

(Talk delivered at the Anna University on 20th August 2009)

INTRODUCTION

I am happy that the Anna University has taken the initiative to set up a Centre for Applied Research in Indic Knowledge with the objective of trying to identify technology embedded in our tradition and scriptures. In our times, when it comes to education, there has always been a distinction between arts and science or liberal arts and science and technology. Lord Snow in 1950s in Britain highlighted how this has led to two cultures; one arising from study of science and the other from the study of liberal arts. I am a student of chemistry and have always felt that the mindset and approach of a person who studied science is different from that of a person who studied literature or economics or other liberal arts. As I see it, a person with a scientific bent of mind is likely to be more analytical and focused on the concrete. A person with the liberal arts background is likely to look at the holistic picture and explore dimensions, which are not immediately seen as concrete. He is likely to be more articulate than his science counterpart. A science student may give more importance to content of what is expressed. The liberal arts student may emphasis the form and style of expression. A science student may lack in what is called emotional intelligence and may not show empathy. A liberal arts student is likely to be more emotionally sensitive and have more EQ. Abstract thinking and articulation of abstract thoughts becomes easier for those whose mind has been moulded by liberal arts than by science. It is therefore, exciting that the Anna University has thought fit to set up this Centre for Applied Research in Indic technology. If the Centre succeeds, it will act as a bridge between the two cultures.

I am particularly happy that I have been given the privilege of launching the first of the series of lectures initiated by the Centre. It is an advantage to me as I can operate on a clean slate. I propose to explore with you my understanding of the expressions 'culture' and 'tradition' and then with my limited knowledge of scriptures, try to relate how modern technology can be related to our Indian scriptural knowledge or Indic technology. Religions of Hinduism, Jainism, Buddhism etc., which originated in our country are called Indic religions. Their scriptures or religious books will be Indic scriptures.

We can begin our understanding of culture by taking note of one fact, which is not very much appreciated. We are living in the age of consumerism and materialism but if we pause for a moment and think, we will realise that even though we are living in what is considered to be the age of materialism, when it comes to appreciating and paying of a highest price for any goods or services, we rate them on the basis on non material parameters. Let us take a common item like shirts. For an ordinary shirt for which we may pay Rs.300 or so but it can be sold at five to ten times that price by way of advertisements and creation of a brand image. In fact, these days I find that people are defining themselves through the brands of their accessories in daily life. Management of the brand itself has become a matter of specialisation. I was interested recently to find that modern business and ancient religion go together. One of the leading retail chains in India has engaged an officer as "Chief Belief Officer".

While the politics versus religion has been debated for quite some time, a silent interesting development has been taking place, which needs to be highlighted. This is the coming together of religion and business. In these days of conspicuous consumerism triggered by the policies of economic liberalisation from 1991, clever entrepreneurs are discovering that religion can be an effective management tool.

One of the leading captains of industry in the organised retail sector has appointed a medical doctor with an interesting background as the Chief Belief Officer. This gentleman who studied medicine became a business consultant by profession and a mythologist by passion. His role as the Chief Belief Officer is to help construct a new effective culture for the entire organisation. This is based on the principle that from belief comes behaviour. And behaviour shapes culture.

There is another reason for the focus on organisation culture. The series of scams witnessed in the last two decades of liberalization ending up with the Satyam one have highlighted the need for building a culture of honesty in business and the practice of good corporate governance. Corporate governance is after all the framework of values which governs decision making in an organisation. Values are at the root of belief and from belief comes organisational behaviour. Religions are after all, the most time tested models for regulating behaviour. Is it possible to adopt the techniques underlying the origin and growth of religion to promote the right values in management? Lateral thinking is always a very effective tool for creativity. Any management trying to use the technique of religion can readily find tried and tested instruments to achieve their goal. In the early stages of any religion getting converts from the existing faiths becomes a supreme necessity. This is similar to effective whiz kid salesmen making their pitch to develop the market. The role and success of the missionaries depends upon their internalising the new faith to propagate it. The remarkable track record of the Christian missionaries or the achievements of the spiritual leader **Bhaktivedanta** Krishna Prabhupada who founded the Hare Krishna cult are well known. A deeper analysis of the techniques used by them to market their ideas will provide a rich mine of creative concepts to those in the retail sector. Once you have established a beach head in religion or the market then comes stage of hostile attack. Internal dissensions and betrayal have also to be faced and overcome. An intelligent study of the history of religions by providing many parallels may throw a whole bunch of new ideas on how to tackle them.

The issue of religion and business management brings us to examining the expressions of culture and tradition. We should start by recognising that in every moment of our life, our actions are guided by values. Even from deciding on a simple solution to have tea or coffee, our choice is based on the values we cherish. As human society grew, certain values were recognised as positive and good for the society. These are good social values and certain values were considered as bad as anti social. The values were classified into desirable or non-desirable, positive or negative, good or bad based on experience. Culture is nothing but the matrix of values. Culture is the mother of all values because it represents the combined distilled wisdom of the community or people based on drawing from their history and traditions and identifying the values, which they cherish.

Values determine every aspects of our life. No wonder therefore, culture pervades every aspects of life. Starting with the basic food, clothing and shelter, we find culture is reflected not only in the cuisine, the dress and in the buildings and the homes, which we occupy.

But that is not the starting point. Ultimately, society grew through communication. In fact, development of the human language was itself a major breakthrough in evolution, which distinguished human society from the animals. This language skill with the help of one major breakthrough technology evolved very rapidly. The invention of writing ensured that ideas could be preserved passing the barriers of time and space. We therefore, can appreciate that ultimately our life is guided by values and the values imbibed from other cultures, which in turn distil experience of a society or ethnic group. Tradition is dictated by history.

In this context, as Indians, is there anything we can say is basically and essentially Indian culture, or the Indian set of values? Fortunately, we have had perhaps an early start so far as the march towards civilisation is concerned. We know today that India was one of the countries, which developed civilisation. Earlier than many other countries in the world, like the United States or European countries, which today are considered as developed countries. This long tradition going beyond the recorded history of 5000 years if not more gives us a basic framework for understanding our culture and traditions and make some little effort or imbibing scriptural knowledge. This is the theme of our exercise today.

Perhaps, the most striking aspect of our country and culture today is the presence of what has become a cliché, 'unity in diversity'. We are a country with 18 official languages and a bewildering variety of ethnic groups and traditions. How is it that a great military power like the Soviet Union collapsed into 15 different countries the moment the pressure of communism was removed? How is it a small country like Yugoslavia, split in to nearly 7 countries after 1991? How is it that we have been able to carry on for years and generations as single nation? There are some who think that India today is a nation thanks to the advent of the British and **colonisation**. But let us not forget that much before the British came, the concept of India as *bharatavarsha* or *bharatakanda* spreading from the mountains of Himalayas and down to the oceans at Kanyakumari was recognised and spelt out in scriptures and practices like daily rituals of **sandhyavandanam**, which the Brahmins are supposed to observe. The slokas of the **sandhyavandanam** show how the idea of India as a nation was long recognised. They show how another big tradition of mathematics was developed. Our forefathers could conceive time in terms of infinity. This is the first aspect of our culture namely, multiplicity and diversity a result of our long process of openness and assimilation. Dr. Radhakrishnan used to highlight the capacity of India for synthesis. The openness is reflected in the Rig Vedic invocation – *aano bhadraha krudhayoyentha vishwaka* – let noble thoughts come to us from every side and the **synthesis** is recognised by the language and culture we have today. This openness also arose because of a very early realisation that ultimately, the human race shares a single planet and the entire human race is a single family. Today research in genetics and genomes has given an opportunity for scientist to trace how ultimately human race which evolved first in Africa, migrated and colonised the whole world. Interesting experiments are being made about tracing the DNA of people of different continents and deduct the migration in the ancient past.

Today, science recognises that we are a single family but this was conceptually recognised in the ancient wisdom of our culture – **Vasudhaiva Kutumbakam**. Beyond assimilation and openness we come to another important aspect of our culture, which is the mind which can conceive of abstract ideas. I was Additional Secretary in the Department of Atomic Energy and I was told an interesting story about Homi Bhaba. When Bhaba started talking about India developing nuclear power in the 50s, foreign scientists asked him, 'where are your engineers and scientists going to come from?' Bhaba's reply was, 'don't forget, for 5000 years what we Indians have been doing is to sit on our bottom and contemplating infinite'. So we have a developed a concept of abstract thinking and particularly mathematics and logics and so when India needs its nuclear engineers and scientists, we will not look for outside help. Bhaba's word proved to be profiting because they were ultimately rooted in **an** uncanny appreciation of the strength of Indian culture.

Western countries recognise modern scientific ideas articulated in our scriptures. Interestingly, Fritjof Capra in 'The Tao of Physics' has pointed out the close similarities between ideas of quantum physics and concepts about the nature of physical world articulated in the Upanishads – our Indic scriptures. God himself was visualised as smaller than the atom but bigger than the biggest. "Anoramiyanam Mahao mahiyanam".

The concept of perfection and infinity are reflected in our sloka about how out of perfection comes perfection:

*Om purna madah purna midam
Poornat poorna midayach yathe
Poornasys poorna madaya poornameve
Vashishyathe*

Before we explore further, we must look at two other aspects of the topic of our discussion. Traditions are methods of doing things, which come to us historically because at some point of time, the practices are found to be useful and beneficial and so generation after generation followed those traditions. For instance, our traditions relating to marriage and family are based on thousands of years of experience of living together. Commenting on the current economic crisis in global business, Mr. Gurumuthy has been pointing out how countries like India where the family traditions are strong suffered less than countries like the West where the family traditions have been broken. Excessive emphasis on individualism has led to the apotheosis of selfishness. This resulted in pure materialism leading to disaster. In economics, the school of behavioural economics is gaining greater respect that because ultimately it has been found that the whiz kids of the Wall Street are also human beings and they are also tempted by the same human emotions of greed and desire as anyone else. Traditions also can be binding and business progress. We have seen from time to time, old traditions are replaced. This is nothing new because as the society develops, circumstances giving rise to change in practices. In our own country, we have had a very bad traditions like sati and prejudice against the girl children. It is high time that these are given up as situation has changed drastically today.

We then come to the issue of imbibing scriptural knowledge. The scriptures relate to religion and religion pervades every aspect of life. We may talk in terms of secularism, which at a simple level means separating the sacred from the worldly or material goods. The world is discovering that you can not make a total separation of material things without having an appreciation of the religious or the spiritual dimension. As an ancient civilisation we have a lot of scriptural literature and at the same time we have developed technology also. We have seen earlier how mathematics was one of the areas earlier developed and proceeds in to mathematics was astronomy.

Astronomy in the past was also related to religion and astronomy and astrology were almost co-terminal. The importance of the eclipses because of the dramatic experience which the entire community shared at the time of the solar eclipse or lunar eclipse had given a boost to the sharpening of the mathematics relating to astronomy and it is remarkable that even today traditional scriptural method of calculating the occurrences of eclipses has proved to be accurate. In the area of astronomy and geography the realisation of our forefathers that the world was a sphere and the earth revolved around the sun is a tribute to the development of the sense of logic in the ancient times.

Logic underlies discussions and details. Our scriptures are full of arguments. No wonder, Amartya Sen highlighted this in his boom 'The argumentative Indian'. One of the reasons why today we are a democracy is our strong tradition of argumentation. Bhagwat Gita itself is an argument between Krishna and Arjuna. Logic and argumentation themselves were developed as special subjects.

A lot of our scripture is connected with this abstract and argumentative concepts. Application of thinking and abstract concepts to the world around us became technology and science, helping us to understand the nature of the physical world. We have already seen how mathematical development led to progress in astronomy and astrology and also the regulation of life. In our ancient agricultural society, the occurrence of the eclipses and prediction of the

monsoon were vital. Practically every part of India has got its own regional calendars. Even today the traditional almanac 'panchang's' predict the likely hood of rain and the seasons fairly accurately.

The development of technology is related to the people's life as a whole and their world view. It is not only agriculture but other areas like health and control of diseases. Ayurveda is a remarkable development of our tradition. Here again there was a close link between the traditional concepts of life and the understanding of how the health depends upon the type of food one eats. Systematic analysis have also been made about flora and fauna. Ayurveda recognised the medicinal properties of many plants. Recently the attempt to take patents regarding the medicinal values of turmeric by an American Firm was successfully resisted in a fight rightly called 'the battle of haldighat' by Dr. Mashelkar who headed our CSIR in the late 90s.

When it comes to technology, another major area of development linked with religion was the development of building and architecture. Detailed **agama** shastras evolved about building temples and houses. In times of war, weapons had to be made and **India's** progress in metallurgy particularly steel is well known. The fact that the Mehrauli pillar in Delhi has been a marvel of resisting rust over thousands of years. It shows the extent to which metallurgy had developed in our country. Other technologies developed were about glass, paintings and dyes and textiles. The study of the scriptures can be undertaken from the point of the uncovering the knowledge embedded in them. Perhaps a rich store of immediate economic impact will be in the area of medicine, particularly ayurveda. The government of India has taken the initiative to study the medicinal properties and the elements which have got therapeutic values among the various ayurvedic medicines have been compiled. This must help our pharmaceutical sector greatly.

A study of the culture, tradition and scriptural knowledge therefore is highly beneficial. We can learn from the past and many a time, the techniques of the past and the knowledge developed can be of immense value even in tackling the problems of today. This will call for a lot of lateral thinking on the one hand and a thorough and continuous efforts on the other. Thanks to modern technology, it may be possible to catalogue all the vast literature we have in the form of manuscripts which may face physical extinction and store them in the digital form in the computers. This very process of compiling such data itself can lead to new age of discovery.

Culture, tradition and scriptures therefore, provide an exciting opportunity for us to not only appreciate what our forefathers did. We can build on this tradition and at the same time develop new insights which will be very useful to us for launching initiatives in every sector in the extremely competitive world of today.

The Anna University therefore, deserves the congratulations and thanks of the nation for having set up this a Centre for Applied Research in Indic Knowledge Technology.
