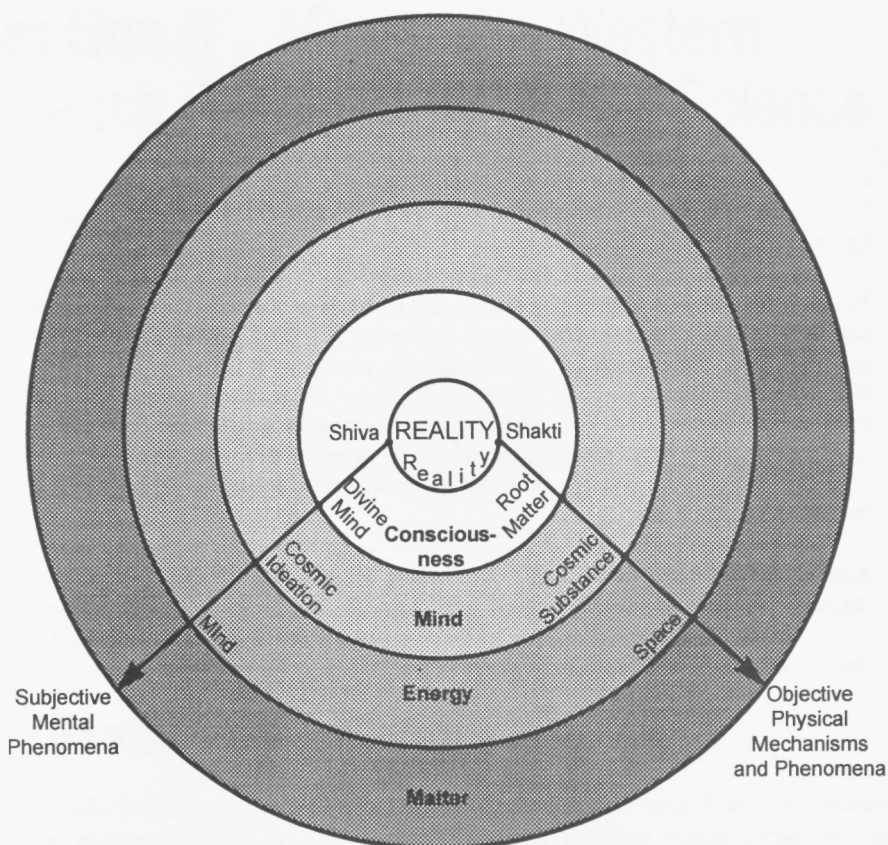


Fig. 8.5 The Ripples of REALITY - From Ever-Being to Always-Becoming

consciousness and the nature of sound and light, or in any other way it pleases, yet Occultly speaking, all these subjects constitute the various forms of an individual whole, rooted in:

**MIND [which] is the Real, Energy is its appearance. Matter is the form taken by radiation or energy.**

PAUL BRUNTON<sup>8</sup>

8 *The Notebooks of Paul Brunton*, Volume 16, Part 3: World-Mind, Nature of World-Mind, para. 66.



# Section 9    Mirages in Western Science Resolved by Occult Science

**Materialistic, Physical Science is honey-combed with Metaphysics.**

*THE SECRET DOCTRINE*<sup>1</sup>

The Esoteric Doctrine may well be called . . . the “thread doctrine,” since, like Sûtrâtmâ . . . it passes through and strings together all the ancient philosophical religious systems, and . . . reconciles and explains them. We now say it does more. It not only reconciles the various and apparently conflicting systems, but it checks the discoveries of modern exact Science, showing some of them to be necessarily correct, since they are found corroborated in the Ancient Records.

*THE SECRET DOCTRINE*<sup>2</sup>

Modern Science is laboriously re-discovering through mathematics and experimentation a fraction of what the Sages of antiquity knew through acute reflection and meditation.

PAUL BRUNTON<sup>3</sup>

## INTRODUCTION AND APPROACH

Occult Science is not bent on toppling, but rather on uplifting Western science to an even nobler position, by using examples from Western science itself to show how it is rooted in the deeper substratum of Occult Science and Philosophy (as our opening quotation states). It is again emphasized that Occult Science does not take issue with Western science insofar as the latter deals with the explanations of the immediate objective mechanisms at work. Accordingly then, Occult Science does not deny a mechanically-based model for the origin of the physical Universe, or brain cells for human physical consciousness, or material vibrations to account for light and sound—all on the plane of physical effects. The gross error however lies in the unwarranted assumption that such mechanistic theories have revealed all, including causative factors, and that nothing lies beyond the threshold of the senses. To materialistic scientists, mechanical descriptions are the real thing; to Occultists, they are the shadows, or ghosts of the One Reality.

Furthermore, it is the failure of Western science to appreciate the multiple-imaging nature of the ‘as if’ and ‘as though’ characteristic of the intellect-based principle of mathematical modelling and sensory nature of physical ex-

---

1 SD-2, pp. 207–8.

2 *op. cit.* pp. 335.

3 Slightly adapted by the writer from Paul Brunton, *The Hidden Teaching Beyond Yoga*, Samuel Weiser, 1988.



perimentation, that combine to create innumerable, contradictory maps of the One Reality. As explained in Part II, different maps are needed for different purposes and they are all valuable within their context of application, as long as they are not confused with the actual territory. This confusion occurs when noumenal causes are ignored, or denied, at the expense of their projections on a plane of phenomenal effects within the realm of the physical senses. Although many enlightened scientists appreciate that the physics formula is not the same as that which is formulated, i.e. the descriptions (maps) are not the same as the described (territory), the import of this distinction has not percolated into the matrix of the scientific community as a whole, as the superabundance of hypotheses in cosmology and quantum physics, for example, provides ample evidence.

The objective state of the manifested Universe is an expression of Divine Power which, by self-limitation, becomes increasingly differentiated and fragmented as It descends towards increasingly lower states of Itself, thus constituting that energy-matter which Western science studies to perfection at the physical level, (which is all that it chooses, and is able, to contact at present). The infinite permutations and combinations of this descent of One Power  $\rightarrow$  to  $\rightarrow$  infinite energy-matter gives the illusory appearance of a variety of forms and objects. Nature *in abscondito* is the manifold re-presentations or appearances of Nature *in actu*. All *in abscondito* appearances are fully subsumed in the One Real, *in actu*. This is the essential basis of resolving all problems in Western science by the wisdom of Occult Science.

We now suggest how Occult Science provides the key to unlock and resolve mysteries that Western science on its own, despite numerous conjectures and hypotheses, is unable to unravel. Naturally, we have to restrict our attention to a representative cross-section of the main issues of today under the principal scientific disciplines mentioned in Part I, namely, the origin of the Universe, the nature of consciousness, and the nature of sound and light. Our treatment is, perforce for the most part, of a general and rudimentary nature—even speculative at times. This is because it is more useful at this stage to gain a broad appreciation across a range of topics, rather than to become trammelled by the minutiae of any one of them. In any case, it has never been our intention to achieve a complete resolution (even if that were possible), but to indicate the contribution of Occult Science towards *pointing the way* for such to occur. Nevertheless, the topic of the origin of the Universe has been treated in some depth in order to provide an example of the range and profundity of insights that can be gleaned from a resolution of problems in modern cosmology by an import of the perennial wisdom of Occult Science.

**In this section:**

- |  |   |
|--|---|
| • Overall basis for all resolutions              | • Uncertainty and variations in Nature  |
| • Origin of the Universe                         | • Vacuum and the coupling of sound and light                                    |
| • Infinite energy, thermodynamics, entropy       | • Aliens, UFOs, etc.  |
| • Ultimate building block of matter, gluons      | • Dowsing   |
| • Grand unifying theories                        | • Acquisition of Occult powers, plus eye-witness account of acoustic levitation |
| • Consciousness, matter, energy and force        | • Union of consciousness and light  |
| • Basis of the quantum                           | • Way forward   |
| • Particle-wave nature of all entities in Nature |   |

**OVERRIDING BASIS FOR ALL RESOLUTIONS****Proposition**

Western science justly marvels at, and acknowledges the supreme co-ordination, balance, adjustment and sheer variety in Nature. But other than formulating physical mechanisms for such miracles, accepts the latter without bothering to ask WHY—that dreaded three-letter word that is an anathema to science. For example, why does the English swallow, barely the size of a man's clenched fist, fly a total of 180,000 miles, equivalent to a hundred times around the earth, each year; which adds up to some 1,500 times around the earth, over 2.5 million miles in all, during its 15 year life! Then why does the maple leaf retain its five-leafed characteristic despite the millions of maple leaves and leaves of other trees; yet no two maple leaves are exactly the same! How is such complexity of form united? Why does the weaving bird weave its nest or the spider spin its web using the same techniques of the weft and the warp as in textile weaving (see Section 7). How did they learn to weave, and who taught them? Why is the electric charge of, say, a proton just what it is, and why have the fundamental constants in Nature (e.g. gravitational constant, speed of light) just the precise (though not necessarily invariant over time) values to support life? The questions are literally unending——

**Occult Elucidation****GENERAL OCCULT PRINCIPLE**

Referring to Fig. 9.1 (a), the overriding reason is that the mutual relationship of the Shiva~Shakti polarity is always maintained *at each level of descent and differentiation* of this primary duality. Thus every phenomenon is a *joint* re-

presentation, in varying proportions, of dual, polar principles that reflect and express at different levels of manifestation, the primary polar principles of Consciousness and Power. Whenever Consciousness is in the foreground, Power is in the background, and vice versa. So whether a particular phenomenon presents as various expressions of mind, or different types of energy, depends on whether, respectively, the Shiva-derived quality or Shakti-derived function predominates. This is illustrated in Fig. 9.1 (b) by the scientific analogy of a bar magnet where, the further we move along the axis away from the neutral point,

---

**Every natural energy and force is always associated with conscious, intelligent agencies. Similarly, every physical form always has consciousness in the background.**

---

the positive or negative polarity predominates, depending on our location. The neutral point of the bar magnet where the positive and negative polarities are in equal balance illustrates the state of Reality where Consciousness and Power are fully harmonized.

(In the widest and most general sense, Western science as a *whole* displays the Shakti-derived function in predominance; but it must have the Shiva-derived quality as its background—exhibiting itself as the contributions to science of religion, art, mysticism, etc. Whether individual scientists admit this or not is immaterial. The greatest of scientists like Newton, Leibnitz and Einstein have unequivocally declared their feeling of contact with divinity and sensed their role as instruments of the Divine—an idea obviously revolting to some of our modern savants, but it is the humble statements of the few *great* scientists that matter, not the proud commentary of their many puppet imitators.)

## CORROBORATION FROM WESTERN SCIENCE

The above assertion from Occult Science finds ample demonstration from its best ally—Western science. Science has recently discovered that all forces like magnetism and gravitation that are predominantly static in character, are in fact dual in nature, and have therefore, simultaneously, a dynamic character that would exhibit waves. For example, the dual nature of gravitation is exhibited by (a) the graviton, which is a hypothetical, massless mediating particle (static

---

**All phenomena in Nature exhibit simultaneously, though in different proportions, the Shiva-derived quality of Consciousness and the Shakti-derived function of Power.**

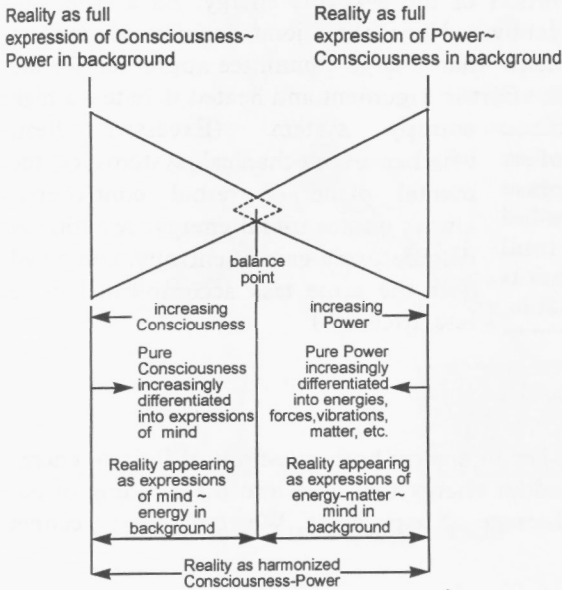
---

character) required by quantum theory to transfer the force of gravity between two objects having mass; and (b) gravitation waves, which were experimentally proven by Weber<sup>4</sup> in 1970 (and predicted by Einstein on the basis of his general theory of relativity).

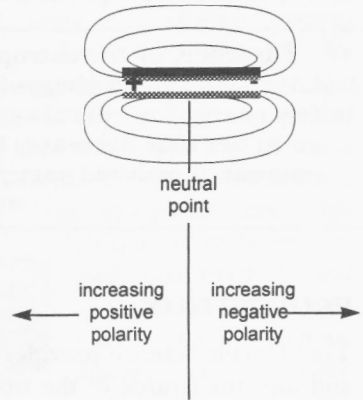
The above arguments are taken a stage further later on, where we describe in *simple terms* how quantum physics has shown that all physical phenomena can display a particle-like or wave-like character *at the same time*. This has been experimentally proven with respect to light.

---

4 Refer to the work of Professor J. Weber, University of Maryland, USA, 1970.

**Occult Principle**

(a) Polarity of Consciousness and Power

**Scientific Analogy**

(b) Polarity of a Bar Magnet

**Fig. 9.1** Manifold Expressions of Consciousness and Power as Mind and Energy**RESOLUTIONS REGARDING THE ORIGIN OF THE UNIVERSE****The Problem of Infinite Energy Associated with the Law of Conservation of Energy, The Second Law of Thermodynamics and Entropy**

The Law of Conservation of Energy in Western science states that energy, or its equivalent in terms of mass, can neither be created nor destroyed, but only converted into another form of energy.

The Second Law of Thermodynamics in science is a manifestation of the arrow of time. In simple terms this means that a system left to itself will wear out in time. One facet of the law is that heat cannot flow 'uphill' from a cold object to a hotter object of its own volition. Another facet is that a neatly organized library will soon turn into a disorganized pile of books, unless energy is directed towards regular tidiness. A heap of books do not rearrange themselves, of their own accord, onto library shelves. Related to the second law is the concept of entropy. Entropy is a measure of the amount of disorder in a system; thus for a given

amount of energy, a low entropy system converts a greater proportion of the total energy into useful work; and a high entropy system, being more disordered, will be able to convert a lesser proportion of the available energy. As a trite, but illustrative example, two persons motivated to make a joint decision use far less time and energy—low entropy system—than a large committee appointed for the same purpose and expending much effort in argument and heated debate—a high

entropy system. (Excessive heat, whether in mechanical systems or the mental plane of verbal controversy, always wastes useful energy, resulting in disorder, or a gain in entropy, compared with the same task accomplished using less 'friction'.)

---

**Disorder, or the entropy, of an isolated system will always increase unless energy, or effort is expended on it; but that decreases the total amount of ordered energy that is available.**

---

## PROPOSITION

That Occult Science provides the key to answer both questions of infinite energy and also the source of the tremendous energy that goes into the building of our Universe. Whereas there is no shortage of hypotheses, Western science cannot explain these facts as yet.

## OCCULT ELUCIDATION

1. Referring to Fig. 9.2, because:
  - infinite Consciousness is released or projected through Point-Centres spawned from the Mahabindu; and
  - Consciousness and Power<sup>##</sup> are inextricably bound –
2. Therefore as a result each Point-Centre has, *pari passu*:
  - tremendous potential to unfold mind; and
  - tremendous potential to express energy.

<sup>##</sup> Recall that:

1. Power is the source of all energy, the latter being the differentiated forms or expressions of the former; and
2. Because Power is co-related with its polar opposite, Consciousness, we may say that Power-Energy is 'steered' by Consciousness (or Power-Energy propels Consciousness). Power is always at the service of Consciousness, and vice versa.

*Note:* the terms Energy and Power are used above in the 'Occult' sense, and not according to the strict scientific definition of the capacity of a system for doing work and the rate of expenditure of energy, respectively.

## RESOLUTION AND IMPLICATIONS

Reality projected through the Point can release *whatever* amount of energy is needed for a manifested system. The infinite permutations and combinations of

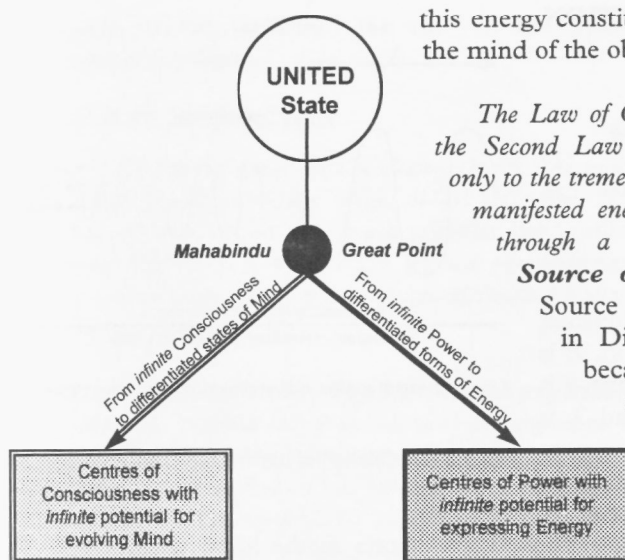


Fig. 9.2 Resolution of the 'Infinite Energy' Problem

this energy constitute the objective basis (in the mind of the observer) of the Universe.

*The Law of Conservation of Energy and the Second Law of Thermodynamics apply only to the tremendous, but yet finite quota of manifested energy in a Universe released through a Point, but not to the Source of that energy.*

For the Source is Divine Power (inherent in Divine Consciousness) and because it is an unmanifested and integrated state, this

Source is truly infinite both quantitatively and qualitatively. The Supreme Consciousness, Shiva, is endowed with, and can call upon, infinite and inexhaustible Power,

Shakti, and therefore can supply whatever energy is needed to manifest a world system, Universe, or Cosmos. This is why some intuitive scientists have posed the question of whether the Universe provides a 'free lunch'. (Alan Guth of the Massachusetts Institute of Technology has remarked that 'the universe is the ultimate free lunch'.) The Divine being Unmanifested and Integrated has infinite Power-Energy and is a state of, so to say, zero entropy. That which emanates may be depleted, but that which radiates can never exhaust its Source. ***The REAL is therefore never diminished by its radiations.*** So no OPEC meetings are ever needed to determine the price of energy—it is free for ALL users!<sup>5</sup>

**The Unmanifest Reality or the Supreme Consciousness of Shiva who is the hidden Ruler of all manifested Logoi is endowed with infinite and inexhaustible Power or Shakti.**

Occult maxim<sup>6</sup>

## Scientific Illustration of How a Point Can Release Infinite Energy<sup>7</sup>

### PROPOSITION

That it is theoretically possible to show, using the basic equation of quantum physics, that infinite energy can be released through a *single* point.

<sup>5</sup> This is certainly not to imply that in life we get more than we deserve.

<sup>6</sup> I. K. Taimni, *Science and Occultism*, The Theosophical Publishing House, 1987, pp. 164–5.

<sup>7</sup> Adapted from Taimni, *op. cit.*



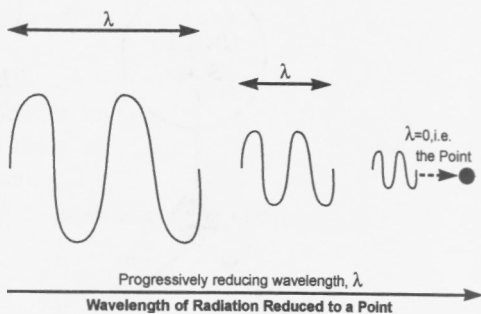
## SCIENTIFIC ELUCIDATION

Referring to Fig. 9.3 –

1. Planck's equation states  
 $E = hf$  ..... (1)
2. But since  $f = v/\lambda$ , we can easily re-write (1) as  
 $E = hf/\lambda$  ..... (2)

where  $h$  is Planck's Constant (equal to  $6.626 \times 10^{-34}$  J.s),  $E$  is energy,  $v$  is velocity of wave,  $f$  is frequency of radiation and  $\lambda$  is wavelength of radiation.

Now as the wavelength,  $\lambda$ , in (2) is progressively reduced as shown in the accompanying diagram,



A Point is a wave of infinitely small wavelength and infinitely large frequency

**Fig. 9.3** Resolution of the 'Infinite Energy' Problem

---

**The ideal, or mathematical point may therefore be regarded, in one sense, as a wave of zero wavelength and infinite frequency—a centre of vibratory energy.**

---

we obtain in the limit, when  $\lambda = 0$ , the situation where radiation takes place through a point. For this case, then,  $E = hv/0 \rightarrow \infty$ , and such radiation carries an infinite amount of energy.

## RESOLUTION AND IMPLICATIONS

Thus one point could, theoretically, release all the energy needed to manifest a Universe.

In the Big Bang model of the origin of the Universe (discussed below) it is stated that 'At the big bang itself, the universe is thought to have had zero size, and so to have been infinitely hot.'<sup>8</sup> Substitute 'infinite energy' for 'infinitely hot', and 'Point' for 'zero size', and we find Western science practically re-stating the ancient Occult doctrine of infinite energy released through a Point!

The role of the Point as a meta-physical agency or 'channel' for releasing energy is further discussed below in connection with current scientific research, for example at CERN to discover the ultimate building blocks of matter.

## Occult Cosmology and Big Bang Theory

### PROPOSITION

That Big Bang, the most popular theory in Western science about the origin of the Universe is an incomplete account (a faint echo) of the Occult doctrine on

<sup>8</sup> Stephen W. Hawking, *A Brief History of Time*, Bantam Press, 1988, p. 117. Hawking has himself revoked the zero size concept in the light of further work in quantum physics and inflation.

cosmology, which includes<sup>9</sup> the role of the Point in releasing energy for manifesting a Universe.

## OCCULT ELUCIDATION

Section 2 of Part I presented a chronicle of the salient features of divers ideas from Western science on the origin of the Universe. It was mentioned that the Big Bang theory was by far the most popular description of cosmogony based on theoretical predictions supported by an accumulating weight of astronomical evidence. There are two main versions of the Big Bang model that partly resemble the Occult doctrine.

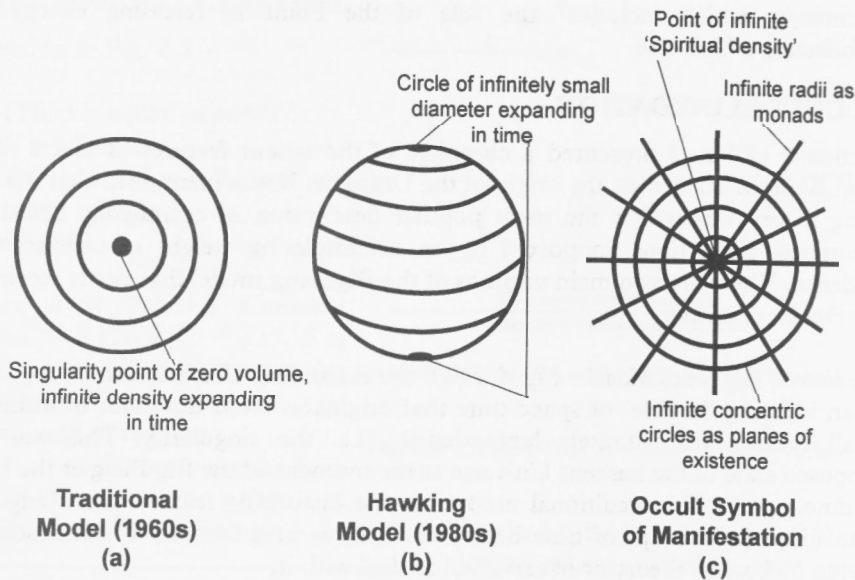
*Traditional Big Bang Model – Fig. 9.4 (a):* the expanding Universe can be regarded as an inflating ‘bubble’ of space-time that originates from the point of infinitely small volume and infinitely large density, i.e. the singularity. This was the supposed state of the nascent Universe at the moment of the Big Bang at the birth of time,  $t = 0$ . This traditional model has the disturbing feature of an ‘edge’ of time since the concept of time before the bang is meaningless, Western science having no base of theory or observation to deal with it.

*Hawking’s variation on the traditional model – Fig. 9.4(b)*<sup>10</sup>: in attempting to surmount the singularity problem Hawking has used an ingenious mathematical technique. By changing the time measure in Einstein’s field equations to imaginary time, he has placed time on a mathematically equivalent basis to space in these equations. (Imaginary time is time multiplied by the imaginary number,  $i$ , which is the square root of minus one ( $\sqrt{-1}$ ), which has the effect of a change in mathematical co-ordinates. Imaginary numbers are a perfectly respectable tool of mathematical manipulation, the term ‘imaginary’ having nothing to do with any notion of illusion or maya, etc.) By thus treating time as if it were imaginary space,<sup>11</sup> this provides a model where (a) the Universe commences as a point, or an infinitely small circle at the bang at time zero; (b) swells into progressively larger circles with the passage of time, until the stage of maximum expansion is reached; whereupon (c) the reverse process of shrinkage and ultimate contraction to an infinitely small circle, or point occurs resulting in the death of the Universe. Because time has been made mathematically equivalent to space, the singularity problem does not arise. For, as at the north pole of the earth there is no ‘edge’ to the globe and all directions are south, there being no direction ‘north’, so in Hawking’s model there is no ‘edge’ to time since all time directions after the bang at zero time are the future, there being no direction of time corresponding to ‘the past’. Thus crossing the moment of zero time leads to the future just as crossing the point of the north pole of the earth always leads south. So even though the Universe would have almost zero size at the Big Bang (‘North Pole’) and at its

9 Cosmology is a general term for cosmogony and cosmogenesis, on both of which the Occult doctrines reign supreme.

10 Hawking, *op. cit.*, pp. 137–40.

11  $it$  plays an analogous role to the  $x$ ,  $y$  or  $z$  co-ordinates.



**Big Bang Models in Science Incorporating the Occult Symbols of the Point and Circle**

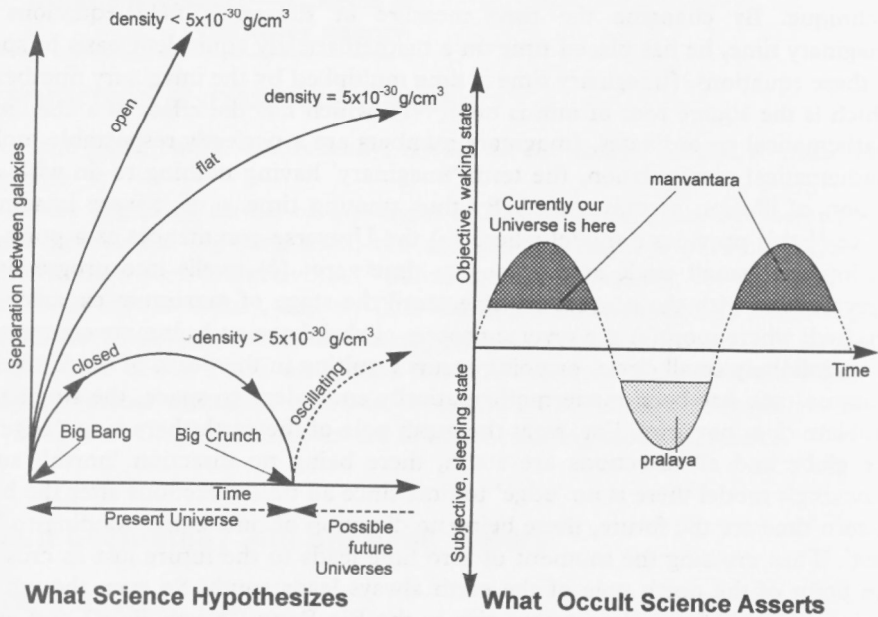


Fig. 9.4 Occult Cosmology and Big Bang Theory

---

**Whichever scientific model we use, the essence of the Big Bang theory of cosmology states that all the matter and radiation in the Universe originated from a cataclysmic explosion that occurred between ten to twenty billion years ago. Before that, time simply did not exist, so it is senseless to inquire of the state of affairs before the bang.**

---

death ('South Pole') these points would not be singularities and so the laws of science would hold at them just as they do at the poles of the earth. Because the 'poles' of the Universe mark the beginning and end of time as shown in Fig. 9.4(b), it is meaningless, in scientific terms, to inquire of time before the Big Bang, or after the death of the universe. Finally, note that this model is not 'better' than the traditional model,

only different, just as an ordnance survey map and street map of the same district fulfil different purposes and are therefore different.

### Occult Commentary

1. Big Bang is a physical, therefore materialistic model of the sublime Occult doctrine, or to put it more kindly, one of many demonstrations of how physics is honeycombed with metaphysics. Occult Science does not deny that there might have been a time when some regions, or perhaps the entire physical Universe, was dominated by hot, radiant energy. But what is unacceptable is the regression backwards, *in a literal sense*, of the currently expanding Universe to a physical point of infinitely small volume from which the physical explosion occurred—out of *NO-thing*, about which Western science remains purposefully silent. True, the physical Universe is emanated through the instrumentality of the point, but:
  - (a) this Point, or rather Points are the Bindus or Monads—an entirely metaphysical agency and not 'a physical point of near-zero volume and enormous density, other than regarding such a physical point in the purely figurative sense of a descriptive map, and not the described;
  - (b) an infinity of such ideal, or mathematical points is required for manifesting a Universe (see Section 7), not a single point as Western cosmology assumes;
  - (c) whereas the Big Bang assumes the point existed in the past at zero time, Occult Science proves that the Point-Principle and the Points, Mahabindu and Bindus are eternal (as are their ultimate, opposite limits as the Space-Principle and Space, Mahakasha and Akasha).
2. The expanding point (traditional model), or enlarging circles (Hawking model), following the bang are definitely in the physical realm, but the origin as the zero-volume point or equivalent zero-diameter circle is a mathematical construct, which is somehow assumed to portray the 'physical' moment of creation. So whether we consider a point of zero volume or circles of infinitely small diameter, the fact that the origin of the Universe is modelled in terms of such infinitely small, mathematically-derived entities, having zero extension in space, should provide Western science with a clue to examine the problem from the higher standpoint of mind (*res cogita*) and metaphysics, in addition to matter (*res extensa*) and mathematical physics (for what is mathematics if not

the mind-derived relationship between concepts, and if the origin of the Universe is so mathematically based, then it must have a logical relationship at the level of mind).

## RESOLUTION AND IMPLICATIONS

### Where Occult Science and Western science Overlap and the Patterns that Connect

Encouraging areas of overlap between scientific discoveries and the Occult affirmations are listed below.

1. Observe Fig. 9.4(c) where both the circle and the Point are shown as an archaic *symbol* of manifestation. The radii emanating from the Point symbolize monads as sparks (radii) from the central Divine Flame or Principle (Point). These monadic sparks are the differentiated aspects or forms of the One, unmanifested and integrated Divine Principle, and the expanding concentric circles symbolize increasingly differentiated planes of existence. It is seen how the monads, which mirror and actualize an aspect of the Divine Principle, approach the consciousness of other monads as we move inwards along the radii to their unified source from which they all arise. Conversely the further away we move outwards from the centre, the greater the separation and apparent disconnection between monads as they become increasingly identified with grosser forms of matter and less refined states of mind.

Thus, the Point is not a near-zero volume, physical point of enormous density as Western science posits, but a *meta-physical Point of infinite spiritual potential*—the Mahabindu and its correspondences in the realm of manifestation—Bindus. In other words, ‘every physical point is but the phenomenal expression of the noumenal, metaphysical Point.’<sup>12</sup> Furthermore, expanding space is not just physical space but more fundamentally, *mental space* as Mahakasha, and its correspondences in manifestation—Akasha and Chidakasha (see Fig. 8.4 in Section 8). The contrast between the Occult truth and scientific models of cosmogony is shown in the Table below.

---

<sup>12</sup> SD-2, pp. 354–5.

# Occult Science and Modern Science on Cosmogony

## Eternal Truths of Cosmogony from Occult Science

Mahabindu, the Great Point is the eternal, ideal meta-physical Point-Principle for releasing infinite Consciousness and Power, which proliferates moving (mathematical) Points, Bindus, constituting the ultimate nature of the manifested Universe.

Mahakasha, Great Space is the eternal, meta-physical Space-Principle of the opposite limit, or ultimate expansion of the Great Point.

'THE RAY SHOOTS THROUGH THE VIRGIN EGG, THE RAY CAUSES THE ETERNAL EGG TO THRILL, AND DROP THE NON-ETERNAL GERM (Periodical), WHICH CONDENSES INTO THE WORLD-EGG.  
part of Stanza 3, Sloka 3, *SD-1*, p. 133.

'THE MOTHER SWELLS, EXPANDING FROM WITHIN WITHOUT, LIKE THE BUD OF THE LOTUS.'  
part of Stanza 3, Sloka 1, *SD-1*, p. 92.

Mahabindu, the Great Point has infinite spiritual potential.

'Points serve as vehicles of atoms on various planes and kingdoms of nature to emerge finally as conscious Jivatmas on the physical plane.'

*The Secret Doctrine.*

'Thou hast to study the voidness of the seeming full, the fullness of the seeming void.'

*The Voice of the Silence,*  
The Seven Portals, verse 243.

Sunyata, meaning the Voidness, is the term given by the Mahayana School of Buddhism to draw attention to the unreality and illusory nature of our objective Universe and worldly phenomena.

## Scientific Versions of Cosmogony as Current Big Bang Theory

The ultimate (mathematical) point (singularity) \*\*, or infinitely small circle\*\* exists at the moment of the Big Bang at zero time.

Upon the bang, this point expands,\*\* or circle swells\*\* as space-time to constitute the expanding physical Universe studied by Western science.

The point has near-zero volume,\*\* or the circle has infinitely small diameter,\*\* and enormous density.

'... there was a time, called the big bang, when the universe was infinitely small and infinitely dense. If there were events earlier than this time ... their existence can be ignored because it would have no observational consequences ... so they should not form part of a scientific model of the universe.'

Hawking, *op. cit.*, pp. 8, 9, 46.

'... the universe and everything in it may be no more, and no less, than one of those vacuum fluctuations that allow collections of particles to burst forth out of nothing, live for a while, and then be reabsorbed into the vacuum.

John Gribbin, *In Search of Schrödinger's Cat*,  
Black Swan, 1994, p. 271.

\*\*Traditional Big Bang model.

\*\* Hawking variation on traditional model.

Further areas of overlap between the Occult and scientific standpoints are now discussed.

2. The Hawking model presents the Universe as 'a completely self-contained package of space-time and mass-energy, expanding out of nothing and contracting back to nothing.'<sup>13</sup> Here Western science corroborates the Occult

13 Hawking, *op. cit.*, pp. 137-9.



doctrine about the fabric and form of the Universe being woven and shaped by space-time and energy-mass, respectively, as explained by Einstein's general theory of relativity. But unless it be clearly acknowledged that the purely mathematical model (the map) involves no consideration of real physical causes, to postulate an actual Universe 'expanding out of nothing and contracting back into nothing'<sup>14</sup> would be 'so great an absurdity that .. no man, who has in philosophical matters a competent faculty of thinking, can ever fall into it.'<sup>15</sup> More sense would adhere if by 'nothing' scientists meant *NO-thing*, namely the vacuum state as a hive of potential activity as discovered by quantum physics. Whereas some scientists do indeed recognize a substratum, which is one alone without a second and of the quintessential nature of consciousness, as the backdrop of all phenomena and transitory existence, other scientists do not accept any essential Reality and so take the word 'nothing' in the literal sense. But in any case we ask what is the use of such variations of the traditional Big Bang model other than to titillate the intellectual palates of academic scientists. Furthermore, are not other standpoints also worthy of attention, such as the Occult doctrines promulgated by the sages—by no means just a model, but a re-presentation (through symbols and other means) of the actual *realization through experience* of truth, un-defiled by man-made intellection?

Whereas Western science does admit, in principle, the distinction between a model and its underlying Reality, in practice, such distinctions sometimes get blurred when a particular concept grips the imagination and overturns the discriminating faculties of some scientists. For example, Hawking correctly states that 'a scientific theory is just a mathematical model we make to describe our observations: it exists only in our minds.'<sup>16</sup> But then he goes on to declare that we can be 'fairly confident that we have the right picture, at least back to about one second after the big bang.'<sup>17</sup> This is no statement of the 'as if' principle of mathematical modelling, but a confident assertion of the actual physical state of affairs (as he sees it). The confusion between the 'maps and the territory' is evident when scientists disdain philosophy.<sup>18</sup>

3. Invoking imaginary time to circumvent the singularity problem at the 'edge' of time associated with the traditional Big Bang model alludes to the mayavic, mind-constructed characteristic of time which Occult Science affirms and Western science is slowly discovering for itself.
4. Hawking has spatialized time (by making it mathematically equal to space as explained above); and Ilya Prigogine<sup>19</sup> has adopted an approach of temporalizing space. These two approaches in combination allude to Brunton's

14 John Gribbin, *Schrödinger's Kittens*, Weidenfeld & Nicolson, 1995, p. 213.

15 Words from Newton's famous *Third Letter* to Richard Bentley (reproduced also in *SD-2*, p. 214) and applying of course to the question of gravity being caused by an agent—a remark that could as well apply to the present context of a Universe *ex nihilo*, without the above mentioned qualification.

16 Hawking, *op. cit.*, p. 139.

17 *ibid.* p. 118.

18 Newton, by contrast, at the outset of his *Principia Mathematica* cautioned his readers never to confuse the mathematical concept, i.e. the 'as if's', with real causes—the 'as is'.

19 Prigogine has developed mathematical models of non-equilibrium systems which provide a new angle on the origin of the Universe and evolution of life.

seminal remark that in order to understand ultimate verities we should attempt to 'spatialize mind and mentalize space'.<sup>20</sup> Were our scientists to place the emphasis on mind consciously, rather than unconsciously via mathematics, they would be quantum leaps ahead in their UNDER-standing (as opposed to modelling) of cosmogony.

5. The Hawking model predicts that the expansion of the Universe will eventually cease and then the reverse process will supervene resulting in the Universe shrinking progressively towards its ultimate death in a Big Crunch. The presence of 'dark matter' in the Universe is thought to have a bearing on the deceleration and reversal of the expansion process, towards a contracted crunch. (As explained in Section 2, dark matter is matter that could comprise a large percentage of the total mass of the Universe but is undetectable except by its gravitational effects. Dark matter has not as yet been detected astronomically and its nature is unknown, but it is thought that it cannot all consist of normal, baryonic matter, i.e. protons and neutrons.)

Some cosmologists postulate a cyclically repeating pattern of Big Bang and Big Crunch previously outlined in Section 2 and shown in Fig. 2.3. This echoes the Occult doctrine of evolution and involution towards pralaya. Referring to the bottom section of Fig. 9.4 however, in the Occult scheme pralaya is not a 'deathly crunch', followed by an immediate rebound into activity, but a disappearance of the Universe from the plane of objectivity into a state of repose, or subjectivity for an enormous period of time, before the re-awakening of the Universe into another cycle of objectivity—corresponding to the sleeping, inactive state, before the waking, active state in Man.

6. The emergence of the bubble Universe out of NO-thing as postulated by metaphysically inclined cosmologists bears a resemblance to the Occult doctrine on Space. The vacuum of Western science is similar to the 'fullness' of the Void of Occult Science,<sup>21</sup> or the Sunyata<sup>22</sup> of the Buddhists.

### Where Western science Stands Isolated

We list chief areas where Western science is at variance with Occult Science, or where the former has discovered facts, but is at a loss to explain them.

1. The Universe exploded into birth and subsequently expanded because of a most highly *improbable*, accidental confluence of just the precise and critical initial state of affairs to promote such genesis and subsequent expansion. Chief factors that appear (fortuitously) to have been delicately adjusted on a cosmic scale are:<sup>23</sup>
  - The expansion of the Universe seems to have been precisely set so that it neither accelerated uncontrollably to result in a Universe long since dissipated, nor has it recollapsed towards a crunch. (If one second after

<sup>20</sup> Adapted from Paul Brunton, *op. cit.*

<sup>21</sup> For example, H. P. Blavatsky, *The Voice of the Silence*.

<sup>22</sup> Refer to (a) B. J. Kashyap, *Abhidhamma Philosophy*, Bharatiya, Vidya, Prakashan, 1982, Book I, p. 189; (b) Sunyatasaptati of Nagarjuna.

<sup>23</sup> This subject is detailed in Roy E. Peacock, *A Brief History of Eternity*, Monarch Publications, 1989—a fine book dealing not only with the 'what' and 'how', but also the 'why' of cosmology.

the bang, the rate of expansion had been smaller by just one part in one hundred thousand million, million, the Universe would long since have recollapsed before reaching its present size.)

- The exact balance between the uniformity of the large-scale structure of the Universe and local non-uniformities (irregularities), such that galaxies could condense out and form. (With more uniformity, the Universe would have been a homogeneous 'soup'; less uniformity might have resulted in a Universe that could not develop as it has.)
- An ordered, delicate and dynamic balance in the physics, chemistry, biology and mechanics of the Universe, such that the latter operates as it does.
- Precise values of the seemingly unconnected fundamental constants in Nature (e.g. the speed of light, gravitational constant, Planck's constant, etc.) such that if these had varied by even 1%, the Universe could not have resulted. (The question of variations in these universal constants is discussed later.)

Some scientists try to explain away such an exquisitely contrived and skilfully orchestrated explosion as just one of those chance events—the futile example is often cited that a monkey seated at a typewriter could, by pure chance, faultlessly reproduce a Shakespeare sonnet. (The calculated chance of a monkey typing merely the word 'Monkey' is 1 in  $1.5 \times 10^{17}$ . The reader can estimate the chance and time taken to type out a sonnet by such inane means, and then move on to consider the chance of all necessary factors conspiring to manifest a Cosmos.) Other scientists recognize that although random behaviour *could* produce the works of Shakespeare, or explain the Universe, in fact it does not, because such behaviour contravenes the Second Law of Thermodynamics, which, simplistically paraphrased in the present context, is that monkeys will always behave like monkeys, leaving lofty literature to Shakespeare.

An Occultist has no difficulty in understanding these statistical or thermodynamical rationalizations, but surrenders them to the higher consideration that the purposeful 'choice' of initial conditions and universal constants demonstrates the action of what Newton might have called the 'Divine Power' or the 'effect of Choice rather than Chance.'<sup>24</sup> Such reference to Deity must never be confused with the notion of an external 'Creator God', who for *some* modern scientists, is a convenient graveyard into which all unsolved problems and inexplicable factors can be buried away until the possibility of their being exhumed by future (hopefully scientific) discoveries that could explain them.

2. Section 2 described the experiments at CERN where scientists now believe they can reproduce, on a small scale, the quark-gluon plasma existing during the first moments of creation at times less than one millionth of a second after the Big Bang. But such high energy particle experiments do not necessarily

24 Refer to *Four Letters from Sir Isaac Newton to Doctor Bentley Containing Some Arguments in Proof of a Deity*, in *The Correspondence of Isaac Newton*, eds. H. W. Turnbull, J. F. Scott, A. Rupert Hall and Laura Tilling, 7 vols., Cambridge: Cambridge University Press, 1959-77, vol. 3, pp. 233-56. In these letters Newton makes 26 explicit references in 10 different ways to a Deity.

reproduce the first moments of creation. This is because it is *arbitrarily assumed* that the chemical elements, chemical combinations and properties of the elements would all be the same as what existed at the supposed moment of (physical) creation. The corollary is the arbitrary assumption that the fundamental constants and laws of physical science, as now understood, were exactly the same as say, ten seconds after the bang. And following directly from 1. above, the smallest alteration in the laws of science would have resulted in a very different Universe (or lack of a Universe) from the one we (think we) know. Two seminal passage in *The Secret Doctrine* state:

**A great number of names referring to chemical substances and other compounds, which have now ceased to combine together, and are therefore unknown to the later offshoots of our Fifth Race, occupy a considerable space [in the Archaic STANZAS]. As they are simply untranslatable, and would remain in every case inexplicable, they are omitted, along with those which cannot be made public.<sup>25</sup>**

**Elements and Sub-elements unknown to our Earth, and these are regarded by modern Science [of the nineteenth century] as distinct individual Elements, whereas they are merely temporary appearances, changing with every small cycle within the Manvantara . . .<sup>26</sup>**

Accordingly, then, the fact that theory and experiments show the Big Bang to be a viable model is no guarantee of the actual state of affairs because both theory and experiments draw upon the same values of chemical characteristics and fundamental constants. It is not so much a matter of experiment corroborating theory, but rather of experiment being in step with, i.e. consistent with, theory. Alter these chemical characteristics, introduce new elements and compounds, and vary the fundamental constants by less than 1%, and theory and experiment could both display a radically different set of circumstances corresponding to different laws of science, resulting in a entirely different kind of Universe to that prevailing. For example, if the electron charge, currently  $1.6 \times 10^{-19}$  coulomb, were  $1.8 \times 10^{-19}$  coulomb in the remote past—a purely *fictional* value, then experiments involving the higher charge electrons would exhibit results pertaining to the higher charge, which value would also be an input to the theoretical calculations which, if they were reasonable, would corroborate the experiment.<sup>27</sup>

---

**It is an arbitrary assumption by Western science that the chemical elements, fundamental constants and laws of science have always remained the same and unchanging with time.**

---

<sup>25</sup> SD-2, p. 200.

<sup>26</sup> SD-2, p. 397.

<sup>27</sup> This example bears a resemblance to the scientific attitude towards aliens, whereby it is *arbitrarily* assumed that the latter, if they exist, would be like Man himself. The message as always is: things are not what they appear to be and, there is no reason why everything in the Universe should be accessible by, or bear any relation to, ordinary Man.

3. In Occultism there is no 'death' of the Universe, but a dissolution and disappearance of the latter from the plane of objectivity. Similarly *manvantara* is the (re-)awakening of the Universe from a period of rest or obscurity, out of *NO-thing*.
4. Western science postulates the 'birth' of time some ten to twenty billion years ago, before which the concept of time is meaningless.<sup>28</sup> Occult Science by contrast, provides meaning and significance to the idea of eternity and shows that transcending the intellectual mind is to transcend, or overcome the limitations of time and live in the timeless, or eternal. In any case regarding predicted time periods, Western science is completely out of sync with the Occult doctrine on the *yugas*, which, for example, gives the Age of Brahma as 311,040 billion years.<sup>29</sup>
5. Western science is silent over the question of the *source* of the colossal energy needed to explode the Universe in the bang. Simply assuming that the event just happened does not supplicate the reason of those who tire of maps without a territory, i.e. scientific models disconnected from common sense and Reality. Occult Science provides the answer. The unmanifest state is one of truly infinite Power, which can release whatever energy is needed to manifest a system (but not by virtue of a physical bang, unless the latter is regarded as a physical model (map), or projection onto the physical plane of the true state of affairs). The theoretical possibility of a single point releasing infinite energy was mentioned above. The manner in which Western science uses moving points in its own physical inquiries will shortly be demonstrated.
6. The most fundamental point of divergence between the Occult and scientific standpoints regards the question of intelligence. Hawking tells us the following:
  - During the early expansion of the Universe 'density fluctuations would have remained small at first, but later would have started to grow. Regions in which the density was slightly higher than average would have had their expansion slowed down by the gravitational attraction of the extra mass. Eventually, such regions would stop expanding and collapse, to form galaxies, stars and beings like us.'<sup>30</sup>
  - '... primitive forms of life ... developed in the oceans, possibly as a result of chance combinations of atoms into large structures.' The release of oxygen by primitive life forms changed the atmosphere to allow 'the development of higher forms of life such as fish, reptiles, mammals, and ultimately the human race.'<sup>31</sup>
  - 'Darwin's principle of natural selection' so that 'some individuals are better able than others to draw the right conclusions about the world around them',<sup>32</sup> that 'what we call intelligence and scientific discovery has

28 Stephen W. Hawking, *A Brief History of Time*, Bantam Press, 1988, p. 46.

29 See for example, Geoffrey A. Barboraka, *The Divine Plan*, The Theosophical Publishing House, 1980, pp. 12-19.

30 Hawking, *op. cit.*, p. 149.

31 *ibid.* pp. 120, 121.

32 *ibid.* pp. 12, 13.

conveyed a survival advantage' and that we may use 'the reasoning abilities that natural selection has given us.'

7. For the biologist Richard Dawkins, there is in the Universe 'nothing but blind pitiless indifference'.<sup>33</sup>

In summary regarding the question of purposeful intelligence, for Western science the origin of the Universe is violent, and bereft of any principle of consciousness, mind or intelligence. We humans owe our earthly existence and our *intelligence* ultimately to gravity-induced 'density fluctuations' of matter, 'chance combinations of atoms' and 'primitive forms of life'—all under 'Darwin's principle of natural selection'. The reader will finally be in no doubt that, as we

have stressed on previous occasions, for Western science, intelligence is a chance byproduct of matter. We need not labour the point that Occult Science logically demonstrates the fact of Purpose, Design, Love, Self-Sacrifice, Justice and Intelligence on the part of Deity (not 'God') in manifesting a portion of Himself—the Universe.

---

**For Occult Science, intelligence came first, but for Western science, intelligence comes last—as the culmination of the ladder of evolution and being essentially the product of molecular activity in the human brain.**

---

### Concluding Commentary and Writer's Conviction

Insofar as the epithets we choose reveal the subtlety, or otherwise of the concepts they embody, the uncouth term 'Big Bang'<sup>34</sup> admirably suits the mindlessly violent concept of materialistic cosmology and biology. Sublime principles resonate with sacred names; crude concepts attract gross terms; for there never was, or will be, a primal, 'bang', (other than perhaps, in the sense of a physical model), manifestation being the intelligent expansion and unfoldment from within outwards. The breakdown of mathematics and the laws of science before, or at the bang does not mean a breakdown of LAW and Reality; neither does it imply the birth of time, other than in the sense that Western science has *arbitrarily defined* the origin of time. Because it has stripped out Deity and Mind from its considerations of cosmogony and cosmogenesis, science can only be aware of the Divine Action as an appearance, in materialistic terms, of an amazing collection—either by co-incidence, or by an external 'Creator' God—of precisely adjusted

---

33 Dawkins seems to be obsessed with dogmatizing a Universe dominated by selfishness and blindness. There is at present an impeccably drilled squad of spiritually-bankrupt scientists guarded by their starry-eyed poodles who strive to deform the higher quest of humanity by dragging down a gullible public to the lowest levels of the deceptive, animalistic existence upon which they fumble—the likes of which in HPB's time she referred to as the 'murderers of thought'. How true is the old adage given out by sages such as Ramana Maharshi and Krishnamurti that the so-called external, objective world is an outward projection of our internal subjective state: 'As you are, so is the world' remarked Maharshi (*In Search of Secret India* by Paul Brunton). Dawkins's remarks with all respect, are an indication of his own state of mind, having naught to do with the Universe he so confidently claims to fathom.

34 Although the most popular theory on the grounds of weight of astronomical evidence, it is by no means the only one. It was Fred Hoyle, the proponent of the rival Steady State model who coined the term 'Big Bang' to deride the theory that he regarded to be about as elegant as 'a party girl jumping out of a cake'. It is ironical that the scientific community at large have adopted Hoyle's term, but rejected his model.



conditions to promote the postulated expansion after the bang, as summarized above. The ancients always studied cosmology as a total subject—astronomy dealing with the body of Cosmos, and astrology with its soul.<sup>35</sup> By neglecting the informing soul and spirit of Cosmos, Western science deals with less than one half of the total picture.

However, we behold how Western science, quite unwittingly, has edged inches closer to the Occult domain, for we have just shown how modern science using mathematics (and experimentation) has partially corroborated what the ancients knew in fullness through acute reflection. To that end Western science should be warmly applauded by Occult Science for discovering with incredible precision and quantitative details, the mechanisms involved in the beginning of physical manifestation that bear some resemblance to the broader and deeper assertions of Occultism. Were our modern cosmologists to regard their dimensionless point as a mind-constructed-to-mathematically-derived *symbol* of cosmogony, Occultists would rejoice even more (that is, to regard near-infinite physical density as a symbol of infinite spiritual potential, the symbol being an outward appearance of an inner reality); but to take such mathematical products at face value as describing the literal, physical state of affairs of the nascent physical Universe on the grounds of 'observational consequences' is untenable.<sup>36</sup> We have repeatedly pointed out that mathematics, being mind based, its results therefore, must also be mind based. Hence, the singularity point or Hawking circles are in the mental realm, i.e. meta-physical, if science would but admit that it has shown in a curious way that the Universe is indeed made of mind stuff, as Occult Science always asserts. But Alas! Western science, in the main, suffers a double handicap in such matters. For it moves in its own self-created world of intellectual glamour that impedes it from penetrating the veil of concepts *in abscondito* that screens it from the arcana of truth *in actu*. Plus, it is crippled by the linearity of its own concepts, such handicap being the intellectual equivalent of a man tone deaf and colour blind, so that the reality of the world *to him* is dull sound without nuances of tone and a nondescript grey colour.

Is Occult cosmogony in consonance with Big Bang theory? It is worth leaving the question open, for strongly polarized opinions either way merely close the door to further inquiry. The writer's persuasion, at present, is that Big Bang constitutes a very partial model of cosmogony because it is restricted only to the physical plane—so it is a *subset* of Occult cosmogony. Can the full understanding of a musical performance on say, a piano, be restricted solely to describing the mechanics of the piano and the acoustics of sound production, important though they all are for the ultimate physical manifestation of the music? But the physical plane *from the higher standpoint* is mayavic, so the bang must be mayavic, and that is not a helpful line to pursue! It is fair enough that Western science restricts its inquiries to the mechanisms involved on the physical plane. An Occultist has no qualms about the honesty of that approach, notwithstanding the wide variations

35 As an example, the observatory at Jaipur in India built by Maharaja Jai Singh II in the eighteenth century shows a wonderful confluence of astronomy and astrology as a whole.

36 Laboratory, atom-smashing experiments claiming to simulate conditions supposed to exist during the early Universe provide no conclusive validation of theoretical concepts for the reasons just explained.

in predictions depending upon which cosmological model is chosen (see Section 2). But what is intolerable is the attitude of some scientists who, on the one hand, admit the present incomplete state of knowledge on cosmogony in Western science, but on the other hand, proclaim the method of Western science to be the only valid one, denouncing all other avenues of research.

**Whatever ignorance, pride or fanaticism may suggest to the contrary, Esoteric Cosmology can be shown to be inseparably connected with both Philosophy and modern Science.<sup>37</sup> Occultism does not deny the certainty of the mechanical origin of the Universe; it only claims the absolute necessity of mechanics of some sort . . .**

*THE SECRET DOCTRINE*<sup>38</sup>

## Scientific Illustration of Consciousness and Energy Theoretically Released Through a Single Point

### PROPOSITION

That Western science embodies, on the physical plane, the Occult principle of the role of the point in releasing consciousness and energy.

### ELUCIDATION FROM WESTERN SCIENCE

Many problems in science and technology are solved by dividing the field of interest into elemental<sup>39</sup> cells and then applying the governing equations and physical parameters to each such rudimentary control volume. A good example of this approach is the method of solving problems in fluid flow (e.g. aerodynamics, hydraulics, fires, smoke dispersion, ventilation) by computational simulation. Fig. 9.5 is an illustration of a purely mathematical solution of the dispersion of smoke from a fire on an oil tanker (no actual, or physical fire ever occurred for this case). The following three fundamental factors are always needed for simulating fluid phenomena, such as the one shown in Fig. 9.5: (1) defining the field of interest by enveloping it in a mathematical mesh, or web made up of intersecting grid lines; (2) inputting the relevant fluid dynamics equations and physical parameters at each intersection of the grid lines, i.e. at each grid point; and (3) setting the 'starting' conditions known as boundary and initial conditions.

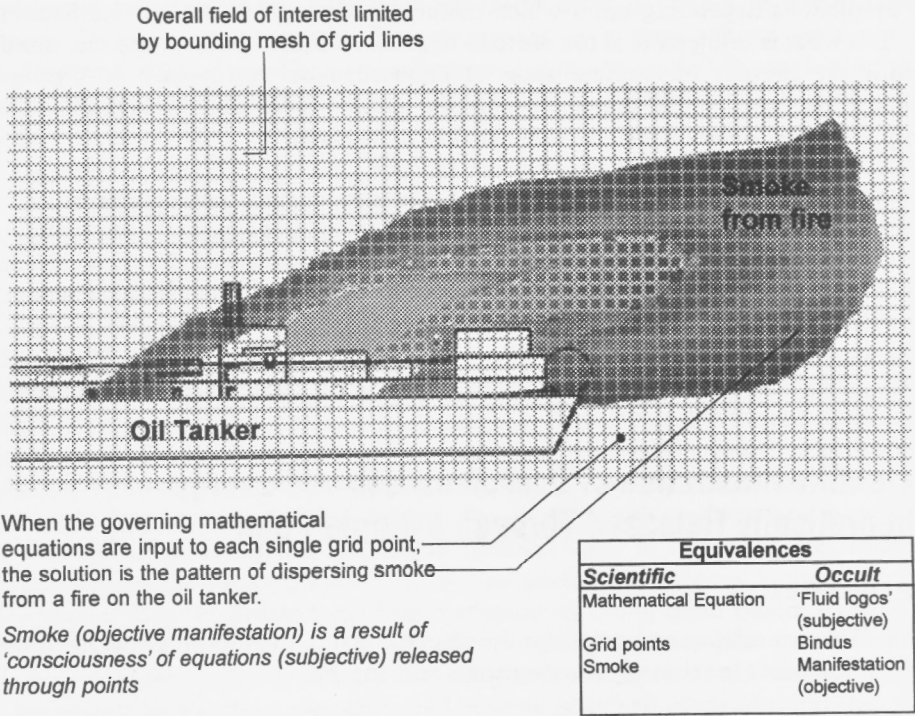
### IMPLICATIONS

Steps (1) and (2) are the most important and have a direct bearing on our Occult philosophy. In Step (1), the bounding field of interest is defined—we stated

<sup>37</sup> SD-2, p. 338.

<sup>38</sup> SD-2, p. 318. One of several references to a Deity by Newton in his letters to Bentley was 'a Cause to be not blind and fortuitous, but very well skilled in Mechanicks and Geometry'.

<sup>39</sup> The reader is invited to dwell upon the term 'elemental' as used in mathematics, and in Theosophy. In the widest sense, is there any commonality of function between the two?



**Fig. 9.5** The Role of Points in Manifestation – Mathematical Simulation of Smoke from Fire on Oil Tanker

earlier in Sections 5 and 6 that there can be no manifestation without a prior limitation. This limiting field is established by the grid lines weaving the fabric for simulating physical manifestation (refer to Fig. 7.10 in Section 7). In Step (2), the 'conscious energy' of the governing equations has been inserted at each grid point—in Occult parlance, the (unmanifest) 'fluid logos' has been differentiated by the Point. We explained in detail (see Fig. 7.2 in Section 7) the role of the Point in interfacing between the unmanifest, i.e. fluid logos, or bare, subjective mathematical equation in the above example, and the manifest, i.e. the objective solution, being in this case the smoke dispersion as depicted in Fig. 9.5.

*This is a graphic re-presentation by Western science of the Occult doctrine that manifestation is ultimately a phenomenon of moving Points, or Bindus, as ideal centres in consciousness endowed with energy. In the example of Fig. 9.5, some 50,000 points are needed to manifest an accurate solution—we can now begin to understand the basis of the Occult assertion that an infinity of Points in motion is needed to manifest a Universe. We can also discern the part of maya. For the governing fluid logos is the unchanging real—all its solutions, such as in Fig. 9.5, are its temporary 'projections' or fluid manifestations, i.e. a maya. Western science is indeed honeycombed with Occult Science.*

## Pursuit of Ultimate Building Block of the Universe

### PROPOSITION

That research to discover the fundamental particle constituting the *ultimate* building block of the Universe—for example the search for the Higgs boson at CERN—is futile and thus doomed to end in failure.

### OCCULT ELUCIDATION

#### A Simplistic, Intuitive Appreciation

An Occult Scientist may not be, indeed does not have to be a tyro in advanced mathematical physics, but even a little reflection shows him that if Einstein's famous equation  $E = mc^2$  be true—as Western science so passionately believes it is, then how can there possibly be a fundamental particle, Higgs boson, or whatever? Because any value of energy  $E$  is associated with its equivalent mass  $m$  of particle. ***For a fundamental particle therefore, there has got to be a 'fundamental energy'.*** Western science never talks about the latter, because such a concept is nonsensical, and therefore, so must be the former. Is the 'fundamental particle' then, the pipe-dream of the particle-physicist?

#### Commentary from Western science Itself

The above misgivings are reinforced by the editorial commentary from a leading engineering journal.<sup>40</sup> This stated that 'according to Professor Stephen Hawking even if the Higgs boson does exist, its position and momentum cannot be known. In other word, despite the £10 billion being spent at Cern, scientists will never be able to detect Dr. Higgs' particle'.<sup>41</sup>

Several decades earlier, Heisenberg said:

**By getting to smaller and smaller units, we do not come to fundamental units, or indivisible units, but we do come to a point where division has no meaning.**

Heisenberg's remarkable insight *which has taken physics into the realm of meta-physics*, provides the link to the truly authoritative commentary upon the subject—from Occult Science.

<sup>40</sup> Professional Engineering, 5 June 1996, Vol. 9, No. 11, p. 3.

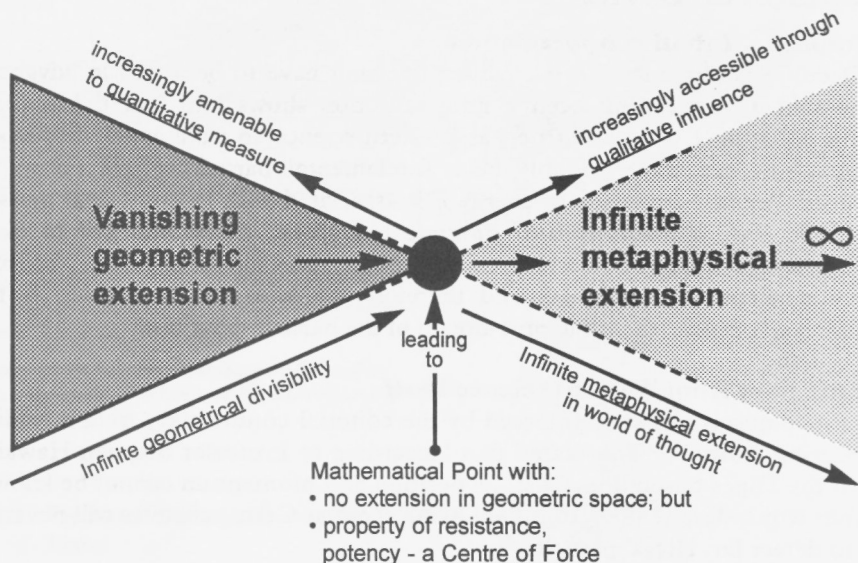
<sup>41</sup> The writer speculates that scientists will find this particle since Western science has a knack of finding what it *wants* to see. But such a discovery, far from settling the question of the origin of mass, will only throw up further perplexities, requiring even costlier experiments to unearth a yet more 'fundamental particle', before such research is knocked over by the ninth wave of common sense to a realization that *ultimate* verities may not be revealed in high-energy, atom-smashing laboratory experiments.

Leibnitz shows that thought/consciousness exists when matter is reduced to:

- vanishing mathematical point of zero extension in geometric space;
- but a corresponding infinite metaphysical extension in the world of thought.

Essences of real things have:

- punctual existence (snapshot) in time in physical world of geometric space; but
- an infinite depth of inner life in metaphysical world of thought.



**Fig. 9.6** Vanishing Geometrical Extension – Infinite Metaphysical Extension

### Commentary from Occult Science

**Having reduced the geometrical extension of the atoms to nothing, Leibnitz endowed them with an infinite extension in the direction of their metaphysical dimension . . . every physical point is but the phenomenal expression of the noumenal, metaphysical Point.**

*THE SECRET DOCTRINE*<sup>42</sup>

The above quotation clearly states that Leibnitz, as indeed Occultists, endow the whole of creation with mental life which is capable of infinite gradations. For it becomes evident that external or material objects present a property of geometrical extension in physical space to our physical senses only (owing to their coarseness), and not to our reasoning faculties (in the same sort of way as a rapidly whirling propeller appears like a solid disc because of our sensory inability

to see the individual blades rotating). Hence with ever decreasing geometric extension of atoms, so much the fuller becomes their inner life in a metaphysical realm. So, referring to Fig. 9.6, when the extension of matter and atoms vanishes to zero, such that we lose sight of them in the world of physical space, they are reduced to *mathematical points*, with a property of resistance—as centres of force.<sup>43</sup> This is because, as clearly explained in Section 7, the ideal, or mathematical Point being of zero dimension, transcends all limitations of dimension; thereby providing the interface and door to all worlds of dimension.

## RESOLUTION AND IMPLICATIONS

Dividing matter into smaller and smaller units by high energy particle collisions will become an increasingly meaningless exercise and not bequeath to particle physicists their Holy Grail; in fact will cause more confusion than answering existing questions. It will eventually show that there comes a 'point' when *res extensa* (extended substance, or matter to sensate experience) increasingly presents its 'original face' as *res cogita* (thinking substance, or mind)—so that quantitative, volumetric considerations about matter must eventually yield to qualitative, metaphysical meditations on mind stuff.

## Pursuit of Gluons in Particle Physics

### PROPOSITION

That the search for the ultimate mediating particle, or gluon is an exercise with diminishing returns.

### OCCULT ELUCIDATION

**Atoms are called Vibrations in Occultism; also Sound—collectively. This does not interfere with Prof. Tyndall's scientific discovery.**

*THE SECRET DOCTRINE*<sup>44</sup>

As previously stated, the overall atom is constrained by a force field of sound radiating from its centre. Sound therefore is the ultimate gluon of particle physics.

## RESOLUTION AND IMPLICATIONS

It is time to desist from building ever larger particle accelerators to discover further fundamental particles, for as Heisenberg said, by striving to attain ever-smaller units, we reach a stage where 'division has no meaning'. This is a timely moment therefore, to reorientate scientific research towards the esoteric properties of sound.

<sup>43</sup> This paragraph is a summarized version of *SD-2*, pp. 352–3.

<sup>44</sup> *SD-2*, p. 358.



## GUTs and TOE as Holy Grail of Particle Physics

### PROPOSITION

That the search for GUTs or a TOE will be frustrated.

### OCCULT ELUCIDATION

It is nada that is the ultimate principle in manifestation wherein all manifested powers, energies, forces and motions are united.

### RESOLUTION AND IMPLICATIONS

Whereas GUTs and TOE are a 'footstep' in the right direction, these equations, if successful, still deal with the physical plane only. So more questions will be left unanswered than resolved. A more fruitful line of inquiry would be to investigate the role of nada (the integrated unity of all powers and forces in manifestation), associated with sound. However for success in this field, scientists would have to be as thoroughly trained in Yoga, particularly Mantra Yoga, as they are now in science—currently a tall order.

## RESOLUTIONS REGARDING CONSCIOUSNESS

### Conscious Matter, Energy and Forces in Nature

#### PROPOSITION

That gross, physical matter is not 'dead', but rooted in consciousness; i.e. the origin of matter is consciousness and *not* vice versa.

#### ELUCIDATION

A simplistic account of the basic building blocks in the argument is as follows (refer to Figs. 7.14 and 8.4 in Sections 7 and 8, respectively):

1. Gross matter is a differentiated product of primordial Space-Substance, Akasha;
2. Akasha is the opposite limit of the expanded Point or Bindu;
3. Bindu differentiates Consciousness with coeval and co-eternal Power;
4. From Power we obtain Akasha and its differentiated products on the physical plane as energy, force and matter, which are steeped in their polar correlate—Consciousness.

*Note:* the terms Energy and Power are used above in the 'Occult' sense, and not according to the strict scientific definition of the capacity of a system for doing work and the rate of expenditure of energy, respectively.

At the atomic level, we can say that:

1. The electrons in the atom are constrained within their orbits by a field of Sound radiating from the centre of the atom.
2. Sound is the agent of Consciousness.
3. Hence the atom, the so-called building block of matter, is imbued with Consciousness and indeed is an ex-pression, at the physical level, of Consciousness.

## RESOLUTION AND IMPLICATIONS

1. We have, then, conscious matter, rather than matter *with* consciousness. The smallest subatomic particle of matter is therefore an elementary centre of mind and energy (always a co-related pair). Because matter is conscious, there can be no blind forces between objects, for such forces, however rudimentary, are intelligent.
2. Consciousness is not a byproduct of brain cells but rather the 'prime mover' of the latter, as the objective aspect and vehicle of mind in the human physical body. The body and brain are *ideas in consciousness*.
3. Try as it might, Western science can NEVER run away from acknowledging the key ingredient of Consciousness which is inextricably embedded within its own most fundamental equations of motion and energy. For example:

Newton's Second Law of Motion:  $F = ma$  ..... (1)

Einstein's mass-energy equation:  $E = mc^2$  ..... (2)

where  $F$  is force,  $E$  is energy,  $m$  is mass,  $a$  is acceleration and  $c$  is speed of light in a vacuum.

In (1) the  $m$  predicates the  $F$ ; and in (2) the  $m$  predicates the  $E$ . In other words,  $m$  and  $F$ , and  $m$  and  $E$  are conjugate variables. But  $F$  and  $E$  are derivatives of Consciousness as shown above, and so mass  $m$  (the ponderable stuff of matter) must also be a derivative of Consciousness.

(Incidentally, Newton's three Laws of Motion correspond, on the physical plane, in a fascinating way to the Esoteric doctrine on the three gunas. This should occasion no surprise when it is realized that Motion is the basis of all manifestation and the gunas characterize the three states of nature.)

So just because scientists cannot see consciousness and mind in their bubble chambers<sup>45</sup> does not mean that mind is not in the subjective realm as the backdrop to all the energetic, dancing particles they see in the objective realm as foreground. After all, has not quantum theory shown that so-called empty space is anything but empty?

<sup>45</sup> And for that matter through telescopes and microscopes, or any other instrument acting as magnifier of the physical senses.

## UFOs and Aliens from other Planets and Solar Systems

### PROPOSITION

That there is every reason to suppose that extra-terrestrial life does exist.

### OCCULT ELUCIDATION

A seminal passage from *The Secret Doctrine* speaks of globes 'in CO-ADUNITION but not IN CONSUBSTANTIALITY WITH OUR EARTH . . .'<sup>46</sup> This indispensable fact of different worlds being united (co-adunition) but in *different states of consciousness* (not in con-substantiality) resolves the whole tedious question about whether UFOs, aliens, etc. from other planets and solar systems exist or not. Enrico Fermi's famous, but idiotic remark 'Where are they? If they existed, they would be here' implies that since many evolutionary systems are billions of years older than our sun, then why have not aliens, if they exist, visited our earth, or at least demonstrated their existence in some form. We reply in the time-honoured method, with another question: 'Can all life in the Universe be contacted via the five physical senses?' Let us examine this question by way of an example of viruses from ordinary human life.

Microscopes can show us what biological viruses look like, but has anyone ever seen a computer virus through even the most powerful microscope? Knowing the code that generated it or seeing the magnetic media, its amniotic fluid, so to speak, that incubates it, is not the same thing at all as seeing the virus proper. The computer virus is constituted of 'electronic matter' and lives in 'electronic space', or cyberspace. Because it inhabits a completely different 'state of consciousness' to ours, it is intangible to our senses, but very tangible to the computers it infects, since the latter are also made of electronic matter. Similarly, life on other planets that is in a different state of consciousness to ours, will not fall within the vibratory range of our ordinary terrestrial consciousness. But does that mean that because we cannot contact such life, therefore it does not exist?

A human or animal virus cannot infect a computer; nor can a computer virus infiltrate biological organisms. Therefore is a computer virus, for example, entitled to emulate Fermi and exclaim 'Human viruses! I cannot find them. So where are they?'

---

**The basic error of scientific inquiry into life on other planets and also of some UFO societies is to assume, without any justification, that extra-terrestrial life, if it exists, must be constituted of matter and in a form that we earthly humans can recognize. It need not be.**

---

On what grounds, other than pure egocentricity, can mankind *arbitrarily* assume that all forms of life in the Universe should be like him and in a form that his limited senses can recognize? According to Occult Science all is life.

46 SD-1, p. 220. The meaning of this famous passage was explained in Section 7.

## RESOLUTION AND IMPLICATIONS

It is a profound Occult maxim that there is no such thing as dead matter—all matter and forms are the ex-expression, in varying degrees of subtlety and complexity, of the ONE LIFE. The ordinary human senses with their limited range of vibration are insensitive to life forms outside this range. But when some overlap of different life forms does occur, what appears to us as strange and inexplicable in our world is on account of events that are quite natural in corresponding worlds of higher dimensions. There have always been indirect intimations of such overlap and contact with extra-terrestrial life by way of strange sightings and experiences; these are reported in increasing numbers nowadays. Also, there is a superabundance of literature all over the globe that reassures us through fables, mythologies and allegories that humanity is not alone.

## RESOLUTIONS REGARDING SOUND AND LIGHT

### Quantum Theory

#### PROPOSITION

That Occult Science holds the clue to the confusion caused in quantum physics by the paradoxical behaviour of light and the enigmatic nature of the quantum.

#### OCCULT ELUCIDATION

The intermittent, or discontinuous nature of space and time *in manifestation* was covered in some depth in Section 7. We have also, in Section 2, mentioned specific esoteric pointers gleaned from the most recent discoveries in quantum physics. The reader is referred back to these sections, hence there is no need for repetition here.

#### IMPLICATIONS

Quantum theory from Western science has not only provided further insight into the nature of light and the mechanisms underlying the physical Universe, but has also corroborated, partly, the overriding Occult doctrine on the role of krama which lies at the very basis of manifestation (see Fig. 7.2).

## Dual, Particle~Wave Nature of Physical Entities

#### PROPOSITION


That Occult Science holds the key to unlock the *reason* behind the discovery by Western science that all physical entities in Nature display a dual, particle-like and wave-like character.

## OCCULT ELUCIDATION

### Evidence from Western science

The two fundamental relations by Planck and de Broglie shown below give (a) *wave characteristic of particle*: the wavelength  $\lambda$  and wave frequency  $f$  associated with a particle whose momentum is  $p$  and energy is  $E$ ; and the same relations give (b) *particle characteristic of wave*: the particle momentum  $p$  and energy  $E$  associated with a wave whose wavelength is  $\lambda$  and frequency is  $f$ .

Wave-Matter	Matter-Wave
Planck's equation: $E = hf$ gives matter properties of waves – 'Wave packet' acts as a particle	de Broglie's equation: $\lambda = h/p$ gives wave properties of matter – Particle in motion displays wave properties
Wave energy $E$ behaves as though it consists of particles as quanta of energy $hf$ .	Propagation of a 'matter wave' $\lambda$ accompanies every particle in motion having a momentum $p$ .
Wave aspect to foreground – particle aspect in background	Particle aspect to foreground – wave aspect in background


 Impossible to separate out these two aspects

The principle of complementarity expounded in the 1920s mainly by Bohr, states that the dual, particle-wave nature of a quantum entity can never display both facets of its dual nature simultaneously. Either one, or other aspect can be detected depending upon the experimental set-up, but never both.

Recently however, experiments have been carried out to show pure, *single* photons behaving as (a) a particle;<sup>47</sup> (b) a wave;<sup>48</sup> and (c) as *both* particle and wave *simultaneously*.<sup>49</sup> The last disproves the fundamental tenet of complementarity (and also provides yet another example of our main thesis about the fragility of Western science, whereby theories forcefully promulgated at one time are completely overturned by science only a few decades later).

## RESOLUTION AND IMPLICATIONS

We have seen that for any entity, when the particle aspect is in the foreground, the wave aspect is always in the background, and vice versa. What this obviously implies is that every phenomenon in Nature on whatever plane of Nature it happens to be, reflects, at that level, the dual characteristics derived from the primal polarity of both Shiva-Consciousness *and* Shakti-Power, with one or other predominating. So the question is not one of an exclusive either/or, but which

47 John Gribbin, *Schrödinger's Kittens*, Weidenfeld & Nicolson, 1995, p. 117, which describes the pioneering work of the Paris team, Alain Aspect and Philippe Grangier in the 1980s.

48 *ibid.* p. 118.

49 Gribbin, *op. cit.*, pp. 118–9. This describes how the ideas of the Indian team, Dipankar Home, Partha Ghose and Girish Agarwal were actually carried out by the Japanese team (not surprisingly!) Yutaka Mizobuchi and Yoshiyuki Ohtake.

---

**The closely coupled de Broglie and Planck equations that describe dual aspects of one physical reality can only do so because they reflect and embody, on the physical plane, the intimate union between the two poles of Shiva and Shakti, which are the ultimate duality responsible for all manifestation.**

---

quality predominates, depending upon which, a phenomenon will display the various expressions of mind, or the innumerable expressions of energy and matter (see Fig. 9.1).

## Virtual Particles from Vacuum Fluctuations

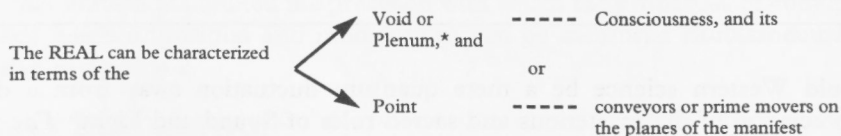
### PROPOSITION

That Occult Science holds the key to a deeper UNDER-standing of the phenomenon of virtual particles appearing in pairs, as a result of fluctuations of the vacuum state.

### OCCULT ELUCIDATION

As previously explained, quantum physics has shown that the vacuum is not a state of annihilation, but a hive of activity. When examined at the Planck scale, i.e. at a resolution of  $10^{-35}$  metres, the vacuum is found to harbour a mass of energetic, short-lived particles, including photons, that dart in and out of existence. Particles appear out of the vacuum and are re-absorbed into the vacuum, hence they are termed virtual particles.

Points of conscious energy in **MOTION** is the key provided by Occult Science. Hence there is no such thing as empty space. As shown below, the REAL can be characterized in terms of the Void, or Plenum, and the Point.



\* *The Voice of the Silence* by H. P. Blavatsky refers to the 'fullness of the void'. Those who properly realize the illusory nature of the manifested world, seemingly brim full of impermanent objects and things know 'the voidness of the seeming fullness' (adapted from H. Upadhyay, *The Absolute*, Blavatsky Lecture 1985, p. 13).

### RESOLUTION

**Thou hast to study the voidness of the seeming full, the fullness of the seeming void.**

*THE VOICE OF THE SILENCE, THE SEVEN PORTALS, VERSE 243.*

It is the 'fullness of the seeming void' that accounts for virtual particles as quantum physics has discovered but regarding which Occult Science provides the



key to the *essential nature* of the phenomenon (rather than a mathematical formulation and statistical quantification of the subatomic mechanisms in which Western science obviously rules supreme).

## The Intimate Connection Between Sound and Light

### PROPOSITION

That the Occult tenet on the role of Sound and Light in manifestation and the more fundamental role of Sound, now finds some corroboration from Western science.

### OCCULT ELUCIDATION

Sonoluminescence is a phenomenon whereby liquids (water, alkanes, ketones, chlorinated hydrocarbons, etc.) irradiated with high intensity ultrasound also generate the emission of visible light. Recent research at Cambridge University suggests that this is caused by 'photons of light arising from minute quantum fluctuations in the fabric of the Universe'.<sup>50</sup>

### RESOLUTION AND IMPLICATIONS

We have previously discussed in some detail the Occult doctrine about one of the key roles of Sound as the organizing and regulating principle in manifestation, and of light as supplying the primal material of the objective Universe under the controlling influence of Sound. Note the striking similarity between these two statements:

Western science	Occult Science
'... light arising from ...fluctuations in the <i>fabric</i> of the Universe.'	'Zarathushtra's <i>clothing</i> of Light.'

Could Western science be a mere quantum fluctuation away from a deeper appreciation of the mysterious and sacred roles of Sound and Light? The writer speculates that research into sound, and its intimate relationship with light, will assume ever increasing importance in the next century as did the study of light in the twentieth century and earlier.

## Probability and Maya

### PROPOSITION

That science has paved the way towards an acceptance of the Occult doctrine on maya.

50 *New Scientist*, 4 May 1996 describes this work by Claudia Eberlein.

## OCCULT ELUCIDATION

If the fundamental atomic and subatomic particles are understood by Western science in terms of probabilities or tendencies to exist and interact, then we human beings, as also the Universe, which (according to science) are constituted only of such basic particle building-blocks, are also a probability. Like the particles, we and the world around us do not 'actually' exist at a specific location in space and time, but have a statistically calculable *tendency* so to exist and act. Einstein has on more than one occasion expressed the hope that statistics and probabilities would provide but a *temporary* expedient for quantum physics, before deeper truths were uncovered. However some modern scientists have converted statistics into their God (refer also to Section 2 for a fuller account of the use of statistics by Western science).

## RESOLUTION

To characterize the world at the quantum level in terms of probabilities is to drag science into the maelstrom of maya—namely, that the Universe is not at all what we assume to be the solidly tangible 'thing' it appears to be. Occult Science has unequivocally declared the elusive and ephemeral nature of the physical plane which Western science studies so diligently. Alas, Occult Science is taken to be vague, while probability waves, because they can be mathematicized, provide Western science with an air of authenticity.

## Heisenberg's Principle of Indeterminacy

### PROPOSITION

That Occult Science provides a perfectly satisfactory (though not mathematical) response to the reason behind Heisenberg's principle of indeterminacy, which states that Nature has limited the precision with which the properties of conjugate variables (such as position and momentum) can be measured simultaneously—refer also to Section 2.

### OCCULT ELUCIDATION

Firstly, it is worth reflecting on the peculiar contradiction in Western science which, on the one hand claims that all processes in Nature occur according to natural laws working with mathematical exactitude, but on the other hand accepts the principle of indeterminacy as a fact in Nature (however anything, even uncertainty, that can be mathematicized is immediately granted respectability). What is behind the uncertainty in physical Nature?

The Universe is, fundamentally, the derivation and ex-pression of the One REALITY which pervades, guides and regulates it *from within*. Accordingly then, there is a Divine Plan pervaded by Divine Consciousness and propelled by Divine Power, which jointly work inexorably towards the fulfilment of the Plan by ensuring that the natural laws that underlie the manifested Universe are under Its

jurisdiction.<sup>51</sup> Now to use a crude analogy, a motorist, however well he knows his intended destination, must make adjustments to his course, so that the journey plan can be fulfilled. He does not have to get out of his car and push it around every corner, but applies control where it is most effective, i.e. at the steering wheel. Even if his journey lie along an absolutely straight line, he cannot hold the wheel rigidly in one single position all the time. Similarly the Divine Plan runs its course under laws of Nature working with mathematical exactitude, but when occasional control and regulation become necessary to maintain the course of the Divine Journey, this is accomplished by intervention and adjustments (a) to the natural laws that underlie the Universe; and (b) at the atomic level. Changes to the natural laws are recognized as variations in the fundamental physical constants and are discussed in the next section. Changes at the atomic level are most significant because it is at this ultimate basis of the physical world that the subtlest changes are most effective (as with the steering wheel of the motorist). So when occasional change becomes necessary, it is accomplished from within by 'steering' on the atoms. It is because the little 'steering wheels' of the physical

---

**When causative influences from higher, superphysical realms are ignored, their effects must appear to those confined to the physical plane as fluctuations and uncertainty.**

---

world—the atoms—are steeped in Divine Consciousness that they can be so influenced by Divine Will. They are also influenced by the activity of worlds of higher dimensions 'hidden' within the physical world.

## RESOLUTION AND IMPLICATIONS

What Western science calls uncertainty, indeterminacy, probability, chance, caprice, etc. are all a mass of words to evade the central issue and avoid invoking Consciousness and Mind as that Reality behind the physical world and working on that world—an ex-pression of Itself. Of course when the overriding activity of Mind, as also the influence of superphysical worlds is ignored, the effects on the physical plane are bound to appear as uncertainty. There are none so blind as those who consciously and deliberately *choose* not to see.

**The whole of the manifested universe which is bound by natural laws, and therefore determinate, is embedded, as it were, in consciousness which is free and therefore indeterminate. That is why the uncertainty is found only at the bedrock of any phenomenon and not in the body of the phenomenon itself.<sup>52</sup>**

---

51 In his letters to Bentley, Newton, *op. cit.*, makes 26 explicit references in 10 different ways to such Divine intervention using terms such as 'a divine Arm', 'intelligent Agent', 'Author of the System'.

52 I. K. Taimni, *Science and Occultism*, The Theosophical Publishing House, 1987, p. 220.

## Variability of Fundamental Physical Constants of Nature

### PROPOSITION

Unlike mathematical constants such as  $e$  or  $\pi$ , physical constants are experimentally determined by laboratory measurements. They are generally supposed, and unquestioningly assumed, to be invariant over any period of time. However, it is proposed that there is no reason to think that the fundamental physical constants of Nature should have an unchanging value over time. Indeed, eminent physicists such as Eddington and Dirac have speculated that some fundamental constants may change with time. This is a complex and contentious issue, so what follows is a cursory illustration just to make our case—not a detailed account of fundamental constants and measurement techniques.

### OCCULT ELUCIDATION

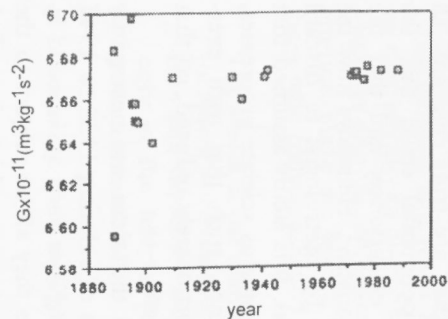
#### Information from Western science Itself

There are around seven such fundamental constants, but we shall restrict attention to the following three: the gravitational constant which relates the force of gravitational attraction between bodies to the mass of the bodies and the distance between them; Planck's constant  $h$  which relates the frequency of a radiation to its quantum of energy; and the speed of light  $c$ . Fig. 9.7 shows the variation of these constants along with the maximum percentage increase in value occurring during the measuring period.<sup>53</sup>

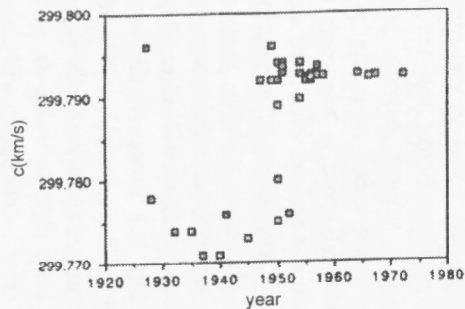
Whereas it is easy summarily to dismiss such variations in terms of 'experimental error', Sheldrake (see footnote) puts forward robust arguments to demonstrate that such attempts by 'hard science' at explaining away the variations are far too simplistic. He puts forward three theories that could explain the variability of constants: the conventional view that they are truly constant, all variations in empirical data being the result of experimental error; that the constants may vary in a smooth manner with time or distance; and that the constants fluctuate about a mean value that is itself constant. He shows how the postulate of experimental error is *selectively invoked* by metrologist to discard measurements that do not accord with their *expectations*. It is tacitly assumed that because of progressive refinement of measuring technique as science progresses, new measurements are more reliable than older ones, such that with ever-increasing precision, errors of measurement are proportionately reduced, so that we approach ever-closer to the 'true' value of the constant.

Observation of Fig. 9.7 however, shows a trend that does not necessarily uphold the above view. For example, the lower values of  $c$  during 1928 to 1945 were obtained from measurements in laboratories in *different parts of the world by different investigators using different methods*, so how can they all be subject to the same 'experimental error', compared with later measurements which show *both* upwards and downwards fluctuations in  $c$ , therefore not a smooth approach to the

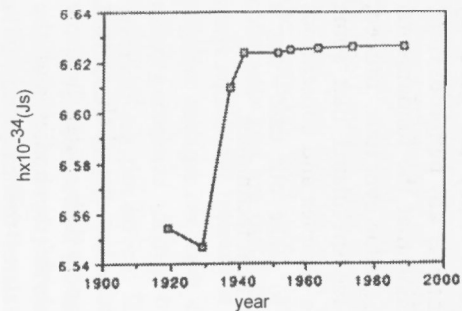
<sup>53</sup> All data on the variation of the fundamental constants is taken from Rupert Sheldrake, *Seven Experiments that Could Change the World*, Fourth Estate, 1994, pp. 164–90.



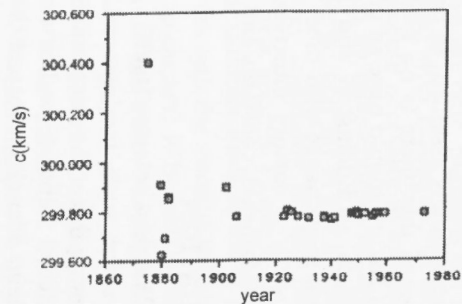
Best values of the universal gravitational constant ( $G$ ) from 1888 to 1989. 1.7% maximum variation.



Values of the velocity of light ( $c$ ) from 1927 to 1972. In 1972 its value was fixed by definition. 0.01% maximum variation.



Best values of Planck's constant ( $h$ ) from 1919 to 1988. 1.3% maximum variation.



Best values of the velocity of light ( $c$ ) from 1874 to 1972. 0.3% maximum variation.

**Fig. 9.7** Variability of Fundamental Physical Constants of Nature (adapted from Rupert Sheldrake, *Seven Experiments That Could Change The World*)

'true' value? Furthermore it is important to realize that the actual units<sup>54</sup> in which the velocity of light is measured (i.e. distance and time), are themselves *defined* in terms of light itself. So any changes in the actual value of  $c$  would be undetectable because of an arbitrary system of definition whereby such changes would be rendered impossible by the manner in which the units are defined—any actual change in  $c$  would change the units themselves, so as to maintain a constant value of  $c$ . The speed of light is thus *made constant by definition*.

The consternation in scientific circles caused by the possibility of fluctuations in  $c$  was described in Sections 2 and 3. Evidence for the non-constancy of the speed of light is appearing nowadays in scientific journals at an accelerating rate. An up-to-date example is the paper by Borge Nodland and John Ralston in the April 1977 edition of *Physical Review Letters*. This shows that  $c$  may have more than one speed depending on the *direction* in which light travels in space across the Universe—a claim that is bound to shake the basic assumption of Einstein's special relativity. They propose that the plane of polarization of light rotates about once in one billion years, a phenomenon they term the 'corkscrew effect' (which calls to mind the elemental vortices of Descartes and others). The implications are that 'not all space is equal, for as far back as we can peer in time' and that there 'seems to be an absolute axis, a kind of cosmological north star that orients

---

**Does the 'cosmological north star that orients the universe' along a preferred axis have any relation with the Central Spiritual Sun of Occult Science? One hardly dares to speculate.**

---

the universe.' Should these claims about the anisotropy (i.e. non-uniformity with direction of large-scale properties) of space be further substantiated, they will undermine the cosmological principle adopted as a basic hypothesis in theoretical models of cosmology, along with the predictions of the latter.

The value of gravitational constant shows the greatest variation, such that the editor of *Nature*<sup>55</sup> described as 'a blot on the face of physics' the fact that  $G$  still remains uncertain to about one part in 5000. From the 1950s to the 1970s, Planck's constant continued to rise *by increments that exceeded the error estimated in the previously accepted value*.

### Occult Insights and Writer's Conviction

We previously referred to a passage in *The Secret Doctrine* where it states that there were 'chemical substances and other compounds, which have now ceased to combine together, and are therefore unknown . . .'<sup>56</sup> Is it unreasonable, then, to infer that these previous combinations were made possible under the aegis of different fundamental constants that enabled them to take place? In other words, alter the constants and you may alter the chemical combinations that depend on them.

In a broader sense however, the only state of utter repose is the changeless

---

54 Units are not Divinely ordained, but man-made according to definitions adopted for pragmatic purposes.

55 John Maddox, *Nature*, 1986.

56 SD-2, p. 200.



state of unmanifested and super-integrated unity—what we have called the UNITED State, wherein all contradictions and polarities are resolved and subsumed. But manifestation as previously explained is a result of *motion* and so, in one sense, manifestation is practically synonymous with change. Change, then, is inherent within the very nature of manifestation,<sup>57</sup> in which case the physical constants that underpin and control physical manifestation must also be subject to change. As with the principle of indeterminacy described above, such changes, according to the writer, are the fine tuning and adjustments by which the presiding Deity, or Logos of a manifested Universe (Ishvara) regulates and controls His system.

## RESOLUTION AND IMPLICATIONS

Just as Heisenberg's principle of indeterminacy was initially put down to error in experimental measurements, before science finally, and not without a struggle, accepted it as a principle in physical Nature, so perhaps science in the coming century may recognize and prove that the variability of the constants may also be a fact of physical Nature not just to do with precision of measurement. Should

---

**The variability of fundamental physical constants *may* be a higher octave and more general version of Heisenberg's principle of indeterminacy. Further research is required.**

---

such variability of constants be conclusively proven, the implications are enormous and could well involve a radical reconsideration of deep-seated theories (and prejudices) about the origin of the Universe, nature of time and impermanence of manifested phenomena.

Further research *with no preconceptions or anticipation of end results*, into the possible variability of constants would, in the writer's opinion, produce rewarding insights into the processes of Nature that would benefit both Western and Occult Science. The basic methodology for such work is admirably set out by Sheldrake.<sup>58</sup>

## MISCELLANEOUS TOPICS

### Dowsing

#### PROPOSITION

That quantum physics may provide a clue regarding the general phenomenon of psychometry associated with 'atmospheres' or 'energy fields' around objects or a person, and possibly lead towards a partial explanation of phenomena such as dowsing and radionics.

---

57 Did not Gautama the Buddha declare that all compounded things are impermanent and therefore subject to change and decay?

58 Rupert Sheldrake, *Seven Experiments that Could Change the World*, Fourth Estate, 1994, pp. 188–90.

## OCCULT ELUCIDATION

It was stated earlier in this section that it is impossible to separate the particle and wave characteristics of an entity. The de Broglie equation whereby any particle with a momentum  $p$  can be characterized in terms of its associated wavelength, is  $\lambda = h/p$ , where  $h$  again, is Planck's constant.

Now consider a human being of mass, say, 50 kilograms. Nothing physical is at absolute rest on earth or anywhere else, so let us suppose that our human moves imperceptibly on earth with a velocity of 0.001 metres per second. His associated wavelength would be of order  $10^{-31}$  metre.<sup>59</sup> This is immeasurably small of course, but even though physical instruments cannot as yet detect such fine wavelengths, there is no reason to assume that the range of vibrations do not extend indefinitely beyond the ultraviolet and opposite infrared ends of the spectrum. So despite the lack of what scientists would call 'hard evidence', yet, do we not sometimes sense an *atmosphere* around a person, or see his 'aura' which appears to shimmer? For what is an 'atmosphere' or 'shimmering aura' if not a vibration, i.e. a *wave* that a sensitive person with trained inner faculties, or a genuine dowser, can detect?

## IMPLICATIONS

The above is no more than speculation on the part of the writer. It would be utterly foolish to suggest that subtle energies and atmospheres could all be accounted for by invoking the de Broglie equation. What is singularly lacking is a qualitative dimension to the argument— However the above is offered in the hope that mathematical pointers from modern Western science can judiciously be used to gain an intuitive appreciation of an elusive subject, summarily dismissed by some scientists as woolly fantasies caused by endomorphins in the brain.

## Occult Powers – How are they Acquired?

### PROPOSITION

That one of the keys to the attainment of the various occult and psychic powers is a detailed knowledge of the relation of Mind with Light and especially Sound, and their association with Matter.

## OCCULT ELUCIDATION

**We say and maintain that SOUND, for one thing, is a tremendous Occult power; that it is a stupendous force, of which the electricity generated by a million Niagaras could never counteract the smallest potentiality when directed with Occult Knowledge.**

THE SECRET DOCTRINE<sup>60</sup>

<sup>59</sup> For what it is worth, the associated frequency would be of order  $10^{26}$  vibrations (waves) per second. Compare this with Keely's estimate of Inter-Ætheric vibrations at 24,300,000,000 per second given in SD-2, p. 286.

<sup>60</sup> SD-2, p. 279.

The key role of Sound in the overall process of manifestation was explained in Section 8. It was stated that the very structure of the manifested Universe was based upon Sound as the organizing and regulating principle. Sections 7 and 8 showed the descent of REALITY towards Matter, and the correspondences of Sound and Light with the various states of Matter.

The corollary to the above is that *sound can be used to affect matter*. Fig. 9.8 overleaf shows in a very cursory fashion how this happens. The REAL, as always, presents two, related aspects of Itself: the aspect of Consciousness, and the aspect of Power *in the form of Sound*. Because these two aspects are inseparable, their mutual relation is maintained at every level of descent of the One Reality into innumerable manifestations and ex-pressions of Itself in the phenomenal worlds. For this reason, Sound and Consciousness are intimately coupled, and each has the capacity to affect the other at any level of manifestation.

The reader is referred to the chapter entitled *The Coming Force—Its Possibilities and Impossibilities*<sup>61</sup> in *The Secret Doctrine* for a fascinating account of the stupendous power in the use of Sound, when ‘directed with *Occult knowledge*’. A factual chronicle is presented about the great American inventor John Worrell Keely who, ‘at the threshold of some of the greatest secrets of the Universe’, unconsciously discovered the incredible ‘*etheric Force . . . the terrible sidereal . . . vibratory . . . Force, known to the Atlanteans . . . and Aryan Rishis . . .*’ This chapter gives a broad outline of the origin of this Force with respect to the planes of Nature, the general alchemical principles involved in its manifestation and the immense potentialities for its use, as well as misuse. To that end it is explained that Keely alone was able to utilize this Force to work his machines, but failed to harness his invention as a commercial venture. Such failure would always ensue until the common human lot improved and the moral and ethical climate of humanity as a whole deserves that it possess knowledge of forces that would make present day nuclear forces seem like play toys.<sup>62</sup>

### Actual Demonstration of Acoustic Levitation

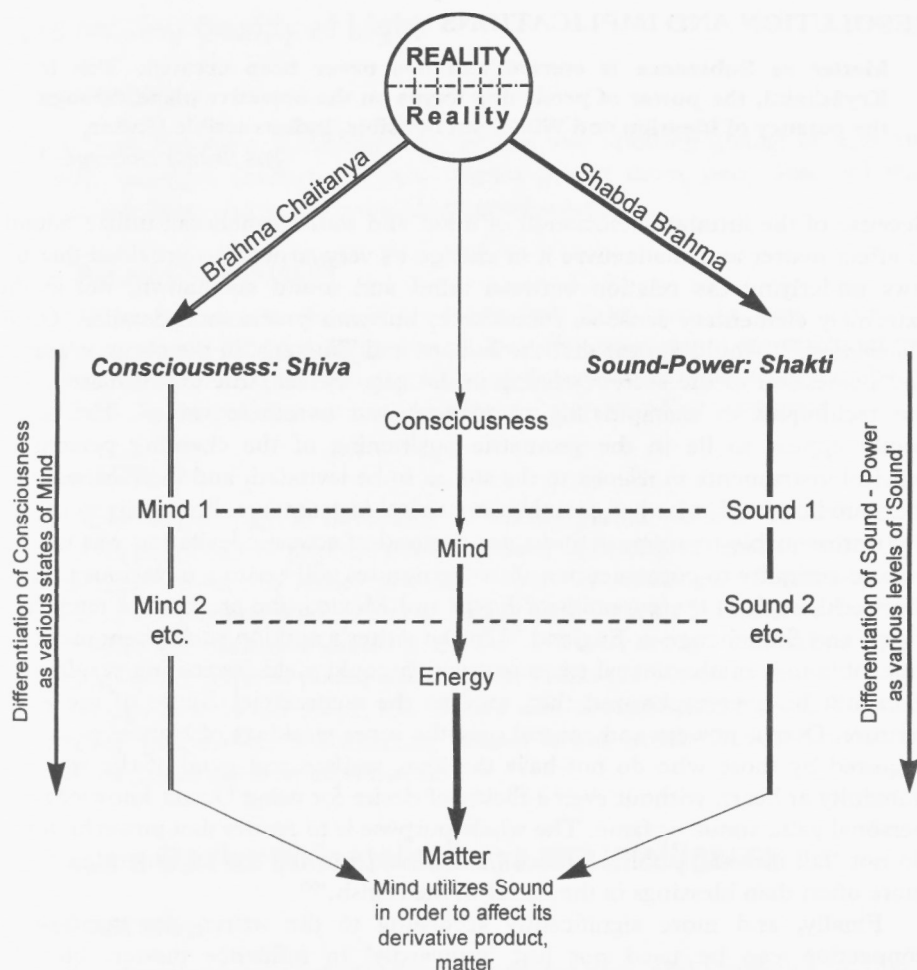
The writer has personally witnessed two demonstrations of antigravitation or levitation using sound. In Shivapur, an insignificant village near Poona in India, stands a small Muslim mosque dedicated to the Sufi saint Qamar Ali Dervish. On the lawn in front of the modest building stand two granite boulders, one weighing about fifty-five kilograms and a smaller one weighing around forty-one kilograms. Under the supervision of the presiding priest, eleven persons touch the larger boulder with their index fingers whilst chanting ‘Qamar Ali Dervish’ in loud, ringing tones—whereupon the boulder rises in the air and hovers for a few seconds before falling down with a thud. The smaller boulder requires the index fingers of nine chanting persons to levitate it. Hundreds of people, locals and foreigners have witnessed this spectacle for which at least four factors must be

61 SD-2, pp. 278–89, from which all quotations in this paragraph are taken.

62 Upon perusing the above-mentioned chapter in *The Secret Doctrine*, the reader may be permitted an occasional smile when he hears some particle physicists confidently claiming that they are on the brink of knowing all about the six fundamental building blocks and the four fundamental forces of Nature—and that is all there is to Nature.

satisfied: the name of the Sufi saint; the correct chanting of the name; the precise number of persons; the use of the index finger only.

A similar feat has been reported at a Tibetan monastery where monks were building a high stone wall. Individual stones, some 3 tonnes in weight were levitated from ground level to rest on an elevated cliff platform 250 metres high.



'He who would hear the voice of *Nāda*, "the Soundless Sound", and comprehend it, he has to learn the nature of *Dhāranā* [in order that he may not be] ignorant of the dangers of the lower *IDDHI*.'

*The Voice of the Silence*, verses 1 and 2.

Fig. 9.8 Basic Principle in Using Occult Powers

Each stone took 3 minutes to travel along a parabolic trajectory some 500 metres long. This feat was accomplished by a chorus of nineteen chanting monks standing behind nineteen instrumentalists (thirteen drummers and six trumpeters), positioned in fan-like formation along a quarter-arc of a circle, 63 metres in radius.<sup>63</sup>

## RESOLUTION AND IMPLICATIONS

**Matter as Substance is eternal and has never been created. This is Kryâshakti, the power of producing forms on the objective plane through the potency of Ideation and Will, from invisible, indestructible Matter.**

*THE SECRET DOCTRINE*<sup>64</sup>

Because of the intimate association of mind and sound, mind can utilize 'sound' to affect matter and manoeuvre it or change its very structure—provided that the laws underlying the relation between mind and sound are known, not in the extremely elementary sense as stated here, but with precise and detailed '*Occult Knowledge*'. It would appear that the Indians and Tibetans, in the above example, had possession of the secrets relating to the geometrical structure of matter, and the techniques of manipulating resonances and harmonic values. The secret would appear to lie in the geometric positioning of the chanting persons or musical instruments *in relation* to the stones to be levitated, and the harmonics of the sound emitted, whether chanting or musical instruments. From this story, it is not unreasonable to suppose that some method of acoustic levitation was used in remote antiquity to construct megalithic structures still existing in various parts of the world, such as the pyramids of Egypt and Mexico, the great stone temples of Egypt and Stonehenge in England.<sup>65</sup> In the writer's opinion such phenomena are amenable to a mathematical treatment which could yield fascinating results. But it cannot be overemphasized that, as with the commercial failure of the Keely venture, Occult powers and control over the inner workings of Nature cannot be acquired by those who do not have the love, welfare and good of the whole of humanity at heart, without even a flicker of desire for using Occult knowledge for personal gain, status or fame. The whole purpose is to ensure that powerful forces do not 'fall into the public domain [and hence] run the risk of becoming curses more often than blessings in the hands of the selfish.'<sup>66</sup>

Finally, and more significantly according to the writer, the mind-sound connection can be used not just 'outwardly' to influence matter, but also 'inwardly' as the system of Mantra Yoga for unfolding higher states of mind and consciousness, by using sound as the *link* between different states of mind and consciousness. There is no doubt that such consciousness raising can also be achieved, but over a longer time period, by concentrated listening to truly great

63 *Anti-Gravity and the World Grid*, ed. David Hatcher Childress, Adventures Unlimited Press, 1987, p. 211, *Acoustic Levitation of Stones* by Bruce Cathie.

64 *SD-5*, p. 449.

65 Indeed HPB says 'Sound may be produced of such a nature that the pyramid of Cheops would be raised in the air ...' — *SD-2*, p. 279.

66 *op. cit.*, pp. 281–2.

music (from both East and West) and then meditating on the silence between the sounds—for did not the Master of music declare:

**Music is the mediator between the spiritual and the sensual life.**

LUDWIG VAN BEETHOVEN<sup>67</sup>

## Harmonizing Quality of Light

### PROPOSITION

That Occult Science can elucidate the healing and uplifting quality of light and especially sunlight. (Indeed Western science has at times been obsessed with investigating light, and this is not without good reason.)

### OCCULT ELUCIDATION

Fig. 2.8 in Section 2 showed how physical light can, in one sense, be characterized as an electromagnetic wave. But what does electro-magnetic imply, and what primal qualities do electricity and magnetism reflect and embody? Indeed the Shakti and Shiva primal polarity of Power and Consciousness.

### RESOLUTION

White light is the highest fulfilment of the integrated state of Reality that is possible on the objective physical plane. Without indulging in sentimentality, light may be regarded, in one sense, as a carrier wave or messenger of harmony from the Real to the physical plane. Hence, contact with light is obviously conducive to health, since the former supplies a balance between energy and mind, as the derivation on the physical plane, of the primal Power and Consciousness.

Although outside our scope, the specific uses of sound and light in Yoga and for healing purposes is a fascinating subject about which Occult Science has virtually exclusive rights at explanation.

## Light as a Carrier of Consciousness and Intelligence

### PROPOSITION

That the phenomenon of light is closely associated with, and analogous to, that of mind and consciousness.

### OCCULT ELUCIDATION

A simple intuitive approach will suffice for now. Firstly, the very word ‘consider’, is derived from the Latin *con sideris* (‘with starlight’). It is a graphical illustration

<sup>67</sup> It is the writer’s conviction that men like Shakespeare and Beethoven were chosen messengers of the Divine who made their appearance upon the human stage at the hour appointed by Destiny, in order to elevate the consciousness of the common human lot from the limitation-drugged grooves of common complacency—for those who care to listen.



of how the intimate relation between light and mind is deeply embedded in our everyday use of language. Slightly more technically, we all know that  $E = mc^2$ , which invokes light as a factor in the interconversion of radiant energy (light) and matter. However, Einstein's famous equation can as well be rewritten as  $c = \sqrt{E/m}$ . Now the dynamic, Shakti-derived function predominates in  $E$ , and the static, Shiva-derived quality predominates in  $m$ . So an intuitive reading of the rewritten equation can be stated in words as: light is the dynamic function of Shakti *underpinned* (as in the denominator of the equation) by the consciousness quality of Shiva. Therefore light is **propelled consciousness**. Mathematical purists and academics may blanch or splutter red in the face at such a blasphemous reading of Einstein's equation but, for Occultists, such equations convey a significance in addition to their conventional use—that is, they can be understood at various levels of qualitative meaning as *symbols*, in addition to their fixed, quantitative rendition as mathematical icons.<sup>68</sup> Be that as it may, the above is offered, not for mute acceptance, but for CON-sideration.

## RESOLUTION

Because Light is, so to speak, the radiance (not emanation) of Consciousness, it both partakes of, and is a carrier or transmitter of Consciousness. Hence the inseparable bond between light with consciousness and mind. Modern medicine<sup>69</sup> is slowly discovering anew the depressing effects of sunlight deprivation on the human psyche and new complementary medicine therapies using light appear to hold much promise.

## CODA – HOW WESTERN SCIENCE CAN ENRICH OCCULT SCIENCE

So was it when my life began, So is it now I am a man, So be it when I  
shall grow old, Or let me die! The Child is father of the Man . . .

WILLIAM WORDSWORTH

The temporary refuge of mathematical abstraction and mega-costly experiments will not shelter Western science for ever from its desperate attempts to escape from consciousness and intelligence in its deliberations, thereby confining itself to nature *in abscondito*—the playground of alluring, but misleading reports of the physical senses. For just as all particular solutions (*in abscondito*) of any

68 To add weight to such an intuitive and qualitative use of equations, recall that Einstein felt the truth of his relativity theory 'in his bones', as he put it, well before he formulated it in mathematical terms. Similarly, Newton told Halley about one of his most fundamental discoveries of planetary motion that he had known for years. Only at Halley's behest, did he subject his intuitions to a mathematical treatment. The point is that a rigorous mathematical proof, when appropriate, follows an intuitively felt truth, and not the other way round.

69 Orthodox medicine of course explains this problem largely in terms of physical chemistry, namely the lack of melatonin production by the pineal gland under reduced light. Although entirely true in terms of effects, the deeper causative factors are superphysical.

mathematical equation are rooted in the latter as parent,<sup>70</sup> *in actu*, as Western science well knows, so science will one day be forced to admit that the whole field of physical, sensory phenomena which it studies so expertly is rooted in the unmanifest, which is quite unaffected by an infinite number of manifestations. The manifested Universe is an unfoldment from within of the infinite reservoir of Consciousness-Power. Intelligence Came First<sup>71</sup> and not last as Western science, in the main, assumes. Thus from the most gigantic of galaxies down to the very smallest of subatomic particles, germs and viruses, each is a centre of mind-energy. Hard-nosed scientists will not be satisfied with all this and clamour for proof—in their terms. But, as expounded in Section 3, Occult truths are mysteries, not because of any mystique or deliberate attempt at obfuscation, but because such truths are not so much a matter of learning data and information—as in Western science—but of experiencing, and being changed by the experience. Learning by participation and experience is something that is quite incommunicable to scientists, other than to those who have had a similar kind of profoundly transformative experience.

Western science however, has undergone a collective metamorphosis. It is the writer's conviction that the legendary two-hole experiment of classical and especially, modern physics has been a gigantic and divinely ordained symbol and pointer to Western science to uplift its own collective consciousness towards contemplating the non-physical source of all dualities in Nature—see Fig. 9.9 overleaf. This disarmingly simple experiment bedevilled Western science, so long as the latter refused to look beyond its fixed ideas in order to interpret the paradoxical results. But having being forced to affect a paradigm shift in outlook (consciousness) the two-hole experiment has had a profoundly transformative influence on science and become the means to its own continuity and salvation. ***Thus we have fulfilled our design of showing how Western science, by its own very methods and experiments is moving closer to its parent—Occult Science.***

What is it that still inhibits a lasting union of the parent with its child? According to the writer, there are four crucial misunderstandings that must be cleared before there can be any hope of genuine and sustainable progress, on a large scale. Harking back to Section 5, these are:

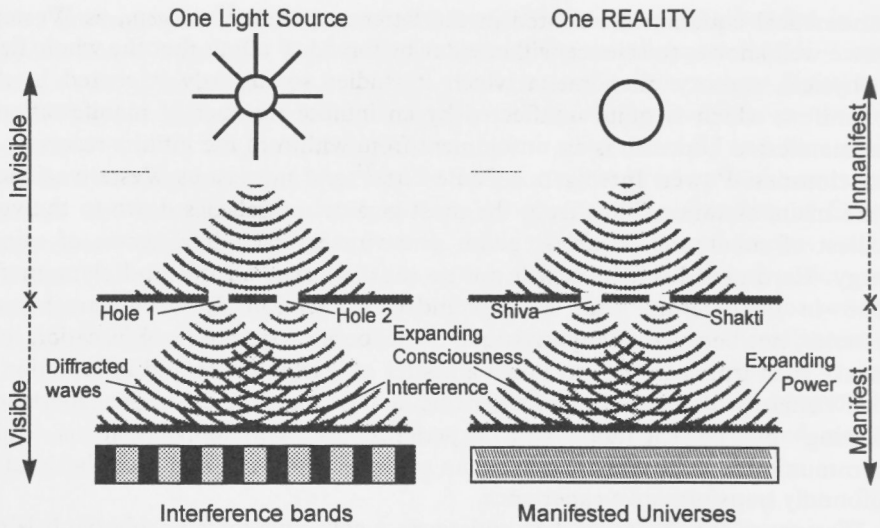
1. The notion of an external, anthropomorphic 'Creator God' (who performs according to his fancy), as preached by the *exoteric* religions, plus the associated invention of heaven and hell (as popularly understood).<sup>72</sup> In HPB's words: 'We do not war against the IDEAL Reality, but the hideous theological *Shadow*.'<sup>73</sup>

70 The parent equation is quite unaffected by innumerable solutions as was demonstrated earlier using the example of the governing equations of fluid flow.

71 A saying borrowed from the title of a book by a group of highly qualified scientists edited by E. Lester Smith, F.R.S. and published by Quest Books. This carefully argued and readable book shows consciousness to be a primal fact of cosmos and nature, not as a woolly hypothesis to comfort us, but as a matter of fact and experience.

72 This is not to deny a personal relation with some aspect of the Divine; what is absurd is to conceive of a personal God.

73 SD-2, p. 344.



**Fig. 9.9** The Two-Hole Experiment Symbolizing Resolution of Mirages in Western Science by Occult Science

2. That humanity represents the pinnacle of a long and ascending chain of biological evolution starting with primitive organisms, through the monkeys, and ending with Man. Hence the unjustified *assumption* that all life must correspond to our terrestrial parameters of what constitutes life and intelligence.
3. That when we physically die all responsibility for our thoughts, words and deeds dies with us.
4. That consciousness and intelligence are the (by)product of molecular processes in the human brain.<sup>74</sup>

Remove these four gigantic blockages and the rest will follow—but the most important are the first and the fourth (which, in a most curious way, appear to be coupled). From before Ptolemy to Copernicus, forwards to Kepler and Galileo, then to Newton, Leibnitz, Faraday, Clerk-Maxwell and Kelvin, and finally to Einstein and beyond, there is a long line of illustrious scientists and philosophers who not only acknowledged a Deity endowed with supreme Intelligence, but sought some kind of personal experience and relationship with Him. For them, unlike some nineteenth-century and modern scientists, ‘God’<sup>75</sup> was not a convenient repository into which all unsolved problems and unknown facts could be frozen in the hope that one day they would be thawed out by later scientific discoveries.

<sup>74</sup> We go further and say that the representative of Divine Consciousness in the human being resides in the **HEART** and *not* in the head—more of that later.

<sup>75</sup> We might also add terms such as ‘Mind’, ‘Consciousness’, ‘Deity’, ‘UNITED State’, etc.

So having cleared the obstacles on the Path, how do we make progress? In summary, there are two inter-related factors that constitute the backdrop for the resolution by Occult Science of all conundrums in Western science, ranging from the unification of physical forces to infinite energy and the origin of the Universe; from consciousness to matter; and from particles and waves to uncertainty. Firstly, the manifested Universe (which Western science studies in its objective aspect) is an ex-expression of Reality. This Universe presents two dimensions: a higher, or greater dimension that is transcendental and therefore integrated and free; and a lesser or lower dimension<sup>76</sup> that is self-limited by its own laws (what Western science calls the laws of Nature supported by fundamental physical constants), which are themselves an aspect of Reality as Its ex-expression in the objective world. The relation between the greater and the lesser dimensions of the Universe is also that between the whole and its many parts, or the relation of the integrated state to the differentiated states. Because of the co-existence of the integrated state with its corresponding differentiated states, and the mutual correlations between the latter, the manifested Universe operates in what appears to be an automatic fashion—what Western science calls mathematical exactitude, but yet is guided and regulated from within during the course of its evolutionary process—which Western science recognizes as uncertainty and the (possible) variations over time of fundamental constants.

**It is because the Supreme Consciousness underlying the universe is free and Self-determined that the object of the Divine Plan for this universe can be attained with certainty.<sup>77</sup>**

The second factor is that all forces in nature are cascaded down from Divine Power with Divine Consciousness as its polar correlate. The Consciousness and Power is literally infinite because it derives from the unmanifest just as the zero in mathematics can generate an infinity of numbers. This limitless Consciousness-Power is the reason behind the solemn pronouncements of the great seers of all religions and genuine (i.e. esoteric) philosophic schools, also some enlightened scientists, all of whom in their own way and according to their particular religious affiliation, affirmed their *realization* (not mere conjecture) about God<sup>78</sup> being omnipotent, omniscient and omnipresent—in the words of Eastern Occult literature:

**Brahman [the Supreme Consciousness] is endowed with infinite and boundless Power;**

<sup>76</sup> Because the Universe is, so to speak, *transcendental Intelligence made manifest*, it is logical that there should be a similar relation between the higher and lower aspects of the Universe—the macrocosm, as exists in the microcosm—the mind of Man, classified in Theosophical terms as higher manas and lower manas.

<sup>77</sup> Taimni, *op. cit.*, p. 15.

<sup>78</sup> By 'God' we do not of course mean the absurd notion of an external anthropomorphic Creator as concocted by an outworn religion and science. For example, Hawking states: 'At the big bang . . . all the laws would have broken down, so God would still have had complete freedom to choose what happened and how the universe began.' This man-invented 'God', as we have been at pains to stress, has thrown Western science and all *exoteric* religions into pandemonium and contributed to the immense scorn shown by science towards genuine mysticism, religion and Occult Science.

a fact which can be realized not by mediation, but only through meditation, and therefore never by Western science in isolation, for as Einstein said: 'Science cannot solve the ultimate mystery of nature'.

To close this section, the writer takes the liberty of drawing upon the crown jewel of modern, Western science in order to illustrate an abstruse Occult doctrine regarding the difference between Brahman and Atman, and the more general problem of the relation of the parts to the whole.<sup>79</sup> In his Notebooks, Paul Brunton states 'If Brahman were to utter the word "I", that I would be the Atman.' What does this mean and particularly, what is the relation of Brahman to Atman? A clue is provided by the Sanskrit word *katama*, which is the equivalent of the Latin word *quantum*, meaning 'how much'. It is proposed therefore, that Atman is the 'Brahmanic Particle'—the 'quantized Brahman', or Monad.<sup>80</sup> So Brahman, the Divine Wave/Field is mirrored in all His Deific Particles—His Atmanic aspect. Similarly, when Humanity in general and as a whole ('wave') is 'quantized' we obtain finite Human Beings ('particles') with specific characteristics.

---

**It is proposed that Atman is Brahman  
'quantized', Human Beings are  
Humanity 'quantized'— They are  
two aspects of the REAL.**

---

We Human Beings are the 'quantized/humanized particles' of the 'wave of Humanity', the whole of that humanity reflected in us, even though each one of us as individuals actively mirrors (like the monads) one of other aspect of that humanity more clearly.

For does not the Bible tell us (in *Genesis*, Chapter 1) that 'God created man in his *own* image', or in the words of the great mystic Meister Eckhart 'Man verily is God, God verily is Man'? A quantum physicist might say 'The Wave is the Particle, the Particle is the Wave'. They could both—mystic and scientist, join hands and proclaim 'I am That I AM', or 'Om Mani Padme Hum' (My God Within Me).

**Feel yourselves the vehicles of the whole humanity, mankind as part of yourselves, and act accordingly.**

H. P. BLAVATSKY<sup>81</sup>

---

79 As previously stated, the writer is well aware of the furore that might be aroused in some orthodox circles by such an unconventional use of quantum physics. His response, as always, is that scientific facts are grounded in a deeper layer of meta-physical meaning, necessarily qualitative, which provides the bedrock for their quantitative interpretation. It is as important to draw upon the *spirit* of quantum physics (or any other scientific theory for that matter), in addition to using its equations in a strict sense.

80 The term 'monad' used in the wider Leibnitzian sense, rather than in the more specific manner by Occult Science.

81 Message to 1889 Convention of The Theosophical Society in America, quoting the words of her own Teacher.

# Section 10 Predictions and Speculations

Mme Blavatsky said in her *Lucifer* magazine: 'The twentieth century has strange developments for humanity.' We take this further by stating that many of the seeds of a future science have already been sown in this century. The blossoms are yet to appear. It is on the nature of these blossoms that the writer speculates. What follows therefore, are conjectures—by no means comprehensive—on the possible course of Western science in the twenty first century.

## ORIGIN OF THE UNIVERSE AND EXPERIMENTAL PARTICLE RESEARCH

- This century has shown in formal terms the relation between the observer and the observed. The next century will show how the observed follows on from the *expectation* of the observer. For example, experiments at CERN will show just what the scientists *want* to see. And this manifestation of the observer's intent will precipitate Western science straight into Occult Science, for what is *intent* if not consciousness and will, and if events follow intent, then *consciousness is the prime mover*. In a sense this finding will be a higher octave of Professor Ellison's renowned 'flower pot' experiment described in Section 3—not merely a case of 'I see what I believe', but 'I make happen what I want to happen'.
- Experiments on antimatter, at CERN for example, will show the general theory of relativity to be incomplete, i.e. a partial formulation of much deeper truths. This will once more display the fragile nature of scientific theories because, as always of their weak foundations in philosophy. Yet again will Western science be thrown into a sea of uncertainty and all sorts of conjectures will be promulgated in a desperate, but losing battle to evade or circumscribe the fact of Divine Consciousness and Divine Will~Power. When common sense will finally prevail, as it must do, the writer is not prepared to speculate.
- The search for the ultimate gluon as also for the fundamental particle as the ultimate building block of matter will yield diminishing returns and in fact cause more bewilderment.
- The search for the fundamental forces in Nature will be found to have a correlation with the Elements (as understood esoterically—see Fig. 8.2 for example).
- Increasing evidence will be forthcoming on the time-dependent, and possible space-dependent variation of the fundamental constants in nature, including the speed of light.



- Current Big Bang theories about a mechanical origin of the Universe will be drastically altered as further evidence is forthcoming on the existence of dark matter and antimatter, and variations in the fundamental constants.
- Allied to the above, having concentrated almost exclusively on the mechanical origin of the Universe, Western science will begin to place more emphasis on the mechanicians.

## CONSCIOUSNESS AND LIFE

- The global Internet Communication system requires a user to have web space. The terms web and space are highly significant: they point to the notion of space as a fabric as explained previously, and the very term space used in conjunction with inter-communicating computers shows how space is being intelligently 'electronicized' before it is fully mentalized. Equally our minds are being 'electronified' as a prelude to being spatialized. Such electronic communication in 'electronic space', as well as the furtherance of virtual reality, may well pave the way for an overall acceptance and greater awareness, by Western science, of the possibilities of mind communication in mental space, i.e. telepathy.
- Allied to the above, imminent experiments in quantum physics to show that a *single* photon can be in two places at one time will presage the general acceptance of telepathy, which in turn will prepare the ground for the acceptance by science of Mind as an all-pervading field. This will in due course reinstate the central role of Consciousness. Consciousness will be increasingly equated with the nature of Space, and less with molecular processes in the brain.
- There will be robust evidence for the theory of morphogenetic fields. Slowly, this will cause a loosening of the suffocating grip of Darwinian theories on our ideas about evolution. Thinking humanity will realize that besides supplying a plausible theory on the mechanistic aspects of human life, or a complete theory of robot-like men, Darwinism has little else to offer on deep questions such as the origin and purpose of life, transcendental experiences and our spiritual quest for self-enlightenment.
- There will be a progressive accumulation of evidence to demonstrate the existence of extra-terrestrial life, that may not correspond to our terrestrial concepts of what constitutes life. The recent discovery purporting to show evidence of biological life on Mars is a major step in this direction.

## SOUND AND LIGHT

- Research emphasis will very slowly shift from the study of light to that of sound, resonance and sympathetic vibration, and their relation to mind, energy and matter. Sonoluminescence will provide the incentive for this work.

- The velocity of light will be shown not to be a constant. This does not mean that Einstein was wrong (a meaningless concept anyway), but that the relativity principle has to be taken a stage higher just as Einstein took Newton's laws a stage higher. This will presage a consideration of relativity *between* planes of Nature, the relativity within the physical plane having been studied in this century to virtual perfection.
- Allied to a deeper consideration of relativity, the concept of an ether will be reinstated, but a much more subtle and less crudely mechanical version than the ether of late nineteenth-century physics that was disproved by the Michelson-Morley experiment.
- The quantum *principle* will be found to apply at deeper levels to space and time and it will be realized that this is a basic requirement of manifestation that takes its rise from metaphysical principles.
- The basic principles of causality and determinism that characterized classical science have largely been replaced by uncertainty, probability and statistics in modern science. Notwithstanding this fact, Einstein's forecast about statistics and probability being but a temporary refuge and expedient for physics before deeper layers of truth are uncovered, will be vindicated.

\* \* \*

In conclusion, there must come a time (only the date is in question) when orthodox Western science will realize the unnecessary complexities and delusions it has created for itself by ignoring Mind and Consciousness as independent realities in its quest for truth. It will be realized that only the physical Universe can be investigated by physical experiments and mathematics. But the Reality which is the root of the physical Universe is of the nature of Consciousness, and therefore efforts to find such a Reality by physical methods alone will remain ever unfulfilled. The glamour of high energy, experimental particle physics will then begin to pall when the Western scientific body as a whole realizes that increasing efforts and expenditure in this materialistic direction yield diminishing returns. (Even now we are witnessing a progressive flattening out of the curve of scientific progress against cost.) This frustration will occasion an awakening in Western science as a whole, which will deal the final death-blow to its materialistic philosophy of naive realism and cause a complete volte-face of 'back to the drawing board'. From then on Western science, the child, may willingly listen to the philosophy, ethics and methods of its parent, Occult Science, in order to discover the Divinity in all life. We may expedite this happy reunion by recommending to Western science the 'ultimate formula'.



# Section 11    The Ultimate Formula – The Way of the Heart

**The way to conquer the evils arising from the unethical abuse of science is to go right inside its camp and win it over to philosophy. So do not . . . attack the ego as so many do, but lift it up to the highest possibility.**

PAUL BRUNTON<sup>1</sup>

**Physics is not important, love is.**

RICHARD FEYNMAN<sup>2</sup>

**O Rama! Listen carefully to this secret. He who worships the sun never comes to grief. Pray to him thus ...**

THE SAGE AGASTYA TO THE LORD RAMA<sup>3</sup>

There is sound reason for the above seemingly disparate quotations; for they indicate both our attitude to, and method of attaining our principal aim throughout our whole exposition—the elevation of the wonderful discoveries of Western science to the status of the wisdom and altruism of Occult Science. We maintain that one day Western science will consciously acknowledge what it now admits furtively—that any painstaking inquiry into the nature of Light must alchemically transmute into a deeper inquiry into Mind; for as we have repeatedly pointed out and demonstrated, Mind is analogically like Light. This transmutation has already begun! Witness the recent, intense interest shown by Western science on the whole question of consciousness, albeit at present, mainly in materialistic terms and restricted to the physical plane. But how can this transmutation take place more speedily and effectively? The Table below provides an elucidation.

Holy Bible <sup>a</sup>	Paul Brunton <sup>b</sup>	H. P. Blavatsky <sup>c</sup>
The light of the body is the eye: if therefore thine eye be single, thy body shall be full of light.	If the mind using the eye be turned away from the complicated multiplicity of the world and withdrawn into its own natural being, the whole body shall be full of spiritual light.	When the individual consciousness is turned inward, a conjunction of Manas and Buddhi takes place.

a    *Matthew vi 22*      b    *Quest of the Overself*      c    *The Secret Doctrine*

What do we realize and experience when the mind using the eye is turned away from the complicated physical world and a conjunction of Manas and Buddhi

1    *The Notebooks of Paul Brunton*, vol. 5, Part 2, p. 129 and vol. 2, p. 2.  
2    This was his reply to the mother of Marcus Chown (Consultant to the *New Scientist*) when the latter asked Feynman (a Nobel laureate in physics) to write to her to explain why physics was important.  
3    *Aaditya Hrudaya: The Almighty Formula*, communicated by the Sage Agastya to the Lord Rama before Yuddha Kanda: The Great War in the epic *Ramayana*.

takes place, such that our bodies are suffused with light? Fig. 11.1 shows a natural scene of a sunset, and an imaginative simile of a lamp in a house (as above, so below). Both represent in a remarkable way, the *inner* nature of both Cosmos and Man, showing how pure Light as the *radiance* of Consciousness shines through and illuminates manifold, differentiated layers of Itself.

The sunset shows how the Central Spiritual Sun irradiates its power upon our sun, whose light is diffused through (a) the hazy atmosphere and (b) the intervening clouds before reaching (c) the surface of the sea, where the ripples cause multiple images of the one light, which in turn cast shadows for all the marine creatures on the bottom. For these creatures, the flitting activity on the seabed constitutes the reality of their world; and they do not realize that all this dancing movement of shadows is caused by the motion of the water—not the sun, their source.

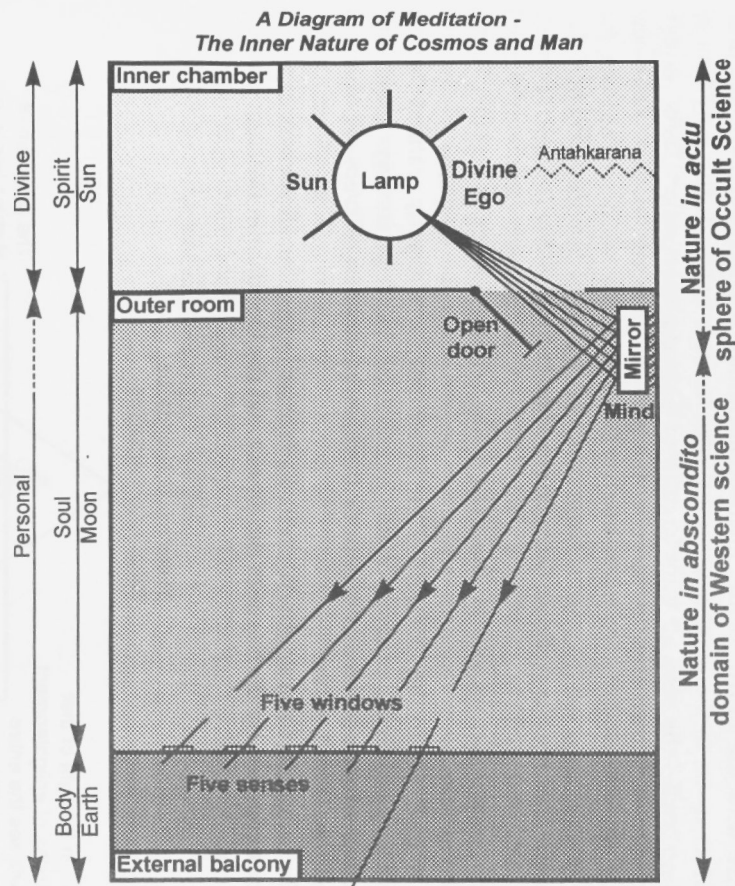
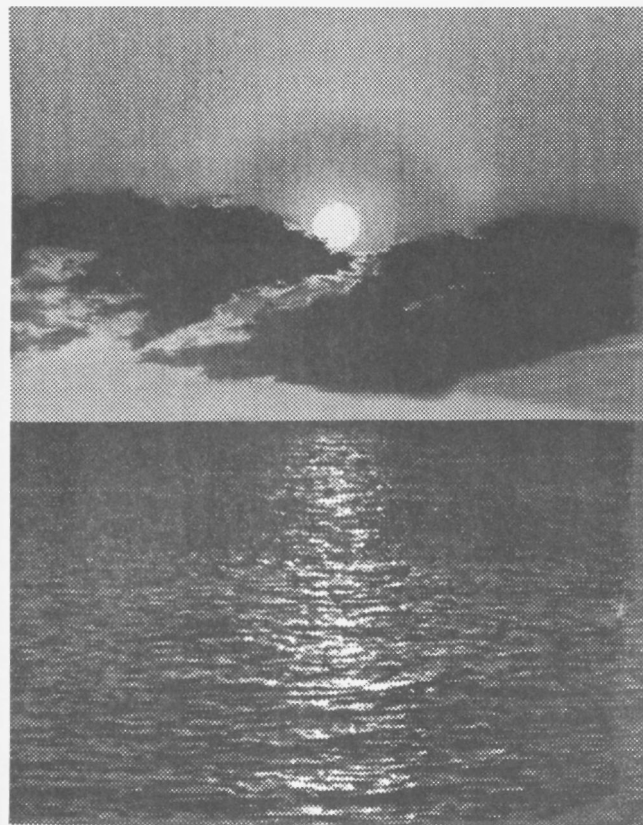
Referring to the simile,<sup>4</sup> we see the following: electricity from a remote generator powers a bright lamp, the light from which is transmitted, via the intervening atmosphere acting like the Antahkarana, to the four walls of an *inner* chamber. In one wall there is (a) a partially open door through which a fraction of the light passes into an adjacent *outer* room to fall upon (b) a dusty mirror affixed to a wall; which mirror then reflects the light outwards to (c) five dirty windows through which the rays are refracted towards an external balcony; whereupon one ray passes further onwards, through the entrance of an adjoining shed and casts a shadow on the wall. The inhabitants of the shed (rather like the inmates of Plato's cave), never having left the confines of the latter, mistake the shadow on the wall for the objective reality of the world outside.

Reading this diagram in its symbolic sense of a map of our inner being, we appreciate how the focus and radiance of the Divine Ego (sun/lamp) has been thrice diminished and diffused by (1) the lower mind (atmospheric haze/doorway to outer room); (2) emotions (clouds/dusty mirror) and (2) five gross physical senses (turbulent waters/five dirty windows). Fig. 11.1 also reveals exactly why it is that Nature must always appear *in abscondito* to Western science, since the latter chooses to restrict its scope to the outer room and so is conditioned by lower mind and emotion,<sup>5</sup> and the five physical senses, which cause the pure and single ray of intuition from the Divine Ego to be split into multiple images (appearances) because of reflection and refraction by the personality. In the inner chamber, the high ground of Occult Science, Nature is always seen, or rather experienced *in actu*.

Furthermore, whereas Western science almost exclusively regards waking consciousness to be the highest state of consciousness, in fact it is the lowest, for the light has been twice removed from its source. In this wise, it cannot be too strongly emphasized that the heart is the seat of consciousness and not the head. The intellect lives by a borrowed light as the moon reflects the light of the sun. Only in deep meditation where we close the shutters on the windows of senses,

<sup>4</sup> The writer has combined and added his own thoughts to the above analogy taken from the writings of H. P. Blavatsky, Dr. Taimni and mainly Paul Brunton. For some, it may constitute a useful diagram of meditation.

<sup>5</sup> Alas, the perfect ingredients for potential prejudice and bigotry.

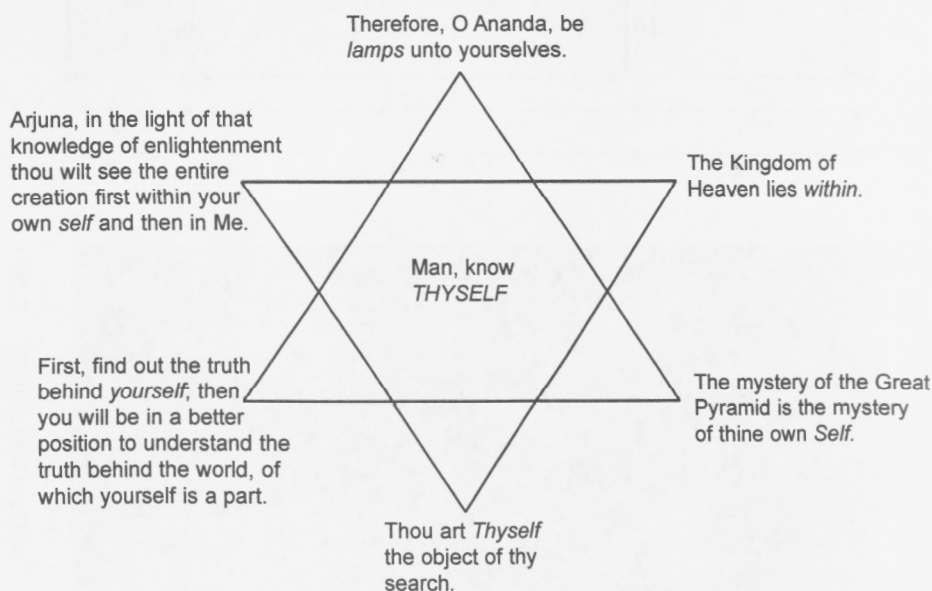


**Fig. 11.1** Man Know THYSELF – The God in the sun is the 'I' in me



dispense with the mirror of the intellectual/emotional mind and close the door behind us to enter the inner sanctum, do we become one with the pure light of the lamp itself—the state of undifferentiated Consciousness when Light as pure Consciousness is virtually the same as Consciousness as pure Light. Only now can we risk severing the Antahkarana to become indissolubly as one with the Lamp itself. *This is the Way of the Heart which ultimately leads to the realization that it is useless to attempt to probe the Cosmos, unless we first understand ourselves.* For in a very real sense, *Theos-Sophia* is the Path of Return—to discover in full consciousness what we always intuitively know we are. A stage will come, in fact *must* come, for every scientist and every seeker when the Doctrine of the Eye melts to give way to the Doctrine of the Heart when it is directly realized that the Sun<sup>6</sup> (Deity or ‘God’) cannot possibly be separated out from its Rays (individual humanity)—that ultimately our inner nature, as indeed that of every creature and all creation, is of the Sun.

The ultimate formula for Western science as indeed for all seekers is always one, but couched by the Sages of the Orient and the Occident in different words:<sup>7</sup>



So Occult Science's final and eminently practical counsel to Western science is this:

<sup>6</sup> The sun being the garment or vesture of the Sun.

<sup>7</sup> In clockwise order from the top these quotations (italics by the current writer) are from Gautama the Buddha, Jesus the Christ, Paul Brunton, Mme Blavatsky, Sri Ramana Maharshi, Sri Krishna in The Bhagavad-Gita, and in the centre, the inscription at the entrance to the Oracle at Delphi.

Send rockets to the planets and stars and probe Nature's innermost secrets of the atom if you will, but also do not forget to send the missile of thought deep into your innermost Being. For logically, the search without must be balanced by the quest within. Find Thyself and thou shalt know the Cosmos—not just its physical husks as so much information to be measured and classified—but its essential and vitally living nature. For That which made the Cosmos also made Thee, so first make **THYSELF** the object of thy Search, and only then——

This is the Ultimate Formula, The Way of the Heart, the Quest for Self, for our quest, as indeed the quest of all science must start in the heart, and then of course engage the head; but ultimately it must be consummated in the Heart. By such Spiritual Resonance with the Heart of Truth—‘God in the sun/the ‘T’ in me’—it can be affirmed, not by second-hand learning, but direct experience and *living* example, that there never was a Philosophy, there can be no Religion and there will never be a Science Higher than **TRUTH**.





## ABOUT THE AUTHOR

Edi Bilimoria (D.Phil., F.I.Mech.E., C.Eng.) is a Consultant Engineer for the transport, petrochemical and oil and gas industries. He has been Project Manager and Head of Design for major projects such as the Channel Tunnel, London Underground system and offshore installations.

Edi Bilimoria is an ardent student of Theosophy and an active member of The Theosophical Society, serving the English Section in a variety of roles. He has a life-long love of music and is an accomplished pianist.

His overall philosophy is the integration, dissemination and application of spiritual wisdom from *all* sources, both East and West, from the sciences as well as the arts and religions, into an undivided whole.

