

RELIGION, MYSTICISM AND MODERN SCIENCE

by K.N.Dastoor

We are often told that Religion cannot be, without 'mysticism'. What does that word convey?

Let us first have an idea about the word 'mystic'. A mystic is normally described as one who tries to attain the knowledge of ultimate reality about the universe through intuitive contemplation or meditation or some discipline or process entirely different from the usual methods of logic, observation through five senses, or what we generally call rational or analytical thinking. Based on this meaning of the word mystic, mysticism is often taken as a peculiar state of mind, or even feeling, of some individuals. As Bertrand Russel puts it in his essay on "Mysticism and Logic". "Mysticism is, in essence little more than a certain intensity and depth of feeling in regard to what is believed about the universe." Thus, it becomes a highly personalised affair and is the understanding of the reality by certain individuals, which is their own 'feeling' of reality.

This meaning induces many to dismiss any reference to mysticism as personal fad of somebody. Can a 'feeling' or personal experience of somebody convey the knowledge of truth in nature?

But there is another meaning to the word 'mystical', namely, "having a spiritual meaning or reality that is neither apparent to the senses nor obvious to the intelligence" (Meriam Webster). That means, 'mysticism' is a science going beyond our five senses and normal intelligence or intellect, and therefore beyond the modern physical sciences like physics, biology, psychology, medicine and others. This meaning is connected with the previous meaning in as much as the source of such mystical i.e. ultra-physical science can be the inner or intuitive or inspirational experience of the mystics.

But, if mysticism, assuming it to be a science, is based upon the personal feeling or intuition of the mystics, how far can we rely on it?

For an answer to this question, let us consider our 'Paigambar' (i.e. Divine Messenger) Zarathushtra and His message. He declares, through our Holy Scriptures, that there exists, beyond our senses and intellect, a Creator, Ahura Mazda, who has created the whole universe, the seen and the unseen. His Creation is apparently separated from Him but is now proceeding towards Him. Man is a part of the

Creation. He has, between him and Ahura Mazda, a veil, a screen, of 'Druj', loosely and for want of another word, called evil. Every human being has within itself a ray of Ahura's divine light and at the same time a covering of 'druj' interwoven in his physical body. He has to dissolve the covering completely, and be one with the Divine Light of Ahura Mazda. To achieve this, man has to carry out and follow certain teachings and prescriptions, including a strict moral code.

This, of course, is a very terse statement of the principles and precepts of Zarathushtrian Religion. But they are pervaded throughout the Holy Scriptures viz. Yasna, (which includes Gatha's), Vendidad, Vispered, and Khordeh Avesta, and elaborated in Pazend prayers and Pahalvi writings. One single passage laying down this statement, is the first passage of 'Kem-nā-Mazda' prayer, (Yasna Ha : 46-7- Gatha Ooshtuvad) which is the foundation of our Kushti prayer.

Now ponder over the statement. Every ingredient of it is beyond our senses and intellect and is not capable of rational or logical or intellectual verification. Have we seen the Creator? if He is within us, has any surgeon found Him when he opened human bodies? And can you prove that it is He who has created the observable and unobservable universe? Where is the veil

of Druj? Why is it said that the Religious prescriptions including the strict moral code takes us nearer to Ahura Mazda? What is "nearer"? We do not feel we are travelling towards Him or away from Him! All this sounds unverifiable and mystical! The question then arises: if mysticism is to be discarded, can you believe in the very first principle of the existence of Ahura Mazda? If you don't, you may as well cease to talk about Religion. The concept of the existence of God is the first foundation of all Religions. And it is not just a concept; you are required to believe that it is the Truth taught to us by His Messengers.

How did the Messengers learn about this Truth? Each of them was a mystic who had personally experienced God. Should we discard their Message because they are mystics?

And so far as Zarathushtra is concerned, our Scriptures declare in no uncertain terms that He was not an ordinary human being. He was a channel of Ahura Mazda's Divine Light itself. He communicated with Ahura Mazda; He conversed with Him; He was in communion with Him. Ahura Mazda imbedded the Truth in Zarathushtra. He declared Ahura Mazda's Message to the mankind.

All this, again, is mysticism! The Holy Scriptures

appear to be a treatise on mystical science! Do they really describe the reality in nature? If we think they do not, we may as well be atheists! The very foundation of Religion is mysticism. One cannot exist without the other. To accept mysticism while believing in Ahura Mazda and to make wry faces when other similar mystical doctrines are put forward, is the reflection of an escapist mentality.

I presume that you, my dear reader, do believe in God; because if you do not believe in Him; you would not be reading this Magazine which is manifestly on Religion. Relying, then, on your thiestic inclination, may I have the liberty to ask you what is the basis of your belief in God? It cannot be any observation which you have made of Him or any intellectual thinking you may have applied to Him. An intellectually convincing proof of His existence does not exist. Yet, why do you believe in Him, and in one or the other or all the principles and percepts tersely summarised above? The answer is: it is an act of FAITH.

Faith is a mental temperament whereby a person believes certain principles or doctrines as being the truth and reality in nature, although no intellectually convincing proof thereof is available. It is an act of belief founded on the teachings of the God's Messengers, the

Prophets, Saints, Sages, Avatars. It is an unquestioned reliance on their Word and Promise, with an undercurrent that although today I cannot intellectually prove the principle or doctrine, I accept it as true, and I am certain that one day I will experience it as a revelation. Every Religious practice, discipline, procedure or 'Tarikat' as we call it, has this undercurrent of unflinching faith. No religion can exist without faith. One of the meanings of the word "Faith" is "Religion". We do speak of the 'Hindu Faith' or the 'Christian Faith', etc.

Now, if we compare the meanings of the words 'mysticism' and 'faith', we at once see that the two are almost synonymous. Both have, as their subject matter, a reality or truth which is beyond the sense, experience and common intelligence or intellect. Therefore, if there can be no religion without faith, there can be none without mysticism. Faith is the belief in the mystical and the spiritual. It presumes that there can be a reality which is beyond the common human comprehension and that there do exist and occur in nature, such entities, things, events, phenomena which do not enter into the circle of our sense experience or common intellect.

It is now time to ask the question : Is the above presumption correct? Are there

any indications in support of the presumption? Is there any scientific basis for it? Has the modern science, which is supposed to be an inquiry in the realms of nature, any material for or against the presumption?

Ours is the age of science. The discoveries and inventions of science are injected in our thinking right from our school days. We are given a formidable impression that science has understood the mechanism and secrets of the world we live in. It has understood 'matter', and thereupon produced electricity, television, atom bomb and nuclear power plants. It has understood 'life' and thereupon brought forth green revolution, theory of evolution and biological warfare. It has understood the human illness and is thereupon fighting with cancer and 'aids'. It has understood the human brain and is thereupon busy making a thinking computer. Surely, as our layman's impression goes, the science which has produced such wizardry and miracles must have understood most of, if not all, the mysteries of nature. Whatever it has found about matter, life and universe must be the truth and reality in nature. Is that impression correct?

Speaking in 1990, alas ! the answer is a flat unqualified 'NO'.

The quest in the secrets of nature, which we call science started its journey in the 15th century, say, with Copernicus (1473 to 1543 A.D.), who calculated the orbits of earth and planets and tried to formulate a 'rational' geometry of things. He was followed, in time as well as in ideas, by Kepler (1571 to 1630 A.D.), who

took the geometry further and theorised that mathematics could give more definite knowledge of the universe than the senses. Then arrived Galileo (1564 to 1642 A.D.) who declared that the universe acted through immutable laws, but we must understand its language and symbols, which were manifestly mathematical. Descartes (1596 to 1650) made everything mathematical and mechanical. Then entered Newton (1642 to 1727 A.D.) with his laws of motion and the universe became a machine and science was on its way to be Godless.

The strange part of the story is that although the pioneers of science named above led the science to 'Godlessness', they themselves were believers in God ! Kepler declared that the sun was central in the universe, and was "worthy to become the home of God Himself". Galileo said that the mathematical order in the

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universe was owing to God. Descartes, though the founder of the mechanical concept, believed that God was the sole living principle of everything including rational human minds. And Newton wrote, "He (God) is eternal and infinite, omnipotent and omniscient; that is, his duration reaches from eternity to eternity; his presence from infinity to infinity; he governs all things and knows all things that are or can be done."

But these views about God were soon forgotten. The mathematical mechanics of these pioneers was accepted, acted upon and taken further, but their beliefs in God were set aside and dismissed summarily. The first decades of the 19th century became Godless. When Laplace, a French Scientist was asked by Napoleon about the place of God in the scientific world system, the reply was "Je n'ai pas besoin de cette hypothese" - We do not need this hypothesis!

God became a needless hypothesis. 19th century advanced; God disappeared completely. Everything must be explained mechanically, even life and mind. Everything should follow Descartes's reasoning of a machine and Newton's laws of motion. And so it does. By the end of the "infidel half century" (as Bernard Shaw described it) the universe of science was a mechanical model. The map, or more correctly the machine diagram, was drawn. The rail

road was built; every event, every thing in the world should be explained in terms of the rail road, the diagram, the model.

BUT, the 20th century sent a number of strong earthquake tremors below this machine-edifice of science. Today in the 9th decade of the 20th century, it is shattered and fallen to pieces. Yet the old notions are hard to be abandoned and the mechanical model still continues to have a hazy form in the realm of the orthodox science. At the same time a number of eminent scientists have pointed out, that the model is dead; that science was not in contact with reality; that its view of nature was quite wrong; and that it is time to change it completely.

I, first lay out before you the present (dying) form of the mechanical model, and then take you briefly through the 20th Century tremors and the new sciences now coming up. However reversing the usual order, I lay down the moral of the story first: Science is knocking the door of mysticism; but the door does not open; a voice comes from behind, "This is not the way; come by the right path; that path goes through your heart not your intellect."

Let us first see the present form of the mechanical model of science.

The Big Bang to Science Academy via a pond of amoeba

15 billion years back, the universe began with a bang, which was quite big, so it is known as "the Big Bang". Before that there was nothing - no space, no time, no matter, no duration, no eternity, no number; just a void, an unthinkable void. As the Big Bang occurred from nothingness, the temperature was very very high: 10^{32} Kelvins (i.e. 1 followed by 32 dots) (1 Kelvin = -273°C). Within less than a second, 98% of all the matter in the universe, the force of gravity and other physical forces were created. The matter, then was in the form of 'elementary particles' - very much smaller than the atom. 300,000 years after the Big Bang the elementary particles began to combine to form atoms i.e. matter as we know today. Galaxies and stars were formed thereafter; then the solar systems sprang up; our sun with its planets including our tiny earth, came into being.

As the earth cooled further, the seas and the dry lands were formed. Matter on earth took up various combinations; atoms combined to form molecules. At one stage, purely by chance, the molecules combined in such a way that a living cell i.e. very tiny life-form sprang up. The plants began to form and evolve; water animals came up, then dry land animals, then birds, mammals, monkeys and lastly man - hurrah! the

world is ready for the man. The evolution from matter to life was by chance and accident. Evolution from a pond of amoeba (the first one-cell living creature) to an academy of human scientists was through "struggle for existence and the survival of the fittest", thus spoke Darwin. Even the scientists' much boosted intelligence is nothing but molecular movements. Love is a matter of differential equations. The sins or good deeds of humans are "only a series of chemical and mechanical reactions over which they have no control", as Bernard Shaw puts it. And yogi's consciousness is a neurological commotion worth a mad house.

So here was the Godless mechanical model of creation right from day one - the Big Bang to the atomic-bomb bang on Hiroshima in 1945 and the presently threatened nuclear holocaust. No plan, no God, no design - just chances and accidents and later on struggle for existence i.e. fights, battles and wars. Orthodox scientists are still trying to cling to this model, notwithstanding the fact that against each of its ingredients there are a number of explosive objections.

"Before and" and After the Big Bang.

What was there before the Big Bang? The hazy answer is: don't ask the question; how can there be a "before" when there was no time and

space before the Big Bang ? Well ! does this sound mystical ? A few brilliant theorists like Stephen Hawking try to give another answer; Before the Big Bang everything was happening all at once, and in the same place; space had ten dimensions, seven of which were rolled up or curled up within Planck's length, i.e. trillions of times less than a trillionth of an inch !! Is this not more mystical than the mystery itself ? But leave it at that; close your eyes and mind to the "Before"; let us concentrate on "after". But before that those who twitch their noses to the mystical in Religion may please ponder on this mystical in science.

'After' seems to be more brain twisting than 'before'. About 10^{-35} seconds after the Big Bang i.e. 1 upon 1 followed by 35 dots-th of a second, two forces came into being: gravity and electromagnetic force. You need not bother about what they are; but the mind boggling proposition is that these two forces were so delicately balanced that had the force of gravitation be less by $1/10^{40}$ th part (1 upon 1 followed by 40 dots) than what it was, no stars and no sun would have been formed and therefore no earth, no matter and no life could have sprung into existence ! Who made this infinitely fine tuning between the two forces ? Was it just a chance ?

Within about $1/10000$ th of a second after the Bang, matter in the form of 'elementary particles' like protons, electrons, neutrons was formed. Again, you need not bother about what these 'trons' and 'tons' are; but the brain whirling proposition is that these particles joined and combined to form the atoms of matter which we come across (or which we ourselves are) on this earth. This formation, it is said, is due to another force of nature called strong nuclear force; had this force been very very slightly weaker or very very slightly stronger than what it was (or it is), no atom could have been formed! No earthly matter could have been created and you, my dear reader, would have been NOT ! Who measured and adjusted this force to such a fine tuning? Again a chance ?

The mechanical model further says that life on earth began by chance when the atoms combined to form certain kinds of molecules, which in turn, combined to form a living cell, again by chance. A living cell has a chain of certain types of molecules called amino acids. There are 20 such amino acids functioning in life-cells. Their function depends on certain other types of molecular compounds, called enzymes which number between 1000 to 2000. For the formation of a life cell these enzymes should come

together in the right way to help forming the right amino acids of any cell. According to the calculation of an eminent British scientist Fred Hoyle, the probability for happening of this event so as to form one single living cell during several billion years of the earth's history is 10400000 to 1. This means 1 followed by 40,000 dots events and combinations should occur before one life cell is formed ! In other words it just cant happen by chance. A careful design is necessary. Somebody has to plan the whole affair and ensure its execution by most careful organisation and administration.

Coincidences of Design ?

Several renowned scientists have made a list of a series of "coincidences", which are required to occur if the mechanical model is the only explanation of the stars, matter, trees, animals, man and his brain. The number of such coincidences is so staggering that there is no escape from the conclusion that the universe is formed, governed and continues to exist by some kind of "interlocking hierarchy of interelligences". as Hoyle put it.

There are scientists who have concluded after careful studies and thought that even small coincidences in our day to day lives are not just random events; they have some design, some unknown force some underlying harmony behind. The Aust-

ralian biologist Paul Krammer collected numerous examples of 'coincidences' to arrive at this conclusion. Carl Jung coined the word "synchronicity". There is a recent book "Synchronicity", with a subtitle 'The Bridge Between Matter and Mind' by David Pent (Bantar - 1987).

No please ! Chances, accidents, coincidences, probabilities and Codlessness wont do. God is coming back in science. There is a chapter titled "Mathematical Evidence to the Existence of God" in a book "Beyond the Quantum" by Michael Talbot (Bantam - 1988), who had earlier written "Mysticism and the New Physics". Paul Davies, Professor of Theoretical Physics at the University of Newcastle wrote in 1981 "God and the New

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Physics" and in 1989 "The Cosmic Blueprint" with a subtitle "New Discoveries in Nature's Creative Ability to Order the Universe" (Touchstone - 1989).

Order, blueprint, plan, design, mysticism, God in modern science !! But, alas ! it is too late. It is a long and arduous journey from "the needless hypothesis" of Laplace, - but man has, during the journey, created nuclear bombs and plants, green house effects, cancer and 'aids'.

Is there, in modern science, a substitute for the mechanical model ? There is not one but several; but each of these substitutes has one common undercurrent: the methods of modern science are inadequate to understand the mysteries of nature. Science knows more and more, but about less and less. Every piece of its knowledge that

it gets or arrives at, adds to its ignorance. It multiplies ignorance and the guise of collecting knowledge. "We find facts", it pompously declares, and its facts promptly turn out to be shadows. "Physical science is concerned with a world of shadows", declared the outstanding astronomer Sir Arthur Eddington in his "Nature of the Physical World" in 1928 and thereafter eminent scientists, scientific thinkers and philosophers, and historians of science have emphasised almost in a chorus that science is not in contact with reality ! That means we are not learning the truth about nature through this activity called science. (We only collect shadow facts and lethal weapons). It is 'Avidya' as defined in the Hindu scriptures : Knowledge that is ignorance.