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"A STUDY OF THE PARALLELS THAT HAVE  
DEVELOPED BETWEEN MYSTICISM AND SCIENCE."

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I.

INTRODUCTION.

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" If the doors of perception were cleansed,  
Man would see things as they are,  
Infinite....."

William Blake.

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## INTRODUCTION.

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I.

Most people born in the intellectual tradition of the twentieth century have been through an educational process which encourages them to see the World as largely explicable in terms of a series of mechanical processes. Thus we speak of 'Structures' of molecules, atoms, and fundamental particles; of the 'Building Blocks' of Life; we liken Society to a 'Clockwork. --we devise tests to enable us to predict the psychological behaviour of animals and of Man. The areas of uncertainty that remain in the explanations are covered either by the belief that sooner or later conventional science will explain most things, or by ascribing them to a concept of God that is at once all-enveloping, but with whom any personal contact, apart from formal ritual, is unlikely.

For those who claim that they have profound religious or transcendental experience, the Western Intellectual Tradition has a formidable vocabulary of words and ideas which attempt to show that such people are intellectually inadequate, or psychologically or emotionally distressed.

Yet, in other cultures, certain sections of the population have been encouraged to develop the disciplines of the exploration of their own inner space. Yoga, Zen, Tantra, the Kabbalah, Occultism, Magic, and so on. Even in the West, before our present century, members of religious orders or solitary hermits investigated otherlines, and sought release or ecstasy through Christian Transcendance, rather than, for example, sexual activity, as in Tantrik Yoga. There is also the Western Occult tradition, deriving largely from Hermeticism and Kabbalism, though at best, this has usually been regarded as a rebel system and more often dismissed with a ferocity that can only be ascribed to fear.

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It could be that the Western notion of progress in terms of physical well-being has been at the expense of suppressing the evolution of inner resources and ~~xxxxxxxx~~ understanding. The great increase in interest during the past ten years among Western Europeans and North Americans in the variety of 'Other' experiences, as manifest in the sale of books, the opening of 'Courses', and the adoption of different life-styles, could indicate an intuitive rebellion against the Mechanistic philosophies of the State, Big Industry, and Conventional Science. Yet, for each Westerner who claims to have 'been there', there are many more sceptics who, if they do not dismiss Mysticism as a 'Cop-Out', find the vocabulary of Mysticism impossible to accept.

Some scientists are rejecting the objectivisation of scientific method and their roles as impartial cosmic exiles, on the grounds that this limits their capacity to understand the world. The Mechanistic Model which is expected to explain what happens around us and to us is failing to operate in small-particle Physics, in fundamental Biology, and in the Social Sciences. It is claimed that Science is not able to explain the behaviour of and relationship between objects, giving us instead a series of attempts to explain the phenomena of experience.

If this common-sense view prevails, then Transcendentalism, long ~~shuffled~~ ~~xxxxxxxx~~ out of the way because to explain it is inconvenient in a mechanistic world, reasserts its claim on the Western Intellectual Tradition. For the world views of Science and Mysticism are drawing close to a parallel. In its search for fundamental particles or matter, Atomic Physics is discovering that the Universe is a self-consistent whole, -- an organic Universe in which no part is more fundamental than



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any other, and this also includes the human consciousness, which we are now discovering is part of this organic whole. This has been the essential message of the major mystical traditions in the Eastern and in the Western World.

In the first part of this essay, I will briefly examine some of the major Eastern Mystical traditions, their philosophy and development. In the second and third sections, I shall be examining the parallels and comparisons between Mysticism and Science, and particularly the implications of the "Bootstrap Hypothesis" by Geoffrey Chew.

The fourth and final section presents an examination of some experiments in Living, Education, and Architecture that reflect the organic concepts of Science and Mysticism, together with some examples of peoples' reactions to these changes we are undergoing.

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CHAPTER I.                    BASIC PRINCIPLES AND PHILOSOPHIES OF MYSTICISM.  
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"I am entering a Solemn House.                    It is called  
"The House of Inner Composure or Self Collection". In the background  
are many burning candles arranged so as to form four pyramid-like points.  
An Old Man stands at the door of the House.    People enter.    They do  
not talk, and often stand still in order to concentrate.

The Old Man at the door tells me about the visitors to the House,  
and says "When they leave, they are pure."                    I enter the House now, and  
I am able to concentrate completely."

C.G.Jung.

----A Patient's Dream.

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BASIC PRINCIPLES AND PHILOSOPHIES OF MYSTICISM.  
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Since I will be continually referring to Mysticism and comparing its various forms, an explanation of their origins and a description of basic principles and philosophies is necessary.

Almost all civilisations have developed Mysticism in one form or another. In the West, before the dawn of Christianity, there was the religion of the "Mother Earth", the evidence of which is scattered throughout Europe. In the Middle East, there developed a profound mysticism based on the Kabalah, much of which probably came from Ancient Egypt. In Europe, the mysticism of Egypt, Israel, and the ancient pre-Christian religions were combined to form what is commonly known as the Occult. However, its development was greatly hampered by the Christian Churches. There is also evidence across the continents of North and South America of strong mystical developments.

The mystical traditions of the Far East are perhaps the easiest to follow, mainly because they became an integral part of the lives of the people in the earliest stages, and hence were widely documented, so that they possess the greatest bulk of evidence in literary form.

In all Mysticism, the main aim is the direct mystical experience of Reality, even though various cultures at different times have translated this experience in different ways, using symbols most suited to the cultures in which they arose, and calling its aspects and forces by a variety of names. However, at the heart of it, they are essentially the same, their goal being a transcendental experience which unifies all the apparently fragmented experiences of everyday life into an organic inseparable whole.



Since, then, the traditions of the Far East are best suited to our purpose, we will be examining the traditions of Hinduism, Buddhism, Taoism, and Zen.

The Wholistic or Organic World View is one that modern scientists tell us is more fundamental than the Mechanistic or Fragmented World view of cause and effect. In the following chapters, I hope to show this parallel in concepts that have evolved since scientists began exploring the atomic and sub-atomic realms. But more than for any other other Eastern tradition, this is true for Hinduism, where the connection between philosophy and religion is particularly strong.

It has been said that almost all thought in India is, in a sense, religious thought, and Hinduism has not only influenced throughout many centuries India's intellectual life, but almost completely determined her social and cultural life as well. Hinduism cannot be called a Philosophy, nor is it a well-defined Religion. It is rather a large and complex socio-religious organism consisting of innumerable sects, cults, and philosophical systems, and involving various rituals, ceremonies, and spiritual disciplines, as well as the worship of countless gods and goddesses.

The many facets of this complex and yet persistent and powerful spiritual tradition mirror the geographical, racial, linguistic, and cultural complexities of India's vast sub-continent. The manifestations of Hinduism range from highly intellectual philosophies involving conceptions of imabulous range and depth to the simple ritual practices of the masses. It has also brought forth a large number of outstanding spiritual teachers to transmit its profound insights.

The spiritual source of Hinduism lies in the Vedas, a collection of ancient scriptures written by anonymous sages, .. the so-called Vedic seers.

There are four Vedas, the oldest of them being the Rig Veda, written in ancient Sanskrit, the sacred language of India. The Vedas have remained the highest authority for most sections of Hinduism. In India, any philosophical system that does not accept the authority of the Vedas is considered to be unorthodox.

Each of these Vedas consists of several parts, which were composed at different periods, ...probably between 1500 B.C. and 500 B.C. The masses of the Indian people have received the teachings of Hinduism, not through the Upanishads, but through a large number of popular tales, collected in extensive Epics, which are the basis of the vast and colourful Indian mythology. One of these Epics, the Mahabharata, contains India's favourite religious text, .. the beautiful spiritual poem of the Bhagavad-Gita. The Gita, as it is commonly called, is a dialogue between the god Krishna and the warrior Arjuna, who is in tragic despair, being forced to engage in combat against his own kinsmen. In the great family war which forms the main story of the Mahabharata, Krishna, disguised as Arjuna's charioteer, drives the chariot right between the two armies, and in this dramatic setting of the battlefield, he begins to reveal to Arjuna the most profound truths of Hinduism. As the god speaks, the realistic background of the war between the two families soon fades away, and it becomes clear that the battle of Arjuna is the spiritual battle of Man, --- the battle of the warrior in search of enlightenment. Krishna himself advises Arjuna : "Kill therefore with the sword of wisdom the doubt born of ignorance that lies in thy heart. Be One in self-harmony, .. in Yoga. Arise, great warrior. Arise ....."

The basis of Krishna's spiritual instructions, as of all Hinduism, is the idea that the multitude of things and events around us are but



but / different manifestations of the same ultimate reality. This reality called Brahman is the unifying concept which gives Hinduism its essential monotheistic character in spite of the worship of numerous gods and goddesses.

Brahman, the ultimate reality, is understood as the 'soul' or 'inner essence' of all things. It is infinite and beyond all concepts. It cannot be comprehended by the intellect, nor can it be adequately described in words. Brahman is 'beginningless', supreme, ... beyond what is, and beyond what is not. Incomprehensible is that supreme soul; unlimited, unborn; not to be reasoned about; unthinkable. Yet people want to talk about this Reality, and the Hindu sages, with their characteristic penchant for myth, have pictured Brahman as divine, and do talk about it, -- In mythological language, the various aspects of the Divine have been given the names of the gods worshipped by the Hindus, but the scriptures make it clear that all these gods are but reflections of the one Ultimate Reality.

The basic recurring theme in Hindu mythology is the creation of the world by the self-sacrifice of God, ... sacrifice in the original sense of 'making sacred', whereby God becomes the world, which in the end becomes God again. This creative activity of the Divine is called 'Lila', the 'play' of God, and the world is seen as the stage of the Divine Play. Like most of Hindu mythology, the Myth of Lila has a strong magical flavour.

Brahman is the Great Magician who transforms himself into the World, and he performs this feat with his magic creative power, which is the original meaning of 'Maya'. In the Rig Veda, the word 'Maya' (one of the most important terms in Indian philosophy) has altered its meaning over the centuries. From the might - or power - of the divine actor and magician, it came to signify the psychological state of anybody under the spell of the Magic Play. As long as we confuse the myriad forms of the divine Lila with reality,

reality /

without perceiving the unity of Brahman underlying all these forms, we are under the spell of Maya.

'Maya', therefore, does not mean that the world is an illusion, as is often wrongly stated. The illusion merely lies in our point of view, if we think that the shapes and structures, things and events around us are realities of Nature instead of realising that they are concepts of our measuring and categorising minds. 'Maya' is the illusion of taking these concepts for reality, of confusing the map with the territory.

In the Hindu view of Nature, then, all forms are relative, fluid, and ever-changing Maya, conjured up by the Great Magician of the Divine Play. The world of Maya changes continuously, because the divine Lila is a rhythmic dynamic play. And the dynamic force of the play is Karma, another important concept of Indian thought.

Karma means 'Action'. It is the active principle of the Play, the total Universe in action, where everything is dynamically connected with everything else. In the words of the Gita, "Karma is the force of creation, wherefrom all things have their life"

The meaning of 'Karma', like that of Maya, has been brought down from the original cosmic level to the human level, where it has acquired a psychological sense. As long as our view of the world is fragmented, as long as we are under the spell of Maya, think that we are separated from our environment and can act independently, we are bound by Karma.

Being free from the bond of Karma means to realise the unity and harmony of all Nature, including Man, and to act accordingly. To be free from the spell of Maya --- to break the bonds of Karma ---- means to realise that all phenomena we perceive with our senses are part of the same reality. It means to experience concretely and personally that everything,



everything/

including our own Self, is Brahman. This experience is called Moksha, or Liberation, in Hindu philosophy and is the very essence of Hinduism.

The abundance of goddesses in Hinduism shows that the physical and sensuous side of human nature is a fully integrated part of the divine. Hindu goddesses are shown not as holy virgins, but in sensual embraces of vivid beauty.

The Western mind is easily confused by the diversity of gods and goddesses which populate Hindu mythology in their various appearances and incarnations. To understand how the Hindus can cope with this multitude of divinities, we must be aware of the basic attitude of Hinduism, .. that, in substance, all these divinities are identical. They are all manifestations of the same divine reality, reflecting different aspects of the infinite, omnipresent and --- ultimately ----Incomprehensible Brahman.

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#### BUDDHISM.

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Another major Eastern tradition is Buddhism, which has been for many centuries the dominant spiritual tradition in most parts of Asia, including the countries of Indochina, Sri Lanka, China, Nepal, Tibet, Korea, and Japan. As with Hinduism, it has had a strong influence on the intellectual, cultural and artistic side of these countries. Unlike Hinduism however, Buddhism goes back to a single founder, Siddhartha Guatama, the so-called historic Buddha.

He lived in the middle of the sixth century B.C., during the extraordinary period which saw the birth of so many spiritual and philosophical geniuses : Confucius and Lao Tzu in China, Zarathustra in Persia, and

Pythagoras and Heraclitus in Greece. If the flavour of Hinduism is mythological and ritualistic, that of Buddhism is definitely psychological. The Buddha was not concerned with satisfying human interest about the origin of the world, the nature of the Divine, or similar questions. He was concerned exclusively with the Human Situation, .. with the suffering and frustrations of human beings. His doctrine, therefore, was not one of metaphysics, but one of psychotherapy. He pointed out the origin of human frustrations, and the way to overcome them, taking for this purpose the traditional Indian concepts of Maya, Karma, Nirvana, and giving them a fresh, dynamic and directly relevant psychological interpretation.

After the Buddha's death, Buddhism developed into two main schools, --- the Hinayana and the Mahayana. The Hinayana is an orthodox school, which sticks to the letter of the Buddha's teaching, whereas the Mahayana shows a more flexible attitude, believing that the spirit of the doctrine is more important than the original formulation. The Mahayana eventually became the more important of the two schools.

In India itself, Buddhism was absorbed by the flexible and assimilative Hinduism, and the Buddha was finally adopted as an incarnation of the god Vishnu. But as Buddhism spread across Asia, it came into contact with peoples of many different cultures and mentalities who interpreted the Buddha's doctrine from their own point of view, elaborating many of the subtle points in great detail and adding their own original ideas. In this way they kept Buddhism alive for many centuries and developed highly sophisticated philosophies with profound psychological insights.

In spite of the highly intellectual level of these philosophies, however, Buddhism never loses itself in abstract speculative thought. As always in



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Mysticism, the intellect is seen merely as a means to clear the way for the direct Mystical Experience, which Buddhists call The Awakening. The essence of this experience is to pass beyond the world of intellectual distinctions and opposites to reach the world of Acintya the Unthinkable, where Reality appears as undivided and undifferentiated 'Suchness'.

This was the experience Siddhartha Guatama had one night, after seven years of strenuous discipline in the forests. Sitting in deep meditation under the celebrated Bodhi tree, he suddenly obtained the final and definite clarification of all his searches and doubts in the act of unexcelled complete awakening, which made him The Buddha, ... that is, 'The Awakened'. For the Eastern world, the Buddha's image in the state of meditation is as significant as the image of the Crucified Christ for the West, and has inspired countless artists throughout Asia who have created magnificent sculptures of meditating Buddhas.

According to Buddhist tradition, the Buddha went to the deer park of Benares after his awakening, to preach his doctrine to his former fellow hermits. He expressed it in the form of the celebrated Four Noble Truths, a compact presentation of the essential doctrine which is not unlike the statements of a physician who first identifies the cause of Humanity's sickness, then affirms that the sickness can be cured, and finally prescribes the remedy. The first Noble Truth states that the outstanding characteristic of the Human Situation...Dukkha ....is suffering or frustration. This frustration comes from our difficulty in facing the basic facts of life.. that everything around us is impermanent and transitory. "All things arise, and pass away ....."; and the notion that flow and change are basic features of Nature lies at the root of Buddhism.

In the Buddhist view, suffering arises whenever we resist the flow of Life and try to cling to fixed forms, which are all 'Maya', whether they are

are things, events, people, or ideas. This doctrine of impermanence includes also the notion that there is <sup>no</sup> Ego, .. no Self, which is the persistent subject of our varying experiences. Buddhism holds that the idea of separate and individual Self is an illusion, .. another form of Maya ... an intellectual concept which has no reality. To cling to this concept leads to the same frustration as adherence to any other fixed category of thought.

The Second Noble Truth deals with the cause of all suffering...."Trishna", which is clinging or grasping. It is the futile grasping of Life based on a wrong point of view, which is called "Avidya", or Ignorance, In Buddhist philosophy, Out of this ignorance we divide the perceived world into individual and separate things, and thus attempt to confine the fluid forms of Reality in fixed categories created by the mind. As long as this view prevails, we are bound to experience continued frustration, .. trying to cling to things which we see as firm and persistent, but which in fact are transient and ever-changing. We are trapped in a vicious circle where every action generates further action, and the answer to each question poses new questions.

This vicious circle is known in Buddhism as 'Samsara', or 'The Round of Birth and Death', and is driven by Karma, the never-ending chain of cause and effect.

The Third Noble Truth states that the suffering and frustration can be ended. It IS possible to transcend the vicious circle of Samsara, to free oneself from the bondage of Karma, and to reach a state of total liberation, called Nirvana. In this state, the false notions of a separate Self have forever disappeared and the Oneness of all Life has become a constant sensation. Nirvana is the equivalent of Moksha in Hindu philosophy, and being a state of consciousness beyond all intellectual concepts, it defies further description. To reach Nirvana is to attain Awakening, or Buddhahood.

The Fourth Noble Truth is the Buddha's prescription to end all suffering,



the Eightfold Path of Self Development which leads to the state of Buddhahood. T  
The first two sections of this Path, as already mentioned, are concerned with Right Seeing and Right Knowing, that is, with clear insight into the Human Situation. That is the necessary starting point. The next four deal with Right Action. They give the rules for the Buddhist way of life, which is the middle way between extremes. The last two sections are concerned with Right Awareness and Right Meditation. and describe the direct mystical experience of Reality which is the final goal.

The views of Buddhism presented so far reflect its intellectual and speculative side. This however is only one side of Buddhism. Complementary to it is the Buddhist's religious consciousness which involves faith, love, and compassion. True enlightened wisdom is seen in Buddhism as composed of two elements which Suzuki has called "The two pillars supporting the great edifice of Buddhism". They are Prazna, which is transcendental wisdom, -- or intuitive intelligence ..; and Karuna, .. which is love and compassion.

The emphasis on love and compassion as essential parts of Wisdom has found its strongest expression in the ideal of the Bodhisattra, one of the characteristic developments of Mahayana Buddhism. A Bodhisattra is a highly evolved human being on the way to becoming a Buddha, who is not seeking enlightenment for himself alone, but has vowed to help all other beings achieve Buddhahood before he enters Nirvana himself. The origin of this idea lies in the decision of the Buddha (presented in Buddhist tradition as a conscious and not at all easy decision) not simply to enter Nirvana, but to return to the world in order to show the path to salvation to his fellow human beings. The Bodhisattra Ideal is also consistent with the Buddhist

Buddhist/

doctrine of non-ego, because if there is no separate individual self, the idea of one individual entering Nirvana alone obviously does not make much sense. The culmination of Buddhist thought has been reached, according to many authors, in the so-called Avatamsaka School, which is based on the Sutra of the same name. This Sutra is regarded as the 'Core' of Mahayana Buddhism, and is praised by Suzuki in the most enthusiastic words:-

" As to the Avatamsaka Sutra, it is really the consummation of Buddhist thought, sentiment, and experience. To my mind, no religious literature in the world can ever approach the grandeur of conception, the depth of feeling, and the gigantic scale of composition as attained in this Sutra. It is the eternal foundation of Life from which no religious mind will turn back athirst or only partially satisfied."

It was this Sutra which stimulated Chinese and Japanese minds more than anything else when Buddhism spread across Asia. The contrast between the Chinese and Japanese on the one hand, and the Indians on the other is so great that they have been said to represent two poles of the human mind. Whereas the former are practical, pragmatic, and socially minded, the latter are imaginative, metaphysical, and transcendental. When the Chinese and Japanese philosophers began to translate and interpret the Avatamsaka, one of the greatest scriptures produced by Indian religious genius, the two poles combined to form a new dynamic unity, and the outcome was the Hua-Yen philosophy in China, and the Kogon philosophy in Japan, which constitute the climax of Buddhist thought and which has been developing in the Far East for the last two thousand years.

The central theme of the Avatamsaka is the unity and inter-relation of all things and events, a conception which is not only the very essence of the



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mystical world view, but also one of the basic elements of the world view emerging from modern physics. It will therefore be seen that the Avatamsaka Sutra, this ancient religious text, offers the most striking parallels to the models and theories of modern Physics.

When Buddhism arrived in China around the first century A.D., it encountered a culture nearly two thousand years old. In this ancient culture, philosophical thought had reached its culmination during the late Chou period, the Golden Age of Chinese Philosophy, (c.550B.C.) and from then on, had always been held in the highest esteem.

From the beginning, this philosophy had two complementary aspects. The Chinese being practical people with a highly developed social consciousness all their Philosophical Schools were concerned, in one way or another, with Life and Society, with Human Relations, moral values, and Government. This, however, is only one aspect of Chinese thought. Complementary to it is that corresponding to the mystical side of the Chinese character, which demanded that the highest aim of Philosophy should be to transcend the world of society and everyday life, and to reach a higher plane of consciousness. This is the plane of the Sage, the Chinese ideal of the man who has achieved mystical union with the Universe.

The Chinese Sage, however, does not dwell exclusively on this high spiritual plane, but is equally concerned with worldly affairs. He unifies in himself the two complementary sides of human nature, .. Intuitive Wisdom and Practical Knowledge, .. Contemplation and Social Action... which the Chinese have associated with the images of the Sage and the King. In the words of Chuang Tzu:-

"By their stillness become Sages.

By their movements, Kings."

# TAOISM.

The originator of Taoism was Lao-Tzu, whose name literally means 'The Old Master', and who according to tradition, was an older contemporary of Confucius. He is said to have been the author of a short book of aphorisms which is considered as the main Taoist scripture. In China, it is called simply 'The Lao-Tzu'; in the West it is usually known as the TaoTaChing, or "The Classic of the Way and Power".

It is written in an extremely paradoxical style, in very powerful and poetic language. Joseph Needham considers it to be, without exception, "the most profound and beautiful work in the Chinese language." The Chinese, like the Indians, believed that there is an Ultimate Reality which underlies and unifies the multiple things and events we observe. There are the three terms, "...Complete", "All-embracing", "The Whole". These names are different, but the Reality sought in them is the same, referring to the one thing. They called this Reality the Tao, which originally meant 'The Way'. It is the way or process of the Universe, ... the Order of Nature.

In its original cosmic sense, the Tao is the ultimate, undefinable Reality, and as such it is the equivalent of the Hinduist 'Brahman' and the Buddhist 'Dharmakaya'. It differs from these Indian concepts, however, by its intrinsically dynamic quality, which in the Chinese view is the essence of the Universe. The Tao is the cosmic process in which all things are involved. The World is seen as a continuous flow and change.

The Chinese believed not only that the flow and change were the essential features of Nature, but also that there are constant patterns in these changes, to be observed by Man. The Sage recognises these patterns, and directs his actions according to them. In this way, he becomes 'One with the Tao', living in harmony with Nature and succeeding in everything he



everything he /

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undertakes. In the words of Huai Nan Tzu: "He who conforms to the course of the Tao, following the natural processes of Heaven and Earth, finds it easy to manage the whole world".

The principal characteristic of the Tao is the cyclic nature of its ceaseless motion and change. "Returning is the motion of the Tao", says Lao Tsu, "and going far means returning." The idea is that all developments in Nature, those in the physical world as well as those in the human situation, show cyclic patterns of coming and going, of expansion and contraction.

The Chinese believed that whenever a situation develops to its extreme, it is bound to turn around and become the opposite. This basic belief has given them courage and perseverance in times of distress, and has made them cautious and modest in times of success. It has led to the doctrine of The Golden Mean, in which both Confucianists and Taoists believe.

In the Chinese view, it is better to have too little than too much, and better to leave things undone than to overdo them, because although one may not get very far this way, one is certain to go in the right direction. Just as a man who wants to go farther and farther East will end up in the West, those who accumulate more and more money in order to increase their wealth will end up being poor. Modern Industrial Society which is continuously trying to 'increase the Standard of Living', and thereby decreases the quality of Life for all its members is an eloquent illustration of this ancient Chinese wisdom.

Taoism is interested in intuitive Wisdom rather than rational Knowledge. Acknowledging the limitations and the relativity of the world of rational thinking, Taoism is basically a way of liberation from this world, and is, in this respect, comparable to the ways of Yoga or Vedanta in Hinduism, or to the eightfold path of the Buddha.

In the context of Chinese culture, the Taoist Liberation meant, more specifically, a liberation from the strict rules of convention.

Mistrust of conventional knowledge and reasoning is stronger in Taoism than in any other school of Eastern philosophy. It is based on the firm belief that the human intellect can never comprehend the Tao. In the words of Chuang Tzu: "The most extensive knowledge does not necessarily know it; reasoning will not make men wise in it; the Sages have decided against both these methods."

Chuang Tzu's Book is full of passages reflecting the Taoist contempt for reasoning and argumentation. Thus, he says: "A dog is not reckoned good because he barks well. And a man is not reckoned wise because he speaks skilfully."

Logical reasoning was considered by the Taoists as part of the artificial world of Man, together with social etiquette and moral standards. They were not interested in Man's world at all, but concentrated fully on the observation of Nature in order to discern the characteristics of the Tao. Thus, they developed an attitude that was essentially scientific and only their deep ~~mistrust~~ mistrust of the Analytic Method prevented them from constructing scientific theories. Nevertheless, the careful observation of Nature, combined with a strong mystical intuition, led the Taoists Sages to profound insights, many of which are confirmed by modern scientific theories. The Taoists saw all changes in Nature as manifestations of the dynamic interplay between the Polar opposites, Yin and Yang., and thus they came to believe that any pair of opposites constitutes a polar relationship where each of the two poles is dynamically linked to the other.

When we talk about the Taoist concept of change, it is important to realise that this change is not seen as occurring as a consequence of some Force but rather as a tendency which is innate in all things and situations.



The movements of the Tao are not forced upon it, but occur naturally and spontaneously. Spontaneity is the Tao's principle of action, and since human conduct should be modelled on the operation of the Tao, spontaneity should also be a characteristic of all human actions.

Acting in harmony with Nature thus means for the Taoists acting spontaneously, and according to one's own true nature. It means trusting one's intuitive intelligence, which is innate in the human mind, just as the Law of Change is innate in all things around us. The actions of the Taoist Sage thus rise out of his intuitive wisdom, spontaneously and in harmony with his environment. He does not need to force himself or anything around him, but merely adapts his actions to the movement of the Tao.

Huai Nan Tzu says : " Those who follow the Natural Order flow in the current or the Tao". Such a way of acting is called Wu-Wei in Taoist philosophy; a term which means literally 'Non-Action', and which is translated as 'refraining from Activity contrary to Nature'. If one refrains from acting contrary to Nature, .... from going against the grain of things .. one is in harmony with the Tao, and thus one's actions will be successful. This is the meaning of LaoTzu's seemingly so-puzzling words : "By non-action, everything can be done."

When the Chinese mind came in contact with Indian thought in the form of Buddhism, two parallel developments took place. On the one hand, the translation of the Buddhist Sutras stimulated Chinese thinkers and led them to interpret the teachings of the Indian Buddha in the light of their own philosophies. Thus arose an immensely fruitful exchange of ideas which culminated, as already mentioned, in the Hua-Yen School of Buddhism in China, and the Kegon School in Japan.

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Z E N.

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The pragmatic side of the Chinese mentality responded to the impact of Indian Buddhism by concentrating on its practical aspects, and developing them into special kind of spiritual discipline which was given the name Ch'an, a word usually translated as 'meditation'. This Ch'an philosophy was eventually adopted by Japan around 1200 A.D. and has been cultivated there under the name of Zen as a living tradition up to the present day.

ZEN is thus a unique blend of the philosophies and idiosyncracies of three different cultures; it is a way of life which is typically Japanese, and yet it reflects the mysticism of India, the Taoists love of naturalness and spontaneity, and the thorough pragmatism of the Confucian mind.

In spite of its rather special character, Zen is purely Buddhistic in its essence, because its aim is no other than that of the Buddha himself: the attainment of enlightenment, ... an experience known in Zen as 'Satori'.

The enlightenment experience is the essence of all schools of Eastern philosophy, but Zen is unique in that it concentrates exclusively on this experience, and is not interested in any further interpretation. In the words of Suzuki: "ZEN is discipline in enlightenment". From the standpoint of Zen, the awakening of the Buddha and the Buddha's teaching that everybody has the potential of attaining this awakening are the essence of Buddhism.

The rest of the doctrine, as expounded in the voluminous Sutras, is seen as supplementary. The experience of Zen is thus the experience of Satori, and since this experience ultimately transcends all categories of Thought, Zen is not interested in any abstraction or conceptualisation. It has no special doctrine or philosophy; no formal creeds or dogmas; and it asserts that this freedom from all fixed beliefs makes it truly spiritual.



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More than any other school of Eastern Mysticism, Zen is convinced that words can never express the ultimate Truth. It must have inherited this conviction from Taoism, which showed the same uncomcrising attitude.

The Zen experience can be passed on from teacher to pupil, and it has in fact been transmitted for many centuries by special methods proper to Zen. In a classic summary of four lines, Zen is described as :-

"A special transmission outside the Scriptures  
Not founded upon words and letters ,  
Pointing directly to the human mind  
Seeing into one's nature and attaining Buddhahood."

This technique of 'direct pointing' constitutes the special flavour of Zen. It is typical of the Japanese Mind, which is more intuitive than intellectual, and likes to give out facts as facts without much comment. The Zen masters were not given to verbosity, and despised all theorising and speculation. Thus they developed methods of 'pointing' directly to the truth, with sudden or spontaneous actions or words which expose the paradoxes of conceptual thinking, and, like Koans, are meant to STOP the thinking process to make the student ready for the Mystical Experience. Koans are carefully devised nonsensical riddles which are meant to make the student of Zen realise the limitations of Logic and Reasoning in the most dramatic way.

The irrational wording and paradoxical content of these riddles make it impossible to solve them by thinking; they are designed precisely to STOP the thought process, and thus to make the student ready for the non-verbal experience of Reality.

This technique is well illustrated by the following examples of

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" A monk asking for instructionsaid to Bodhidharma "I have no peace of mind.  
please pacify my mind". "Bring your mind here before me and I will pacify it",  
replied Bodhidharma. "But when I seek my own mind ",said the monk "I  
cannot find it."

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In Zen, Satori means the immediate experience of the Buddha nature of



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all things. First and foremost among these things are the objects, affairs and people involved in everyday life, so that while it emphasises life's practicalities, Zen is nevertheless profoundly mystical. Living entirely in the present and giving full attention to everyday affairs, one who has attained Satori experiences the wonder and mystery of Life in every single act.

The perfection of Zen is thus to live one's everyday life naturally and spontaneously. When Tso-Chang was asked to define Zen, he said: "When hungry, eat. When tired, sleep!" Although this sounds simple and obvious, like so much in Zen, it is, in fact, quite a difficult task. To regain the naturalness of our original nature requires long training, and constitutes a great spiritual achievement.

Zen's emphasis on naturalness and spontaneity certainly shows its Taoist roots,, but the basis for this emphasis is strictly Buddhistic. It is the belief in the perfection of our original nature, the realisation that the process of enlightenment consists merely in becoming what we already are from the beginning. When the Zen Master Po-Chong was asked about seeking for the Buddha nature, he answered: "It is much like riding an ox in search of the Ox."

There are two principal schools of Zen in Japan to-day which differ in their methods of teaching. The Rinzai, or ~~Kanmyoshinkan~~ 'Sudden' school uses the Koan Method, as already discussed, and gives prominence to periodic formal interviews with the Master, called 'SanZen', during which the student is asked to present his view of the Koan he is trying to solve. The solving of a Koan involves long periods of intense concentration, leading up to the sudden insight of Satori. An experienced Master knows when the student has reached the verge of sudden enlightenment, and is able to shock him, or her, into the Satori experience with unexpected acts, such as a blow with a stick, or

stick/

or a loud yell. The Soto or Gradual School avoids the shock methods of Rinzai, and aims at a gradual maturing of the young student, 'like the Spring breeze which caresses the flower, helping it to bloom.' It advocates quiet sitting and the use of one's ordinary work as two forms of meditation.

Both the Soto and Rinzai Schools attach the greatest importance to Zazen, or Sitting Meditation, which is practised in the Zen monasteries every day for many hours. The correct posture and breathing involved in this form of meditation is the first thing every student of Zen has to learn. In Rinzai Zen, Zazen is used to prepare the intuitive mind for the handling of the Koan, and the Soto school considers it as the most important means to help the student mature, and evolve towards Satori. More than that, it is seen as the actual realisation of one's Buddha nature, -- body and mind being fused into a harmonious unity which needs no further improvement. As a Zen poem says :-

"Sitting quietly, doing nothing,

Spring comes, and the grass grows by itself."

Since Zen asserts that enlightenment manifests itself in everyday affairs, it has had an enormous influence on all aspects of the traditional Japanese way of life. These include not only the arts of painting, calligraphy, garden design and so on, and the various crafts, but also ceremonial activities like serving tea or arranging flowers, and the Martial arts of archery, Judo, and swordsmanship. Each of these activities is known in Japan as a "Do", .. that is, a Tao or 'Way', towards enlightenment. They all explore various characteristics of the Zen Experience, and can be used to train the mind and bring it into contact with the Ultimate Reality.

The Japanese Tea Ceremony, with its slow ritualistic activities, the spontaneous movement of the hand required for Calligraphy, and painting, and the



the/

spirituality of 'Bushido', .. the 'Way of the Warrior' ... all these are expressions of the spontaneity, simplicity, and total presence of mind characteristic of the Zen Life. While they all require a perfection of technique, real mastery is only achieved when technique is transcended, and the Art becomes an 'Artless Art', growing out of the Unconscious.

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## S U M M A R Y.

Mysticism in its earliest stages recognised the paradoxes inherent in Nature, and has acknowledged it as part and parcel of the make-up of the Universe.

These paradoxes have only recently been discovered in the scientific world, however, and scientists have realised that , for a fuller understanding of the world, they must be taken into consideration.

In Mysticism, the universal Interwovenness always includes the human observer and his Consciousness, and this is now true of Atomic Physics. At the Atomic level, 'Objects' can only be understood in terms of the inter-action between the processes of preparation and measurement. The end of this chain of processes lies always in the consciousness of the human observer.

Measurements are 'inter-actions' which create 'sensations' in our consciousness, - for example, the visual sensation of a flash of light, or of a dark spot on a photographic plate - and the laws of Atomic Physics tell us with what probability an atomic object will give rise to a certain sensation, if we let it interact with us.

"Natural science", says Heisenberg "is part of the interplay between Nature and ourselves."

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## CHAPTER II.

## COMPARISONS.

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"One thing I have learned in a long life : that all our Science , measured against Reality, is primitive and childlike. And yet ---- it is the most precious thing we have . "

— — — — — ALBERT EINSTEIN.

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## COMPARISONS.

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The advances that have come about in the last fifty years or so in the scientific areas of study have been phenomenal.

However, these 'new' discoveries, especially in the areas of Physics and Biology, are not so new or startling. For thousands of years mystics and magicians have realised these concepts, .. not through formulae and equations, but through direct experience.

The seeming diversities between the logical and the intuitive approach to Reality are now drawing closer to a synthesis, as they were for thousands of years in ancient civilisations. They perhaps reached their greatest polarities over the past two hundred years or so, when the concepts of Newtonian physics were at their height.

The greatest problem that beset the mystics was to translate their experiences into words. However, the problem is that the whole of these Inner Experiences transcends language, which by its very nature cannot cope with experiences that are beyond logic and systematic reasoning.

Scientists now face these same language problems. All scientific models and theories are approximate, and their verbal interpretation always suffers from the inadequacy of our language. The study of the world of Atoms forced scientists to realise that our common language is not only inaccurate, but totally inadequate to describe atomic and sub-atomic reality.

The Quantum Theory and the Theory of Relativity, the two bases for modern Physics, have made it clear that this reality transcends traditional understanding, and that we cannot talk about it in ordinary language.

Heisenberg writes : " The most difficult problem concerning the use of language arises in Quantum Theory. Here we have at first no simple guide.



The problem of language encountered by mystics is exactly the same problem that the modern physicist faces to-day. Both the mystic and the physicist want to communicate their knowledge, and when they do so with words their statements are paradoxical and full of logical contradictions. These paradoxes are characteristic of all mysticism from Heraclitus to Don Juan, and since the beginning of this century they are characteristic of Physics.

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Interference phenomena of this kind can be observed whenever one deals with electro-magnetic radiation, and force us to conclude that this radiation consists of waves. On the other hand, electro-magnetic radiation also produces

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the so-called photo-electric effect. When ultra-violet light is shone on the surface of some metals, it can 'kick out' electrons from the surface of the metal, and therefore it must consist of moving particles. A similar situation occurs in the Scattering experiments of X-Rays. These experiments can only be interpreted correctly if they are described as collisions of Light particles with electrons,.... and yet, they show the interference patterns characteristic of waves. The question which puzzled physicists in the early stages of Atomic theory was HOW electromagnetic radiation could simultaneously consist of particles (i.e. of entities of energy confined to a very small volume) and of waves, which are spread out over a large area of space. Neither language nor imagination could deal with this kind of reality very well.

This paradoxical aspect of Reality has been long recognised by mystics, especially those of the Far East. They are bypassed in Hinduism through the use of mythical language, and likewise in the Western Occult systems through the use of esoteric language. However, in the Buddhist and Taoist systems, they tended to emphasise the paradoxes rather than conceal them. The main Taoist scripture, Lao Tzu's 'Tao Te Ching' is written in an extremely puzzling, seemingly illogical style. It is full of intriguing contradictions, and its compact, powerful, and extremely poetic language is meant to arrest the readers mind, and throw it off its familiar tracks of logical reasoning. However, the 'Tao Te Ching' comes far closer to describing the true nature of Reality, in the light of modern Physics, than any attempt through a coherent logical use of language.

Whenever the essential nature of things is analysed by the intellect, it must seem absurd or paradoxical. This has always been recognised



recognised /

by the mystics, but has become a problem of Science only very recently. For centuries, scientists were searching for the fundamental laws of Nature, underlying the great variety of natural phenomena. These phenomena belonged to the scientists' macroscopic environment, and thus to the realm of their sensory experience. Since the images and intellectual concepts of their language were abstracted from this very experience, they were sufficient and adequate to describe the natural phenomena.

Questions about the essential nature of things were answered in classical Physics by the Newtonian mechanistic model of the universe, which, much in the same way as the Democritean model in ancient Greece, reduced all phenomena to the motions and interactions of hard indestructible atoms. The properties of those atoms were abstracted from the macroscopic notion of billiard balls, .. and thus from sensory experience. Whether this notion could actually be applied to the world of Atoms was not questioned, .. indeed it could not be investigated experimentally.

In the Twentieth century, however, physicists were able to tackle the question experimentally with the help of a most sophisticated technology. They were able to probe deeper and deeper into Nature, uncovering one layer of matter after another, in search of its ultimate building blocks. Thus, the existence of atoms was verified; then their constituents were discovered, --the <sup>nuclei</sup>~~nuclei~~ and electrons;; and finally the components of the nucleus --- the protons and neutrons --- and many other sub-atomic particles.

The delicate and complicated instruments of modern experimental physics penetrate deep into the subatomic world, into realms of Nature far removed from our macroscopic environment, and make this world

this world /

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accessible to our senses. However, they can do so only through a chain of processes ending, for example, in an audible 'Click' of a Geiger Counter, or as a dark spot on a photographic plate. What we see or hear are never the investigated phenomena themselves, but always their consequences. The atomic and sub-atomic world itself lies beyond our sensory perception.

It is then, with the help of modern instruments that we are able to observe the properties of atoms and their constituents in an indirect way, and thus to 'experience' the sub-atomic world to some extent. This experience, however, is not an ordinary one, comparable to that of our daily environment. The knowledge about Matter, at this level, is no longer derived from direct sensory experience, and therefore our ordinary language which takes its images from the world of the senses is no longer adequate to describe the observed phenomena. As we penetrate deeper and deeper into Nature, we have to abandon more and more of the images and concepts of ordinary language.

On this journey to the world of the Infinitely Small, the most important step, from a philosophical point of view, was the first one: the step into the world of atoms. Probing inside the atom and investigating its structure, Science transcended the limits of our sensory perception;::: from this point on, it could no longer rely on our language. Atomic Physics provided scientists with the first glimpse of the essential nature of things. Like the mystics, physicists were now dealing with phenomena beyond normal experience, and like the mystics, they had to face the paradoxical aspects of this experience.

We have now reached a point where we must realise that the conventional means of delineating perception, .. such as logic and reason ... are not exclusively right, and therefore inhibit our view of reality.

The physicists who were involved in the discoveries of the atomic



atomic/

and sub-atomic worlds had to discard pre-conceptions and go through an expansion of reason. Their experiences are not unique.

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E I N S T E I N.

[illegible]

During periods of root expansion of Thought and Reason, things have always looked as confused and purposeless as they do now. One of the major causes of the Renaissance is supposed to have resulted from Columbus' discovery of the New World. There is nothing in the Flat Earth view of the Old and New Testaments that predicted it. Yet people couldn't deny it. The only way they could assimilate it was to abandon the entire Mediaeval outlook, and enter into a new expansion of Reason.

If we try to hold back our present knowledge about the consequences of his voyage and project ourselves into his situation, then perhaps we can begin to see that our present Moon Exploration must be like a quiet tea party compared to his experience. Moon exploration doesn't involve real root expansion of thought, ... we have no reason to doubt that existing forms of perception and thought are adequate to handle it. It is simply a branch extension of Columbus' feat, ... whereas a really new exploration, one which would look to us to-day the way the World looked to Columbus, would have to be in an entirely new direction, as, for instance, into realms beyond Reason.

In my opinion, present day Reason is analagous to that of the Mediaeval Period. If we go too far beyond it, we are presumed to fall off into insanity, much as people in those days feared falling off the edge of the World. However, what is happening is that every year our 'flat Earth' of conventional

conventional/

Reason becomes less and less adequate to handle the experiences which more and more people are experiencing. These experiences are no longer reserved for the initiated mystics, or for physicists with extremely sophisticated apparatus, and this is creating widespread feelings of "topsy-turviness" . As a result, more and more people are getting into irrational areas of thought, .. such as Occultism, Mysticism, drug changes, and various Oriental practices such as Meditation and Yoga, because they feel the inadequacy of Reason to handle what they know are real experiences.

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At the beginning of Modern Physics stands the intellectual feat of one man : Albert Einstein. In two articles published in 1905, Einstein initiated <sup>two</sup> ~~his~~ revolutionary trends of thought. One was his special Theory of Relativity; the other was a new way of looking at Electro-Magnetic Radiation.

Einstein's scientific papers stand at the beginning of the Twentieth Century as imposing intellectual monuments, , .. the Pyramids of Atomic Civilisation. He strongly believed in Nature's inherent harmony, and throughout his life worked towards a unified foundation of Physics. His Theory of Relativity unified and completed the structure of Classical Physics, but at the same time it involved drastic changes in the traditional concepts of Space and Time, and undermined one of the foundations of the Newtonian World View. According to Relativity Theory, Space is not three-dimensional, and Time is not a separate entity. Both are intimately connected, and form a Four-dimensional Continuum,.... Space-Time. In Relativity Theory therefore, we can never talk about Space without talking about Time, and



and /

vice-versa. Furthermore, there is no universal flow of Time, as in the Newtonian Model; different observers will order events differently in Time if they move with different velocities relative to the observed events. In such a case, two events which are seen as occurring simultaneously by one observer may occur in different temporal sequences for other observers. All measurements in Space and Time thus lose their absolute significance.

In Relativity Theory, the Newtonian Concept of an absolute space as the stage of physical phenomena is abandoned, and so is the concept of an absolute time. Both space and time become merely elements of the language a particular observer uses for his description of the phenomena.

The concepts of Space and Time are so basic for the description of natural phenomena that their modification entails a modification of the whole framework we use to describe Nature. The most important consequence of this modification is the realisation that Mass is nothing but a form of Energy. Even an object at rest has energy stored in its mass, and the relation between the two is given by the famous equation  $E = MC^2$ , C being the speed of Light.

Therefore, in the gigantic conceptions of Einstein, he proves mathematically that the velocity of Light, as far as Man's finite mind is concerned, is the only constant of a Universe in flux. On the sole absolute of Light-Velocity depend all human standards of Time and Space, not abstractly Eternal, as hitherto considered. Time and Space are relative and finite factors. They derive their conditional measurement validities only in reference to the yardstick of Light Velocity.

In joining Space as a dimensional relativity, Time is now stripped of its linear nature; with a few equational strokes of his pen, Einstein banished

banished /

from the Universe every fixed reality except that of Light.

In a later development, his Unified Field Theory, he embodies in one mathematical formula the laws of Gravitation and of electro-magnetism, thus reducing the Cosmic Structure to variations of a single Law.

On the epochal theory of Relativity have arisen the mathematical possibilities of exploring the Ultimate Atom, and with the devising of the Electron Microscope came definite proof of the light-essence of Atoms, and of the inescapable duality of Nature. Today, the greatest of physicists realise that physical science is concerned with a world of shadows. This, in my opinion, is one of the most significant advances.

Sir Arthur Stanley Eddington writes : " In the world of Physics we watch a shadowgraph performance of the drama of familiar life. It is all symbolic,-- and as a symbol the Physicist leaves it. Then comes the alchemist, .. Mind .. who transmutes the symbols. To put the conclusion crudely, the stuff of the World is Mind Stuff."

We can now see the direction in which great scientists are moving. They are boldly asserting that not only is the Atom energy rather than Matter, but that Atomic Energy is essentially 'Mind Stuff'. With this new direction in Physics we can see the possibilities of parallels with Mysticism, ..possibly even a synthesis. Mysticism has not only asserted throughout history that Matter is an illusion, but has been offering techniques for proving this to us.

If scientists are now asserting that Energy is essentially 'Mind Stuff', then the answers possibly lie in the Mind, .. that vast and relatively unexplored subjectt that most people prefer not to talk about.



Scientists tell us that throughout our lifetime we may use as little as five to ten per cent of the brain's capacity, and yet the brain is but a minute portion of something else, ...our consciousness.

Sidney Cohen, Director of the Institute of Mental Health in Maryland describes the brain as " --- an under-powered, self-scrutinising symbol factory, whose main job is body management. Its sideline consists in reflecting on what it is, where it is going, and what it all means. Its unique capacity for wonder and self-awareness are quite unnecessary for purposes of physical survival".

The glimpses we are beginning to get of the scope of the brain do indeed raise some unprecedented evolutionary questions. No biologist would say that the brain's extra-curricular activities were unnecessary for survival: the brain is part of us, and we are as much a part of the ecology as every other species.

What we have done to our environment is as natural as thunder and lightning. Our brains have made us a major evolutionary force, and it is going to take a great deal of imagination and creativity on our part to think us out of our present dilemmas. Man's potential is awe-inspiring; we seem to have acquired abilities so far beyond even our present dramatic needs that we look top-heavy. Nature never does things without good reasons, and yet she has gone to some trouble over the past ten million years --- a very short time by Nature's standards--- to equip us with an enormous cerebral cortex of seemingly unlimited capacity. We have acquired this incredible organ at the expense of several others, and yet we use only a minute part of it. This point has only recently been discovered in Science, ... however --again-- the Mystics have pointed out the awe-inspiring potential of every human being.

At the moment, we are like a small family of squatters who have taken over a vast palace, but find no need to move beyond the comfortable, serviced

serviced/  
apartment in one corner of the basement, let alone explore the outer wings,  
the gardens, and the unlimited countryside beyond. Brief glimpses into  
other rooms have led a few adventurous individuals to make more determined  
efforts to explore.

Our consciousness is continually focussed on one reality; therefore we continually perceive things in one way. However, our perception of that object is what makes it what it is. The true nature of the object exists outside of the characteristics we give it. This, of course, has been proved to be so through Einstein's Theory.

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## PARALLELS.

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It was one of the props, -- one of the crutches , -- that you had to let go, -- that one above all, if you wanted to be free !

HERMAN HESSE.

## PARALLELS.

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I.

Modern Physics has repeatedly shown that the idea of basic building blocks of matter is no longer tenable. In the past it was extremely successful in explaining the World in terms of a few atoms; the structure of the atoms in terms of a few nucleii surrounded by electrons; and finally the structure of the nucleii in terms of two 'building blocks', .. the proton and neutron. Thus, atoms, nucleii and protons were in turn considered to be 'elementary particles'.

None of them, however, fulfilled that expectation. Each time, these particles turned out to be composite structures themselves. And physicists hoped that the next generation of constituents would finally reveal themselves as the ultimate components of matter. On the other hand, the theories of atomic and sub-atomic Physics made the existence of elementary particles increasingly unlikely:- they revealed a basic inter-connection of Matter, showing that energy of Motion can be transformed into Mass, and suggested that particles are processes rather than objects.

All these developments strongly indicated that the simple mechanistic Picture of Basic Building Blocks had to be abandoned, and yet many physicists are still reluctant to do so. The age-old tradition of explaining complex structures by breaking them down into simpler constituents is so deeply engrained in Western thought that the search for these basic components is still going on.

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## THE BOOTSTRAP HYPOTHESIS.

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There is a radically different school of thought in Particle Physics which starts from the idea that Nature cannot be reduced to fundamental entities,

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such as elementary particles or fundamental fields. It has to be understood entirely through its self-consistency, with its components being consistent both with one another, and within themselves. This idea has arisen in the context of the so-called Matrix Theory, and is known as the "Bootstrap Hypothesis." Its originator and main advocate is Gregory Chew, who, on the one hand has developed the idea into a general 'Bootstrap' philosophy of Nature, and on the other has used it in collaboration with other physicists to construct specific models of particles, formulated in S---Matrix Language.

The Bootstrap Philosophy constitutes the final rejection of the Mechanistic world view in Modern Physics. Newton's Universe was constructed from a set of basic entities with certain fundamental properties which had been created by God and thus were not amenable to further analysing. In one way or another, this notion was implicit in all theories of Natural Science until the Bootstrap Hypothesis stated explicitly that the World cannot be understood as an assemblage of entities which cannot be further analysed. In the new world view, the Universe is seen as a dynamic web of inter-related events. None of the properties of any part of this web is fundamental; they all follow from the properties of the other parts, and the overall consistency of their mutual inter-relations determines the structure of the entire web.

Thus, the Bootstrap Philosophy represents the culmination of a view of Nature that arose in Quantum Theory, with the realisation of an essential and universal inter-relationship. It acquired its dynamic content in Relativity Theory, and was formulated in terms of Reaction Probabilities, in S - Matrix Theory.

At the same time, this view of Nature came ever closer to the Mystic World View, and is now in harmony with Mystic Thought, both in its general philosophy, and in its specific picture of Matter.

The Bootstrap Hypothesis not only denies the existence of fundamental constituents of Matter, but accepts no fundamental entities whatsoever, --- no fundamental Laws, Equations, or Principles. --- and thus abandons another idea which has been an essential part of Natural Science for hundreds of years.

The notion of fundamental laws of Nature was derived from a belief in a divine Lawgiver, which was deeply rooted in the Judaeo-Christian tradition. This notion of an eternal divine Law of Nature greatly influenced Western Philosophy and Science. Descartes wrote about the "...laws which God has put into Nature ", and Newton believed that the highest aim of his scientific work was to give evidence of the "...laws impressed upon Nature by God". To discover the ultimate Fundamental Laws remained the aim of natural scientists for three centuries following Newton.

In Modern Physics, a very different attitude has now developed. Physicists have come to see that all their theories of Natural Phenomena , including the 'Laws' they describe, are creations of the human mind; properties of our conceptual map of Reality, rather than of Reality itself. This conceptual scheme is necessarily limited and approximate, as are all scientific theories and 'Laws of Nature' it contains. All natural phenomena are ultimately interconnected, and in order to explain any one of them, we need to understand all the others, .. which is obviously impossible from an objective point of view, since the intellect is limited in its capacity for comprehension.

What makes Science so successful is the discovery that approximations are possible; if one is satisfied with an approximate understanding of Nature, one can describe selected groups of phenomena in this way. The Bootstrap Theory maintains that all our 'Laws of Nature' and Theories are mutable, ..destined to be replaced by more accurate 'laws' when the theories are improved.



In the broad sense, from a scientific point of view, the Bootstrap Theory although fascinating and useful is unscientific, because it tries to encompass all things. Science as we know it requires a language based on some unquestioned framework. Semantically, therefore, an attempt to explain all concepts can hardly be called scientific.

It should be now evident that the complete Bootstrap view of Nature in which all phenomena in the Universe are uniquely determined by mutual self-consistency comes very close to the Mystical World view. An Indivisible Universe, in which all things and events are inter-related, would hardly make sense unless it were self-consistent. In a way, the requirement of self-consistency, which forms the basis of the Bootstrap Theory, or Hypothesis, and the unity and inter-relation of all phenomena which is very strongly emphasised in Mysticism, are just different aspects of the same idea.

This close connection is most clearly expressed in Taoism. For the Taoist Sages, all phenomena in the world are part of the Cosmic Way, .. Tao, ... and the laws followed by the Tao were not laid down by any Divine Lawgiver, but were inherent in its nature. Thus we read in the Tao Te Ching .....

"Man follows the laws of Earth. "

"Earth follows the laws of Heaven."

" Heaven follows the laws of Tao. "

"Tao follows the laws of its intrinsic nature."

In the mystic view, then, as in a view expressed by Modern Physics, everything in the Universe is connected to everything else, and no part of it is fundamental. The properties of any part are determined, not by some fundamental law, but by the properties of all the other parts. Both Physicists and Mystics realise the resulting impossibility of fully explaining any phenomenon, but then they take different attitudes : Physicists are satisfied with an

approximate understanding of Nature; the Mystics on the other hand are not interested in 'approximate' or 'relative' knowledge. They are concerned with 'absolute' knowledge involving an understanding of the totality of Life. Being well aware of the essential interrelationship of the Universe, they realise that to explain something means, ultimately, to show how it is connected to everything else. As this is impossible, the Mystics insist that no single phenomenon can be explained.

Thus, all things in their fundamental nature are not nameable or explicable --- they cannot be adequately expressed in any form of language. A true understanding can only be directly experienced. The principal schools of Mysticism thus agree with the Bootstrap Philosophy that the Universe is an interconnected whole, in which no part is any more fundamental than the other, so that the properties of any one part are determined by those of all the others. In that sense, one might say that every part contains all the others and, indeed, a vision of mutual embodiment seems to be characteristic of the Mystical Experience of Nature.

Nothing to the supra-mental sense is really finite. It is founded on a feeling of all in each, and each in all. This notion of 'all in each and each in all' has found its most extensive elaboration in the school of Mahayana Buddhism.

The Mahayana makes it clear that this inter-penetration is an essentially dynamic relation which takes place not only spatially but also temporally. As mentioned previously, Space and Time are also seen as interpenetrating. The experience of Interpenetration in the state of Enlightenment can be seen as a mystical vision of a complete 'Bootstrap' situation, where all phenomena in the Universe are seen as harmoniously inter-related. In such a state of Consciousness the realm of the Intellect is transcended, and causal explanations become unnecessary, being replaced by the direct experience of the Mutual Interdependence



interdependence /

of all things and events. This mystic concept of Interpenetration thus goes far beyond any scientific 'Bootstrap' theory. Nevertheless, there are models of subatomic particles in modern Physics based on the Bootstrap Hypothesis which show the most striking parallels to the views of Buddhism. In the Hadron Bootstrap, all particles are dynamically composed of one another in a self-consistent way, and in that sense can be said to 'contain' one another.

This Cosmic Network of interpenetrating things and events is illustrated in the Avatamsaka Sutra by the metaphor of Indra's Net, a vast network of precious gems hanging over the palace of the god Indra. In the words of Sir Charles Eliot:

"In the Heaven of Indra, there is said to be a network of pearls so arranged that if you look at one, you see all the others reflected in it. "

In the same way, each object in the world is not merely itself, but involves every other object, and in fact is everything else: "In every particle of dust there are present Buddhas without number ". The similarity of this image with that of the Hadron Bootstrap is indeed striking; The metaphor of Indra's Net may justly be called the first Bootstrap Model, created by the Eastern Sages some 2,500 years before the beginning of Particle Physics.

Mystics insist that the concept of Interpenetration is not comprehensible intellectually, but is to be experienced by an enlightened mind. The idea of every particle containing all the others is inconceivable in ordinary Space and Time. It describes a Reality, which, like the one of the Buddha, has its own rules. In the case of Hadron Bootstrap, they are the rules of Quantum Theory, and Relativity Theory, the key concept being that the forces holding particles together are themselves particles exchanged in the cross channels.

This concept can be given a precise Mathematical meaning, but is almost impossible to visualise.. It is a specific Relativistic feature of Bootstrap,

and since we have at present no direct experience of the Four-Dimensional world of Space-Time, it is extremely difficult to imagine how a single particle can contain all other particles and at the same time be part of each of them.

"To see a world in a grain of sand  
And a Heaven in a flower,  
Hold Infinity in the palm of your hand,  
And Eternity in an hour "

The idea of each particle containing all the others is implicit in William Blake's lines, and here again, a mystical vision has led to an image of a Bootstrap type. If the poet sees the World in a grain of sand, modern Physicists see the World in a Hadron. To enlarge the Hadron Bootstrap, therefore, a more general framework will have to be found, and in this new framework some of the concepts which are at present accepted without explanation will have to be Bootstrapped. That is, they will have to be derived from the over-all selfconsistency. They will include our conception of macroscopic Space-Time, and even that of Human Consciousness.

Carried to its logical end, the Bootstrap Conjecture implies that the existence of consciousness, along with all other aspects of Nature, is necessary for self-consistency of the whole.

This view is in perfect harmony with the views of Mystical and Esoteric traditions, which have always regarded Consciousness as an integral part of the Universe. In this view, human beings, like all other life forms, are part of an inseparable organic Whole. Their intelligence, therefore, implies that the Whole also is intelligent. Man, then, is living proof of Cosmic Intelligence. In us, the Universe repeats over and over again its ability to produce forms through which it becomes consciously aware of itself. In Modern Physics, the question of Consciousness has arisen in connection with observations of



observations of /

cosmic phenomena. Quantum Theory has made it clear that these phenomena can only be understood as links in a chain of processes, the end of which lies in the consciousness of the Human Observer, i.e. in the Individual Observing.

Wigner and other physicists have argued that the explicit inclusion of Human Consciousness will be an essential aspect of future theories of Matter.

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FOOTNOTES Chapter III

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- I. Suzuki. Mystic and authority on Buddhism.
- II. Sutra. Sanskrit Scripture.
- III. Joseph Joseph Needham Historian. Specialist in Chinese history and Science.
- IV Yin. Opposite of Yang, ..polar opposites on which the whole of Chinese philosophy, religion, and Culture is based:-

Yin .....Yang.

Shade.....Light.

Female ..... Male.

Receptive .....Creative.

Inward centrifugal                  Outward centrifugal  
tendency..... tendency.



## DYNAMIC INTERPLAYS.

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"It will come about as the result of bio-chemical discoveries that will make it possible for large numbers of men and woman to achieve a radical self-transcendence, and a deeper understanding of the nature of things. And this revival of Religion will be at the same time a revolution.

From being an activity mainly concerned with symbols, Religion will be transformed into an activity concerned mainly with experience and intuition....an everyday Mysticism underlying and giving significance to everyday Rationality, everyday tasks and duties, everyday Human Relationships."

ALDOUS HUXLEY.

"We've been assuming all along that failure was certain, that our Universe was running down, and it was strictly you or me, kill or be killed, as long as it lasted. But now, in our century we've discovered that Man can be a success on his planet, and this is the great change that has come over our thinking....."

R. Buckmaster Fuller.  
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AFTER VI.  
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DYNAMIC INTERPLAYS.

I.

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Some Applications of an Organic World View.  
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Science has always had profound effects on society. Newton's Mechanistic Model of the Universe, for example, initiated the Great Industrial evolution, which has affected our culture on every level.

Similarly, the concepts of the Einsteinian Models have been causing great changes, and will continue to do so. In this Chapter, I hope to show some of the changes towards a more Organic and Wholistic life, and the progress towards a more integrated society, reflecting the world view implied by Mystics and modern scientists.

These changes and effects have been felt throughout every stratum of society, and it is proposed to examine some of the effects in Education and Architecture; to sketch briefly some experiments in the field of bio-chemicals; and to touch on an attempt at total integration with the environment attempted by some people in Colorado, U.S.A.

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Since the rise of Industrialism, Education in the West, and particularly in the United States, has been organised for the mass production of basically standardised educational packages. It is no accident that, at the precise moment when the consumer has begun to demand, .. and obtain .. greater diversity, a wave of revolt has begun to sweep the college campus. One basic complaint of the student is that he is not treated as an individual; that he is served up an undifferentiated gruel rather than a personalised product.

Education generally has been indifferent to student needs. Thus the student-consumer is forced to fight to make the Educational Industry responsive to his demands for diversity. While most colleges and universities have greatly broadened the variety of their course offerings, they are still wedded to complex standardising systems based on Degrees, Diplomas, Majors, and the like.

These systems lay down basic tracks along which all students must progress. While Educators are rapidly multiplying the number of alternative paths, the pace of diversification is by no means swift enough for the students.

This situation explains why young people have set up 'Para-Universities', Experimental Colleges, and "Free" Universities, in which each student is free to choose what he wishes from a mind-shattering smorgasbord of courses that range from Guerilla Tactics and Stock-Market Techniques, to Zen Buddhism and Underground Theatre.

Before too long, the entire antiquated structure of Degrees, Majors, and Credits will be a shambles. It is significant that one of the chief results of the Student Strike in France was a massive de-centralisation of the University System. De-centralisation makes possible greater regional diversity.

The growing move towards de-centralisation in all sectors of society is basically a call for personalisation. People are no longer content to do

to do /

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what other people want them to do. They wish to live their lives their own way, under their own terms. This has brought about a new shift in values, from material objects towards personal experience. Whereas hitherto, people would work and save towards some material reward, many now spend their savings on intangible rewards, .. holidays, for example, or travel, where the only gain is personal experience.

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#### ARCHITECTURE.

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The move towards transience is even manifest in Architecture, ---- precisely that part of the physical environment which in the past contributed most heavily to man's sense of permanence.

The average age of dwellings has steadily declined, from being virtually infinite in the days of the cave-dwellers, to approximately one hundred years for houses built in the American Colonial ~~days~~<sup>days</sup>, and down to twenty years or so at the present time.

Buckminster Fuller, the Design Philosopher, once described New York as a continual evolutionary process of evacuation, demolition, removals; temporary vacant lots, New Installations, .. and repeat.....! Most people look upon the building operations of large cities as temporary annoyances, soon to disappear in a static peace. They still think of permanence as 'normal', -- a hang-over from the Newtonian view of the Universe; but those who have lived in and with big cities, like New York, over the past fifty years have literally experienced living with Einstein's Relativity.

That children, in fact, internalise this Einsteinian theory is brought home by a story from Alvin Toffler's "Future Shock", in which he says: "Some time ago, my daughter was sent to a supermarket a few blocks from our Manhattan apartment. The little girl had been there only once or twice before.



Half an hour later, she returned, perplexed. "It must have been torn down" she said. "I couldn't find it anywhere." It hadn't. But being new to the neighbourhood, she had merely looked down the wrong block. ". She is a child of the age of transience, and her immediate assumption that the building had been razed and replaced was a natural one for a twelve year old growing up in the United States at the time. Such an idea would never have occurred to a child faced with the same predicament twenty years ago. The physical environment then was far more durable; our links with it less transient.

However, in to-days<sup>1</sup> age of transience, Man still needs a firm grasp on something, without which our senses would be flooded and we would be hopelessly confused. This permanence must be transferred from the 'outside' environment to our 'inner' environment which Mystics speak of so frequently.

In other words, disassociation or non-attachment to the shifting environment is becoming a 'must' in to-days transient society. 'Separation' or dissociation from the everyday norm of the environment has been widely explored throughout human history.

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### Changes in Consciousness Through Bio-Chemicals.

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Almost every sub-culture has at some time sought out a root, herb, or berry to further the process of dissociation. The Persians had a potion called 'soma', which, according to the Sanskrit chronicle, "made one like a god." Helen of Troy had Nerepenthe. In India and Egypt, they have always had Hashish or Marihuana. In Europe and Asia there was the beautiful crimson spotted mushroom, *Amanita Muscaria*, which is said to have driven Norsemen berserk. Mexico is favoured with the 'Morning Glory', the Peyote Cactus, and several 'Divine Mushrooms' ... all these plants contain chemicals that produce transcendent states, similar to those described by the Mystics, and have been used as adjuncts to religious and magical ceremonies.

But the most shattering and significant of all psychedelic substances does not occur naturally in the wild state, and had to be extracted from ergot fungus, which grows on grain. This is Lysergic Acid Diethylamide, or L.S.D. It has been tested on a wide variety of animals, but seems to have little effect on any of them, except perhaps the Spider, who builds himself a rather more fancy web.

It seems to be specific in its actions on the highest levels of thought, and even a minute amount, --- one three hundredth thousandth of an ounce ---- produces profound effects on Man. Depending on how it is taken, these effects begin within about half an hour, reach a peak after an hour and a half, and end eight to twelve hours later. Most of the action on the brain seems to be confined to the reticular system, and to the limbic system which modulates emotional experience. So it is working directly on those areas responsible for sifting



sifting/

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and comparing sensory information, and on those which determine an individual's feelings about this material. Speech, walking ability, and all physical activities are completely unaffected. Blood pressure and pulse are normal, reflexes are acute, and there are no unpleasant side effects.

It seems that L.S.D. acts only on the area of Higher Consciousness in the human brain, .. on the area which we believe controls our personality. The most noticeable psychological effect is one of the apparent slowing down of time, --- a type of 'eternal present', very much like a prolonged version of the way in which Time is said to 'stand still' in moments of great personal danger. We have in our own physiology the capacity to produce this effect in emergencies, and L.S.D. appears to carry this a stage farther, but it is no longer concerned with personal survival. The separation between Self and nonSelf, the primaeval haunt of the Unconscious, very soon disappears; Ego boundaries dissolve; the thin overlay of Reason gives way to reverie; identity is submerged by oceanic feelings of Unity; and seeing loses the conventional meanings imposed upon the object seen.

It is important in this respect to realise that we normally perceive only what we can CONceive. We fit sensations into our own view of the way things 'ought to be'. The classical experiment of fitting people with glasses which invert everything proves this conclusively. Within a day or two, the brain makes 'corrections' to the visual field, and these people see everything the 'right' way up again. But when the glasses are removed, the whole world is once again inverted! Thus, the world is seen, not as it is, but as it 'ought' to be.

Part of our problem is that we receive so many sensations that we are unconsciously forced to pick and choose, and soon end up with a carefully

carefully/

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selected and very narrow view of reality. L.S.D. has the capacity to take the blinkers off, as it were, and allow us to see things afresh, as though for the first time.

In this condition, we can begin to re-appreciate the sounds of colour, the scent of music, and the texture of mood. Does, and bats, and deep-sea squid, without our range of competing sensibilities and interests, do these things all the time. Children commonly see things with enormous clarity. It is possible that what we call hallucinations are a normal part of every child's psychic experience. Their paintings seem to indicate this, but as we grow older our visions are dimmed and eventually suppressed altogether, because they come to have a negative social value.

Each society lays down certain guidelines as to what constitutes sanity, and by a combination of these cultural pressures and our own need for acceptance and conformity, most of us end up inside these prescribed limits. A few break out and are classified as insane, and deprived of their freedom on the grounds that they need to be taken care of, but in fact their confinement is designed far more to protect society than to save these individuals from themselves. The Soviet Union makes no bones about this, and regularly certifies troublesome dissenters on the grounds that they must be insane if they don't agree with the State.

A few individuals manage to shake off the restrictions of sanity and get away with it, because they do so within the ambit of a religion in which such revolutionary activities are permissible, because they have been labelled 'divinely inspired'. Far from being confined, many people who have had this kind of transcendental experience return to society with a fresh view of things, and proceed to change their way of life, .. and ours.



The experiences of saints and mystics are not unique. Almost everyone has, at some time in his life, experienced a moment of rapture, bliss or ecstasy, brought on by a flash of beauty, love, sexual experience, or insight. These momentary visions of perfection, and aesthetic delight are glimpses into that state which Christians know as 'Divine Love'; Zen Buddhists as 'Satori'; Hindus as 'Moksha'; and the Vedanta as 'Samadhi'. Such experiences are so little understood that we shroud them in mystery or mysticism, and regard them as supernatural.

In the sense that they do not fit into the formula of cultural Sanity, these various states are 'Insane', but it helps a little to understand them if we avoid such a loaded label, and refer to them as being in a state of 'Unsanity'. There is nothing supernatural about them, and the importance of chemicals such as L.S.D. is that they show this very clearly and simply by peeling away the artificial layers of 'sanity', and letting us once again be natural.

Our usual waking 'sane' state is one of inhibition, and part of this is necessary to prevent the untrained Mind from being overloaded with incoming sensations, but the barriers erected by the Reticular System also deprive us of so much that is full of magic and inspiration. This is absurd when we have developed a brain which is capable of appreciating these wonders.

Blake, Van Gogh, Verlaine, Coleridge and Baudelaire all lived and worked much of the time in a state of transcendental awareness, and perhaps more than any other instant device, L.S.D. provides an access to Transcendentalism, at least of a sort. Most accounts of L.S.D. 'trips', where they are intelligible to non-experimenters, seem to concentrate on physical manifestations, ... swirling patterns of colours and shapes, distorted sounds, and a suspension of time. Yet, on certain 'trips', the important element of the experience is the presentation of new vistas of possibility in terms of ideas and perceptions of self and the world.

Undoubtedly, some L.S.D. experimenters can be accused of mere sensation seeking, but at the core is a search for spiritual enlightenment. This aim, however, has been forgotten in the wake of sensational publicity. The shortcoming of L.S.D as a means of transcendental access is that it is too rapid, and violent in its manifestation, and it shows what transcendence could perhaps be like without enabling the user to exercise much control over where he is taken, or what happens to him.

Conventional science, does of course have some explanations as to what happens during an L.S.D. experience, but it is arguable that at the most, these accounts describe only why people might behave as they do under the influence of hallucinogens. The explorations of such experiences has not been very profound.

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# DROP CITY.

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There are many groups to-day experimenting with alternative modes of existence. Disillusioned with Western Society's approach to life, they are trying to create new ways to live, where their work, play, and spiritual life are integrated into a more wholistic existence.

A good example of such an experiment is 'Drop City', in Southern Colorado. Drop City began about six years ago, like a 'Happening', but with no distinction between Art, Life, and Reality.....

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Three people bought six acres of goat pasture, and moved onto the land. They decided to let whatever would happen, happen. They had little money, and no fixed plans. Others soon heard of them, and began to pass through. Some stayed; a community sprang up. They began to build geodesic domes to house themselves, .... the writers, painters, musicians, who had no regular income. They were forced to devise new ways of obtaining building materials, food, --all the necessities of Life --- without resorting to the normal channels of society.

They were held together by a common feeling that the whole structure of American society was rigid and oppressive; that the only way to physical and spiritual freedom lay outside the established system. They thought of the whole of Drop City as a large environmental sculpture. All actions involving construction were to be the easiest, most efficient with least cost.

In a place where there are no specialists, carpentry, plumbing, wiring, heating, furnishing, eating, reading, talking, sleeping are all integral parts of daily life. They heard Buckminster Fuller lecture in Boulder, Colorado, and decided to build domes.

## II.

Most people, when they first come to Drop City, do not know what to do with themselves. They lead a day by day existence, functioning within a loose and almost invisible structure, a structure that is always growing and shifting, .. and changing as they themselves change. They have no compulsory work, so a newcomer is often faced with a problem.

His survival is provided for, all of his time is free time, ... what, then, is he going to do with it ? He often vacillates between great flurries of activity, and depressions of nothingness. Having been pigeonholed all his life, he does not know what to do with his freedom. This is Culture Shock.

But sooner or later, most begin to settle into a rhythm, .. each in his own natural rhythm. Since there are no compulsions, each eventually discovers for himself how he wants to live his life. Or .. Life, in spite of his protestations, begins to lead him. He becomes the person he really is by doing the things he wants to do. All activity is creative activity. All creative activity is done for its own sake, without ends. All noncompulsive activity is Art.

They get away from job-orientated society; where work is apart from life. They get away from work as the Western industrial society has known it. Work is Movement; Movement is an expression of mind and body.

Our society is soporific, addictive to things, .. comforts, securities; physical securities are substitutes for inner security. They breed inner security; they support it. The chains of our society are not physical; they are mental. The Door is always open. Anytime we choose to walk out, we CAN walk out.



More and more, they found themselves going back to basics.

Starting again, re-learning everything they knew, not sheltering themselves from the natural environment, but learning to live with it. The alienation of Western Man is partly due to his having lost contact with all natural functions with the Reality of being alive. There are no ends in Life, but only processes. Spiritual reality is physical reality, clearly seen.

We are all here alive together in this world, at this time, so-- what are we going to do? In the words of one person from Drop City: "We want our homes to spring from the soil, like trees."

For the people of Drop City, and many other people involved in alternative cultures, the Dome has become a symbol of the Freedom they strive for. All Living and non-Living Units take their form from a balance of energies. On a physical plane, these Forces come into nearly perfect balance in the Sphere. It is the most efficient way to enclose Volume. A Dome, --part of a sphere -- is the most efficient way to cover a surface.

The Triangle ( geodesic domes are triangulated ) is the strongest structural element known. To live in a Dome is, psychologically, to be in closer harmony with Natural Structure. Macrocosm and microcosm are re-created, both the celestial sphere and mollicular and crystalline forms. Cubical buildings are structurally weak, and also uneconomic, corners constrict the mind. Domes break into new dimensions. They help to open Man's perceptions and expand his approach to creativity. In Drop City, the dichotomy between Utilitarian and Aesthetic, between artist and layman is broken down.

Drop City is a good example of people trying to create a more wholistic approach to Reality, and truly living out Einsteinian physics. Their domes are interesting, not only aesthetically or Mathematically, but also

but also /

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Philosophically and spiritually. Everything that Man does is, in a sense, a statement of his outlook on Life. A stiff mind will be generally be attracted to straight, not curved lines; a materialistic person, attached as he is to solid matter, will be inclined to construct firm, heavy buildings, --- reflections of his own vision of a World that will endure forever.

Insular people, fancying Reality to be no larger than their own definitions of it, like their homes too, to box them in cosily, shutting out from their minds the vast Universe outside.

We have come, in this Twentieth Century, to a time of increasing mental fluidity, and a time of decreasing reliance upon solid Matter as the ultimate and abiding Reality. We have come to an Age finally, when our mental concepts are seen, not as Realities in themselves, but only as our humble efforts to reach out and touch the Hem of a much greater Reality which we can only dimly comprehend. The Dome is expressive of our new approach to the Universe. It is in harmony with the scientific concept that Space itself is curved.

In its roundness, it represents our modern device for continuous mental expansion, -- for reaching out to the Universe instead of boxing ourselves in protectively against its immensity. The Dome seems in some way to be more conducive to the mental and spiritual harmony of the Dome Dweller, and perhaps because of its more natural shape helps to attune him to Nature, instead of alienating him from it.

Boxed houses belonged to an Age when men stood in opposition to the world around them, .. in competition, as it were, with Nature and the Universo. Domed houses belong better to this Age of growing awareness of Man's need to co-operate with Nature if he is to progress further, or even to survive the destructive forces which his competitive



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Spirit has unleashed.

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## CONCLUSION


"The most beautiful thing we can experience is the Mysterious.  
It is the source of all true Art and Science.

To know that which is Impenetrable to us really exists, manifesting  
Itself as the Highest Wisdom and the most Radiant Beauty which our  
dull faculties can comprehend.....

.... This knowledge, .. this feeling ... is at the centre of  
True Righteousness.

In this sense, and this sense only, do I belong to the ranks of devoutly religious men ...."

ALBERT EINSTEIN





## CONCLUSION .

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I.

In trying to understand the Mystery of Life, Man has followed many ~~diff~~ different approaches. Among them, there are the ways of the scientist and the mystic, but there are many more. The ways of poets, children, clowns, magicians --- to name but a few. These ways have resulted in different descriptions of the World, both verbal and non-verbal, which emphasise different aspects.

All are valid and useful in the context in which they arose. All of them, however, are only descriptions or representations of Reality, and are therefore limited. None can give a complete picture of the World. It can only be experienced.

The Mechanistic View of Newtonian Physics is useful for the description of the kind of physical phenomena we encounter in our everyday life, and thus appropriate for dealing with our daily environment, and it has proved extremely successful as a basis for Technology. It is inadequate, however, for the description of Physical Phenomena in the sub-atomic realm. Opposed to the mechanistic conception of the World is the view of Mystics, which may be epitomised by the word "Organic", as it regards all phenomena in the Universe as integral parts of an Inseparable Whole.

This World View emerges in the Mystical Traditions, from meditative states of consciousness. In their descriptions of the World, the Mystics use concepts which are derived from these non-ordinary states, or experiences, and are in general inappropriate for a scientific description of macroscopic phenomena. The Organic World is not advantageous for constructing machines, nor for coping with the technical problems in an ~~xxxxxx~~ overpopulated world.

In everyday life, then, both the Mechanistic and the Organic views of the World are valid and useful, the one for Science and Technology, the other for a balanced and fulfilled spiritual life.

Beyond the dimensions of our everyday environment, however, the Mechanistic concepts lose their validity, and have to be replaced by Organic concepts which are very similar to those used by Mystics. This is the essential experience of Modern Physics, which has shown that the concepts of the Organic World View, although of little use for Science and Technology on the Human scale, have become extremely useful at the Atomic and sub-Atomic level.

The Organic View, therefore, is more fundamental than the Mechanistic.

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Classical Physics which is based on the Organic View can be derived from Quantum Theory, which is in harmony with the former, whereas the reverse is not possible. This seems to give a first indication why we might expect the World Views of Modern Physics and Mysticism to be similar. Both emerge when Man enquires into the essential nature of things, ... into the deeper realms of Matter, in Physics; and into the deeper realms of Consciousness in Mysticism, when he discovers a different Reality behind the superficial mechanistic appearance of everyday life.

In contrast to the Mystic, the Physicist begins his enquiry into the essential nature of things by studying the material world, and penetrating into ever deeper realms of Matter, he has become aware of the essential Unity of all things and events. More than that, he has also learned that he himself and his Consciousness are an integral part of this Unity. Thus, the Mystic and the Physicist arrive at the same conclusion, one starting from the Inner Realm, the other from the Outer World. The harmony between their views confirms the



confirms the /

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Ancient Indian wisdom that Brahman, the Ultimate Reality Without is identical with Atman, the Reality Within.

A further similarity between the ways of the Mystic and the Physicist is the ~~fact~~ that their observations take place in realms which are inaccessible to the ordinary senses. In Modern Physics, these are the realms of the atomic and sub-atomic world; in Mysticism they are non-ordinary states of consciousness in which the 'Sense' world is transcended.

Mystics speak about experiencing Higher Dimensions, in which Impressions of different centres of consciousness are integrated into a harmonious whole. A similar situation exists in Modern Physics, where a Four Dimensional Space-Time Formalism has been developed which unifies concepts and observations belonging to different categories in the ordinary three-dimensional world. In both fields, the multi-dimensional experiences transcend the sensory world, and are therefore impossible to express in ordinary language.

We see that the ways of the modern Physicist and the Mystic, which seem at first totally unrelated, have in fact much in common. It should not be too surprising, therefore, that there are striking parallels in their descriptions of the World. Once these parallels between Science and Mysticism are accepted, a number of questions will arise concerning their implication:

- (I) Is Modern Science with all its sophisticated machinery, merely re-discovering ancient wisdom known to the Sages for thousands of years ?
- (II) Should Physicists, therefore, abandon the scientific method, and begin to meditate ?

I think these questions have to be answered in the negative. I see Science and Mysticism as two complementary manifestations of the Human Mind, .. of its Rational and of its Intuitive faculties.

The modern Physicist experiences the World through an extreme specialisation of the Rational Mind; the Mystic through an extreme specialisation of the intuitive Mind. The two approaches are entirely different, and involve far more than a certain view of the Physical World. However, they are complementary; neither is comprehended in the other, nor can either of them be reduced to the other, but both of them are necessary, supplementing one another for a fuller understanding of the World.

To paraphrase an old Chinese saying : Mystics understand the roots of the Tao, but not its branches; Scientists understand its branches, but not its roots." Science does not need Mysticism, and Mysticism does not need Science, but Man needs both. Mystical experience is necessary to understand the deepest nature of things, and Science is essential for modern life. What we need, therefore, is not a synthesis but a dynamic interplay between Mystical Intuition and Scientific analysis. So far, this has not been achieved in our Society. At present, our attitude is too 'Yang', to use Chinese phraseology, -- too rational, male, and aggressive.

Scientists themselves are a typical example of this. Although their theories are leading <sup>to</sup> a world view which is similar to that of the Mystics, it is striking how little this has affected the attitudes of most scientists. In Mysticism, Knowledge cannot be separated from a certain way of life which becomes its Living Manifestation. To acquire Mystical Knowledge means to undergo transformation. Scientific Knowledge, on the other hand, can often stay abstract and theoretical. Thus, most of to-days Physicists do not seem to realise the philosophical, cultural, and spiritual implications of their theories. Many of them actively support a society which is still based on the Mechanistic Fragmented World View, without seeing that Science points beyond such a view, towards



towards /

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= Oneness of the Universe~~which~~ includes not only our natural Environment, but also our fellow human beings.

I believe that the World View implied by Modern Physics is inconsistent with our present Society, which does not reflect the harmonious inter-relatedness we observe in Nature. To achieve such a state of dynamic balance, a radically different social and economic structure will be needed; a cultural revolution in the true sense of the word. The survival of our whole civilisation may depend on whether we can bring about such a change. It will depend, ultimately, on our ability to adopt some of the 'YIN' or receptive Intuitive attitudes of Mysticism; to experience the Wholeness of Nature, and the art of living with it in harmony.

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END.

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