

Role of Traditional Knowledge in a Knowledge Society

Interpreting Insights for Contemporary Use

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ABSTRACT

This paper seeks to examine the possibility of the use of traditional knowledge/insights developed over a period of time in the Knowledge Society. The author asks the present generation not to neglect it and not allow it to be lost in the haze of antiquity. It also gives reasons why this knowledge continues to be relevant in our contemporary societies. This is perhaps one reason why the National Knowledge Commission has specifically mentioned the importance of this traditional knowledge in our educational system.

“A technologist first builds a transport to travel on earth, second in the water and the third capable to fly in the sky. O person! Such technologists impart happiness, triumph and make us powerful. It connects or regulates such movements in the ocean with thoroughness. Likewise, they should train more people to multiply the number of more technologists.” Rigveda, 2. 18.2

Meaning of ‘Traditional’ Knowledge

Before we define *Knowledge* let us try to understand the use and meaning of the term ‘traditional’ first. Tradition lexically means “the handing down of opinions or practices to posterity unwritten”, i.e., something society remembers to be useful and even after repeated trials finds the results consistently uniform. This is the scientificity of a tradition. All traditions have two components – one the uncritical ritualistic, and the other ‘open’ for a dialogue before a change. All societies have to deal with both. The uncritical and the ritualistic form of a tradition, if followed, make a society ‘closed’. Invariably such

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societies get dominated by priesthood and become inimical to progress. It is the 'open' societies that welcome criticism, dialogue, dissent and eventually progress. The best indicators of 'openness' are the multiplicity of educational managements and a variety in the school curricula. Such societies alone welcome' criticism or questioning of a tradition and ignore the classes who oppose change or variations in social practices.

Defining Knowledge

How does one define a 'Knowledge Society'? Firstly, let us try to understand the meaning of the term Knowledge. Knowledge is nothing more than rational, cumulative, classified, graded bits of information, which can be openly questioned. Information is a single point illumination of a query, which most of the time is an uncritical reply and whose source is invariably difficult to identify. A Knowledge Society is characterised by 'openness' and acceptance of new ideas and innovations. Being progress-oriented it is forever ready for a dialogue, experimentation and rationality. It is possible that some of us may hold the view that knowledge societies are a modern acknowledgement of a reality and that such societies have appeared only recently. This is not true. Such societies have existed in the past also and their quantum and the level of knowledge continue to surprise us. In fact, in a number of areas such as philosophy, ethics, science, literature, architecture, etc. the Greeks, the Egyptians, the Chinese and the Indians reached pinnacles of glory.

There are areas in which the ancients have yet to find their modern-day match. For instance, in Philosophy, Bertrand Russell acknowledges that the entire development in this field could easily be summed up in a single footnote to Plato's *Republic*. The Pyramids continue to amaze us for the way they built vaults to preserve their dead and the material used to keep their remains unblemished. We have yet to find a match to Confucius or Lord Buddha and for the Aristotle's theory of the 'golden mean. We have not succeeded to add a new plot to the seven identified by Aristotle or excel the use of Divine intervention in resolving a complex situation in dramatic plot.

Knowledge by itself is both multi-dimensional and unique. It has a typology of its own. Besides being eternal and contextually identifiable, knowledge has a variety and its set goals. For instance, human knowledge is different from that of the animals. Each Discipline as a Knowledge area has its own stock mostly different from that of the others, and, even when the new stock is merely a derivative it

seeks to explain the differences from remaining independent and un-submerged. Knowledge is distinguishable both by its age or the geography. When exported, changes its allegiance too and acquires a new identity such as Indian/American or Australian English. Knowledge could be static and/or developmental. The only thing that characterizes knowledge is that it changes its hue, control, definition and the state of development in terms of politics – whether religious or otherwise. Therefore, while knowledge in a democracy is always on the rise/development in an autocracy or dictatorship can never be similar.

This means Knowledge exists in varying stages of development – some nascent, other developing or some fully developed. All traditional knowledge need not be developed afresh. In a way knowledge remains forever amenable to critical examination. Each stage of advancement has a context to consider. For instance, in the Indian context our society lives in varying stages of material and social development. A few of us have grown materially and intellectually so advanced that a comparison with European society appears legitimate. But the majority lives in conditions of extreme destitution and intellectual poverty. Generalisations, therefore, become irrelevant.

One must therefore remember that societies are not homogenous. Just as it is impossible to find everybody to be identically healthy or sick, humans continue to offer a variety in existence. Similarly, there is no question of finding everyone equally accomplished or well-read. Therefore, all societies are identified in terms of groups of people who differ from each other either racially or culturally, and who have characteristics that help keep their identities distinctly definable.

The Sublimity of the Vedas as a source of Perennial Knowledge

The Vedas are correctly regarded as repositories of all kinds of ancient knowledge and the acme of ancient Indian wisdom. In them lie the seeds (at times the finished products) of our modern knowledge. For instance, there is hardly any branch of knowledge, viz. music, astronomy, physics, modern mathematics, yoga, alternate medicine, philosophical systems, literature, grammar and prosody, etc., whose foundations cannot be traced back to them. A few know that the binary system, which gave birth to computer sciences, has its origins in the Vedas. The yoga and the alternate medicine, which are the current rage in the West, can also be traced back to the Vedas. True, we have outgrown many of the Vedic discoveries and findings. But there are numerous areas of knowledge where we are still groping in

the dark alongside the ancients. In some ways the contemporary astrophysics has brought us back to the *Nasdiya Sukta* to compare notes. Be that as it may, we share with them the desire to learn and discover.

We find that the Vedas contain two types of knowledge – one that is eternal, this knowledge is given to us as a finished product; and, the other that changes with time and people. The knowledge they give us about the nature of humans – like health, moral or religious code, philosophy, etc. is liable to change either through deliberate efforts or time. The reason is simple. Each age and time defines its health, morality, and material requirements. But the constants like the need to work for a living, do business, undertake travel, evolve methods and modes of governance, etc., remain constant with plenty of scope for redefinition in their form and content. The Vedas offer us a variety of knowledge most of it being eternal! or constant. They also lay the foundation for a possible variety and scope for advancement.

Traditional knowledge has its own uses. The Vedas informed us way back in time that, “O people! You should discover the attributes and myths of wind and sun. they create water and juices of all types by penetrating through the clouds and make prosperity. The rain water does not stay with the sun. The origins of the water give knowledge about the sun and let us know that.” (*Rig Veda* 2.30.2) It is perhaps since then that the Indian farmers know the meaning of wind direction, the movement of the seven stars, the usefulness of the sun, and the moon, relationship of months with seasons and the interpretation of the colour of the sky with prospective disturbances, etc. They have been told over a period of time when certain birds appear, sing or squeak that portend a change in weather or when the black ants move from one place to another along with their household wares it signifies climate shift. For our purpose it is enough to understand that all these simple bits of knowledge passed on from generation to generation come in handy since they help supplement the predictability of scientific and time-tested human awareness and information. If we wish to define the uses of traditional knowledge we shall have to conclude by saying that the entire stock of human knowledge is built up on the information handed down from one generation to another and eventually this amounts to measuring the level or extent of a society’s progress. The ones who lag behind get classed as backward or ‘developing’ and are those who neither create new knowledge nor store the knowledge that is readily available in the form of traditions. Besides they do not possess

in adequate measure the necessary wherewithal of transferring it either.

What we call scientific or objective reality is something that has a lineage of tradition. Repeated experiments or testing the reliability or validity of an information/hunch/or/hypotheses makes the information thus gathered scientific – because it could be demonstrated anywhere to show consistency in the results. In a manner of speaking, therefore, ‘traditions’ in most cases are nothing but scientifically valid truths whose origins/sources have been forgotten or are just not readily available for comparison. This does not qualify for a sneering act on the part of those who generalise knowledge as a derivative of some available source other than mere oral tradition.

In the case of India, our traditional knowledge has withstood the test of time. The illiterate farmer is nearly as good a weather forecaster as a weather reporter who has the benefit of scientific gadgets. This comparison may not hold good always, but the predictability of both sources of information is seldom questionable.

Traditional Knowledge as Conceived by the National Knowledge Commission

The National Knowledge Commission (NKC) too has assigned a certain role to this traditional knowledge in their scheme of things. Although one may not agree with the definition of the traditional knowledge given by the NKC (p.22), it is true that the “appropriate application of this knowledge can enrich people’s lives and livelihoods, provide alternative means of sustenance and generate substantial employment.”

The NKC has written that it is examining “the following aspects of traditional knowledge:

1. The principles that should govern the documentation and use of plant based drug formulations;
2. Traditional agricultural practices;
3. Culinary traditions;
4. Traditional water-harvesting techniques
5. Traditional products, services and art forms not included above.

As it is, the NKC has already received “a report on the traditional health sciences for their globalisation”. I suppose the reason why a

Report on this area of traditional knowledge was the first to be submitted is because this branch of health sciences is more well-known and its practitioners have always been available ever since the times when *Atharvaveda* was compiled. But then there are other areas too that are equally well-known and nearly as much traditional—a few that have a direct bearing on our daily life and are linked with our food habits, naturopathy, environment, our rationality and mental health.

Though it is not possible to include all these areas in this paper or go into details of the benefits that may accrue if we were to learn the truths that were recorded in the Vedas but for the benefit of those who wish to learn about them, only two or three aspects of that knowledge are presented. We must remember that a section of the Indian population reveres the Vedas although they shall never read them or learn anything from them. Faced with the energy crisis the modern man should know that the Vedas had exhorted in their time the scholars to “know the nature and properties of energy and should take the optimum use of that knowledge” (*Rig-Veda* 2;9.1). What is most intriguing about the Vedas is that they come all of a sudden not unlike a bolt from the blue without any precedence/continuity or knowledge of the state of society that produced them. We know practically nothing about the pre-Vedic people, the state of their material/literary development, their social organisations/customs or preferences, etc. The usual support for any historical statement that one derives from subject areas such as archeology, written words, etc. provide no help to an individual trying to piece together a picture of the time that preceded the Vedic age.

Connotation of Certain Terms in the Context of the Vedas

It is important to define a few terms used in the context of the Vedas. It may interest some to know that *Sukta* means what is pleasant to hear or something nice that has been said. In all, the Vedic *Samhitas* (as distinguished from the literature based on the Vedas such as the *Brahmanas*, *Upanishads*, *Aranakyas*, etc.) consist of 20,500 mantras. The other thing worth noting is that a number of *Rgvedic* verses appear in the other Vedas too. The Vedic prose is rhythmic. The Vedas contain the earliest recorded poetry and prose literature of the human race. The Vedas are *no sastras*, i.e. they are not systematised knowledge with a set of any scientific terminology. In most cases they summarize the insights gained over a period of time.

Samhitas means compilations. The *Suktas* and the *mantras* that are compiled under *Rik* are called *Rik Samhita* or the *Rigveda*. Similarly, the mantras compiled under *Sam* or *Yajus* are called *Samveda* or *Yajurveda*. The *Atharvaveda* is so called because Rishi Atharvan wrote a substantial part of it. For a long time the *Atharvaveda* was not regarded as part of the *trayi* tradition. Generally, it is believed to be the last Veda because its content reflects a society very different from the society in the earlier Vedas. It seems by then the Aryans had come in contact with the local tribes and aborigines who believed in sorcery, magic and other satanic powers and all these impacts got reflected in the mantras of this particular Veda. In her book, *A Short History of the Vedic Literature* (1994), Dr. Pushpa Gupta advances reasons for accepting *Atharvaveda* as the last Veda. According to her (a) religion had peaked by then, (b) it deals essentially with the material world that deal with mundane occurrences of human existence, and (c) thereafter no new prayers were written.

The meaning of a few terms generally used while talking about the Vedic literature are explained earlier. For instance, the *Sukta*, means good poetry, or *Mantra* means speculation or summary of thought presented in quintessential form. The term *Samhita* means compilation. On the basis of the meaning and the nature of the content the *Vedas* are called *veda-trayi*. This use does not denote that the reference here is restricted to three Vedas only and the fourth Veda, i.e. the *Atharvaveda* has been excluded. At the same time it is generally taken to mean that only the first three Vedas count and the fourth does not get similar weightage.

Though technically the word Veda means knowledge/*gyan*, the Indian tradition holds that the Vedas contain both the contents and purpose of the *karmakaand*, i.e., the sacrificial rituals as well as the *jnankaand*, i.e., the spiritual knowledge. On the basis of these twin purposes of the Vedas the sacrificial aspect of them is contained in the *Brahmanas* and the *gnan*/or the spiritual aspect of the knowledge is dealt with in the Upanishads. In fact, Apastamba titles both the *mantras* and the *Brahmanas* as the Vedas.

It is believed that internal evidence available in the *sruti*/or what was revealed or heard is indicative of the gradual complexity of language development that took place then. The ancients preserved the Vedas through oral tradition. It is common knowledge that to keep any language unchanged for a long time is simply impossible. A living language will invariably change both because of its natural tendency to absorb new words and idioms in its repertoire and to keep modifying pronunciations with each successive generation. This

linguistic reason forced the ancients to devise a system that prevented such a change to occur. They, therefore, evolved a regular disciplinary system known as the *vedangas*, i.e. the limbs of the Vedas. It was felt necessary to lay down general rules for pronunciation of words properly. Change in pronunciation leads to change in the interpretation and meaning of the words. This necessitated the formulation of *shiksha* and *chhandas*. The *vedangas* are six in number. They are: 1. *Shiksha* (orthography), 2. *Chhanda* (prosody), 3. *Nighantu* (lexicon), 4. *Jyotis* (astronomy), 5. *Vyakarana* (grammar), and 6. the *Kalpa* (rituals).

The ancients also divided knowledge into several areas of specialisations. These knowledge areas are called the up-Vedas or the minor Vedas. These are: 1. *the Ayurveda* (the science of medicine and cure), 2. the *Gandharva-veda* (the system of aesthetics), and 3. the *Dhanurveda* stands for the system of defense sciences, and 4. the *Arthaveda* means economics or the science of wealth which is concerned with the production, distribution and utilisation of wealth. For the development and growth of this kind of knowledge it is more than obvious that the ancients must have taken a very long time. In fact, the form in which the Vedas themselves have been made available to us makes an interesting reading.

The area which is currently of the greatest concern to the Mankind, *namely – Environment*, will be taken up first for discussion. Let us see what the Vedas have to say about it.

Long before others came to realise the value of environment the ancient Indians had perhaps intuitively learnt that trouble comes from unknown sources and, therefore, it is better to take care of the immediate neighborhood first. This neighborhood is environment. By definition 'environment' means "The aggregate of circumstances surrounding organisms or group of organisms including the social and cultural conditions affecting the nature of individuals or community." Hence, the following prayer:

"May the five types of men, born to offer (the butter of) affection, and eager to perform the sacrifice, be pleased with my discharge of the function as an invoker; *may the earth preserve us from the troubles that come from heaven.*

"May you, spinning the thread of divine knowledge, follow the splendid light of the illuminator, and protect the pathways well...

"The great river of life-conflicts flows alone, be alert; rise up, cross over, my friends; here let us leave those who are wretched and hence unhappy; may we cross over (this river) to secure auspicious boons." *Rig-Veda X.54.5-7*)

The present write-up is addressed to those who have a very vague idea of how knowledgeable the ancient Vedic society was. In whatever form the Vedas have survived, they tell us enough about the Nature, Life and the concerns of the ancient Indian. Since I have for my write-up selected the Vedas as the principal area for exploration I have gone by the text that is available; therefore I have not bothered to include any analysis of the archaeological findings of Indus Valley Civilisation to show how the urban populace of those times had evolved amazingly the most sophisticated and scientific urban water supply system and also the sewage systems that have been excavated.

The Vedic society is no less advanced and knowledgeable about the world around them. The Vedic Seers appear to have foreseen the catastrophe Man was likely to invite for his own destruction, therefore, they had forewarned against indulging in such acts.

The appreciation for 'enlightened person' is remarkable for the ancients. Read what they have to say, "O men! I praise an enlightened person who shines and purifies like the fire kindled well with fuel, who is steadfast in non-violent sacrifices, pure, purifier, liberal donor, respected by many scholars, void of malice, wise with knowledge and humility and highly learned." (*Rig-Veda*, 6.15.7)

Experience informs us that mere knowledge is rarely enough to prevent trouble, and it is also true that we rarely listen to reason until the catastrophe takes over and we are left with nothing else but regret. In the modern high-tech world people have little time and even less patience to go deeper into any text even when it might have enormous value for one's guidance. Indeed, it is no longer considered necessary to read scriptures or may be it is even considered un-intellectual, if not *infra dig*, to try discovering any particular sense in reading them. Perhaps it is the job of a priest who is put paid for his services to read the same out in bits and pieces on ceremonial occasions.

Contemporary Environmental Concerns and the Vedas

Indian historians took considerable time to discover the meaning and the message that the Vedas carry and that too only when the Western scholars had started using the Vedas and their text for purposes other than those of mere scholarship. One must admit that it is the West that initially led the path back to our glorious past and furnished insight to find for us gems that had been lying hidden in the obscure homes of the neglected but venerable scholars.

The relevant hymns on each of the manifested contemporary environmental concerns from the text of the Vedas are cited here to show that the ancient Indians had the knowledge of the environmental problems but their future progenies, alas! did not have the 'Will' to act. The message is clear. If we failed once there is still time to mend our ways. This is the sole purpose of learning History. Historians as interpreters of facts are capable of delivering subtle messages to the posterity.

Although all the four Vedas were supposed to have appeared simultaneously, the common belief is that the *Rig-Veda* came first. It is in this Veda that we see *vayu* or air being regarded as the soul of human beings. They realised the value of the air and talked of its curative powers. "Lord *vayu* is the soul and spirit of *Indra* and all other gods and living beings and is the seed of the world. Such a divine Lord flows according to its Will. We can only hear it but cannot see it. We bow before this Lord *Vayu*." (*Rig-Veda* X.168.4). Additionally they came to realise that air had its own curative powers. Therefore, they prayed, "O *Vayu*! Bring your medicines and do away with all the ailments here because you are the only one who is full of curative powers." In the history of Indian philosophy there is discussion about the evolution of the concept of *Atma* or the source of life, which was at different point in time was variously identified with air, water, food, etc. Even now we call soul as *prana vayu*. Since they rated all these 'elements' as divine and identified them with soul or life itself, it was unimaginable for them to have even thought of polluting anyone of these.

Read, for instance, their feelings about Mother Nature:

"I address this new laudatory hymn, with all sincerity of heart to the fire Divine, who loves it; and appreciates; may he hear our voice; may I be in the centre of His heart... ..like a loving well-attired wife meeting her husband.

"I address this new laudatory hymn, with all sincerity of heart to the fire Divine, the absorber of water, to whom the oblations of herbal juices (mixed with curds) are offered and in whom every living being like vigorous horses, bulls, milching cows and barren ones, sheep and goat are consigned to the cremating fire.

"The vast heaven, the spacious firmament, and the glorious unbounded earth; pay homage to the fire divine, Lord of the cosmic sacrifice; Nature's bounties such as lightening, the sun, the water, the wind and the cosmic intelligence, with potentialities purifies, recognise him with one accord.

“The rivers flow along with the dashing storms and sweep over the boundless earth, with them the circumambient lightening, spreading over a wide space thundering in the belly (of the firmament) bedews everything thing that lies within.” Rig-Veda, X.92. 1-4)

In terms of Western history the concern for environment dates back to 1962 (which is very recent) when Rachel Carson wrote *Silent Spring*. This book focused on the enormity of ecological damage brought about by industrial waste being dumped into the rivers. Then came the papers by Barbara Ward and Rene Dubois in 1972 “Only One Earth.” Their project had been funded by UNDP. It brought to the fore the conflict between biosphere of Man’s inheritance and the techno-sphere of His creation. Since then the voices of concern for the safe upkeep of this creation have not been silenced. The concern clearly is about keeping the environment livable. The express desire is for striking a balance between material prosperity and human sustenance. The ‘Club of Rome’ – funded by independent scientists, too has shown similar concerns and proposed almost identical schemes to sustain life on this planet.

The ‘Limits to Growth”, brought out in 1972, reported research findings based on data collected at global scale on a mathematical model. The model predicted Doom and stated that continued resource shortages, crowding, pollution, famines, etc. will soon control current trends in population growth, natural resource exploitation and capital investment in agriculture. As expected the model was heavily criticised. Since then the problem remains where it was seen for the first time. As of today, the problem is whether or not, based on non-renewable resources, is it possible to maintain a certain rate of sustained growth forever? We unfortunately are no longer ideologically neutral.

The Indian concern for the environment is as old as our civilisation’s origins. But did the ancients understand the meaning of the term ‘environment’? Perhaps they did. But then what exactly do we mean by this term. “The environment (after all) is sum total of water, air and land, inter-relationships among themselves and also with the human beings, other living organisms and property.” This definition appears in the Environment (Protection) Act, 1986.

In modern terminology if one wanted to have a comprehensive knowledge of the subject the minimum requirement is to go through several stages of a variety of subject areas; such as Botany, Zoology, Microbiology, Genetics, Geology, Bio-chemistry, Bio-technology,

Oceanography, Atmospheric science, Statistics, etc. It would appear as though we hold the view that if the ancients spoke on all these subjects with equal command like us then alone they would be considered knowledgeable enough for our good failing which, let us keep them under covers for a few recluses and the lonely.

For instance, see in this quote a desire that we have in common with the ancients, i.e. work so that one could meet one's physical needs and an airy house to live in. "I resort to agriculture and craft for removing poverty and ministering happiness to all. May I feel joy in domestic life! May our houses be sufficiently commodious, airy, fully comfortable, and built in the middle of an open space" (*Yajurveda*, Chapter 1.11) .

For an obvious reason an individual engaged in agriculture knows the value of timely and plentiful rain. In this sense we have not outgrown this basic requirement: "Let us see with respect that earth, which loves the rains and is looked after by the clouds, in which is grown food grains like rice and barley, and where live all the four castes, and the other five types of people". (*Atharvaveda*/12/1/42) .

As one reads the Vedas, one is made to realise that the ancient Indians suffered from the same weaknesses as we do, but they prayed to get rid of them through sustained efforts called the *yagnas*. For them, "the *yagna* keeps away the thieves, refines and sweetens the speech, is productive of foodstuffs and is the bestower of knowledge and vigor" (*Yajurveda*, Ch.1.16) .

We see in the following few pages the type of knowledge they had of the Nature and its capacities. They desired that we do not transgress boundaries and remain within acceptable limits to avoid catastrophe. See here their knowledge about fire/heat.

"I describe the special features of Fire. It takes every type of matter forward. It softens iron ore etc. it burns everything. It emits light. It beautifies. It is set up before everything else. It performs many functions and is used during many activities. It is an instrument for attracting attention, give and take and for food preparation. Fire creates inside earth all varieties of gems and ores like gold, silver, iron, and diamonds" (*Rig-veda* 1/1).

In the following quote the reader could see that they had knowledge of Vaastu and were fully acquainted with the powers of the Nature's Elements.

"O husband and wife! We want to construct a house for you; that is fully lighted by the strong rays of the Sun. For Sun is strong and capable of giving happiness yielding light" (*Rig-veda* 1/155/6) .

About the Solar energy they say:

“Learn carefully about the presence of Vaishwanar Fire in us all. The same Agni/Fire is located in all worlds and the same is working through Vaishwanar Sun doing all kinds of work such as producing light, growth of plants etc.” (Rig-Veda 1/98/1).

Here is a hymn from Yajurveda (XXXIII.92), which talks of the functions of Sun.

“Just as the Sun, set in Heaven, the benefactor of humanity, increasing in power on Earth, ripens medicines and grows food, removes darkness of night with his lusture, shines forth, so should ye dispel ignorance...”.

“Just as lightning destroys insects that disturb sleep and spread disease, let us enjoy all the fruits and favours granted to us by the Sun and the wind and thereby let us feel safe against Nature gods” (Rig-Veda 10/36/4.)

Or read their knowledge about the relationship of Sun with the formation of clouds and feeding rivers with plentiful water:

“O Gurudev! Just as strong, light-emitting Sun attracts the waters of these rivers toward itself and having done so distributes them through clouds all over again on the land, so do you attract students and instruct them with eclat” (Rig 7/34/10).

The Seers, therefore, enjoin us to learn to “respect that special Guru who is powered by education, who is familiar with the work of Agni, Vaayu, Sun and other deities and knows all about the names, places and the births. You should respect those Gurus too who understand the speed of air and the lightening and who can tell you the exceptional ways to Salvation” (Rigveda/7/58/1).

They offer a lesson or two in human psychology for compassion toward one and all.

“May that intellect which is inside me let that be full of feelings of welfare for others. It is because of that the industrious, reflective and patient men work to gain both knowledge and the riches, and undertake to give charity, worship gods and work for mutual benefit, and that which is located in all living beings”(Yajurveda/34/2).

“Even as all spokes in a wheel are joined together in the centre may my intellect also carry feelings of welfare for others because of the coming in of knowledge from the Rigveda, the proper methods of actions from the Yajurveda and of worship from the Samveda” (Yajurveda /34/5).

We could see their concern for the education of all, more particularly of girls. At least in this sense they were far ahead of us. While discussing methods of instruction, the Seers also talk of how to practice writing. Incidentally, the following lines throw light on a historically disputed domain. Few historians dispute the fact that the Vedic people had no script and therefore writing was unknown to them. I suppose it is possible to resolve that contentious issue whether or not the ancients knew how to write, what to write and the lack or otherwise of a script. The fact that they knew about the written word can be established even otherwise. For instance, on the demerits of gambling the *Rigveda* (10/34/2) says that the faces of the dice carried written symbols. At another place (viz. *Rig-veda* 10/62/7), there is a mention that the ears of the cows have the number 8 written on them.

Additionally, these lines also show that education of girls was common and prevalent. In their opinion female teachers are better teachers than their male counterparts.

“O girl students! Just as intelligent teachers introduce writing and reading of letters with the help of fingers, you should know lady teachers who know: innumerable subjects and possess immeasurable learning. For your balanced development such an intelligent teacher will herself make all arrangements” (Rig-veda/ 7/15/9).

In case this is not enough to establish their knowledge about language/linguistics then see elsewhere they mention that mere reading is never enough because people learn at a pace which differs from individual to individual:

“A few do not understand the secret of the language even after reading it, a few others do not realise the reality even after listening to it but there are others for whom the language presents her true form as does a beautiful bedecked bride reveals herself before her husband” (Rigveda 10/71/4).

“Language through its own symbols explains the wide expanse of knowledge and is able to illumine all intelligence fully. Therefore, one should put language to good use” (Rigveda 1/3/131).

We see here the functions of language per se and its symbolic nature. It perhaps holds a lesson or two for the modern day linguists.

What did the *Rigveda* say about the nature of the universe (cosmology) I astrophysics that we live in? We may have advanced in varied ways but about the origin of the galaxies, stars and planets we are still nowhere being close to certainty. Even today we have not

gone beyond the realm of conjectures in numerous academic areas such as astrophysics for instance; then how could we expect the ancients to be definitive about their knowledge, who definitely had no access to the present day scientific instruments, which make a Hawking so knowledgeable and relatively certain? According to the ancients the universe consisted of three regions – the earth (*prithvi*), heaven (*dyauh*), and the intermediate world or the *antariksha*. We are familiar with the term earth, but not with *dyauh* because this is one term which was employed to denote the vault of the sky, which is the place where the sun and the stars shine. They had an idea that there was an invisible world too where these stars and the sun retired after their daily ritual/duty was over.

The Rigvedic hymns sporadically mention the abodes of padam of *Agni*, (1.72.2), *Indra Pusan* (1.162,2), *Vishnu* (1,154,6), etc. In reality they appear to think that the universe consisted of four regions. The name of the fourth region is *Satya Lok*. Read *Rg*, (1.35.2), which says “Causing immortal and mortal to rest, God Savitr returned (to his abode) by way of the *Satya Lok* (i.e. invisible) world; he comes on the golden chariot observing the worlds.” The *Satya Lok* was considered the abode of *Brahma*, the Creator. The later day developments have only added certain more *Loks* worlds to the list. Only as a passing reference I mention here the seven *loks* that the Puranas talk about. From *Bhu-lok* upwards are *Bhuvar Lok*, *Svar-Lok*, *Mahar Lok*, *Jan Lok*, *Tapo-Lok* and the *Satya Lok*. Similarly, by that time the idea of seven ‘nether’ worlds had also grown and developed. They were called *atal*, *satal*, and *patal*, etc. according to the depths at which different unwanted creatures supposedly lived.

Vedic Concept of the Origin of the Creation

Numerous references are made daily to the unusually wonderful understanding these Rishis had of the origin of the Creation, especially to the scientificity of their observations. For instance, the subject of Creation interested these Rishis immensely. The *Rigveda* talks of it in the Hymn 10/129/7 and *Yajurveda* in 10/129/3, etc. It does amaze one to imagine that even without the benefit of any of the modern equipments and gadgets they could be, at times, so precise in their observations. For instance, the Vedas hold the view that in the beginning there was nothing but darkness. It was the state of Nature, which could drown all without a trace. That extensive Nature, which is hidden in the Cause form, the same with the shining glory of the divine God appears in the physical form as its effect. A

comparison of this piece with the findings of modern astrophysics may be of great interest to all.

After reading the *Nasdiya Sukta* one feels surprised at the latent modernity of reasoning and logic:

“What was the state during the Pralaya or total annihilation? Who is the Creator? What was the principal cause of Creation and what its principal instrument? During Pralaya there was no evil or good nor did the atoms fill the horizons? What was shrouded and by what? Who was the Protector? Did only the deep seas exist?”

“There was no death nor was there any life. Even the day and night had not taken birth. The lone Creator breathed without any life, breath by his own will. Nothing superior existed beyond him.

“In that dark existed, the un-manifested Nature like seamless water. Everything looked small before Him. Nature gradually manifested itself because of the austerities of the Supreme Being”(Rigveda 10/129 i-v).

A Desire was superimposed on what existed in the “form of inner self during *Pralaya*. The seers could thus realise that the Good was latent in the Evil even as the light is in the dark. The creation could arise out of the un-manifested Nature. Slanted bright rays spread out of these three – God, Soul and the Nature. What was below was as amazing as the one who could serve as receptacles for that amazing semen above. If one went deep into the description of the origins of the Creation itself, we start dealing with the eternal questions of Philosophy whose definitive answers continue to elude us. Our understanding of the Reality is as remote today as it was when the ancients were trying to grapple with it.

In a hymn the seer says, *“One thing that is beyond this world is matter, the material cause of this world, another thing even beyond this is the soul which is remote in rareness and not within reach of ordinary man” (Atharvaveda, Book V, XI. VI).*

The Art and the Science of Architecture

Interestingly, the *Atharvaveda* carries a section on the *Vaastusastra*—the art and science of architecture. Here a number of hymns talk of God being present in a three-room school or the eight-room school. One cannot imagine of a three rooms or eight rooms building without proper measurements and even building materials.

“Like the animal heat in the body and foetus in the womb I, the master of the house live in the houses, which are built with two

wings, four wings, six wings, eight wings, and are constructed in appropriate measurement” (Atharvaveda /9/3/21).

In fact, so great is the insistence on the proper measurement of the size of the rooms and the accurate mixture of mortar that one could seriously start thinking about the presence of the ubiquitous modern day contractor in that society too. One would be amazed to read about their express desire to make lighting arrangements that are necessary for a large room. The mention is of electricity and also of teaching aids. I must say I have failed to be specific because I do not know whether this light is not lightning and teaching aids something very elementary and highly primitive in character. These hymns in question are: *Atharvaveda* 9/ 3/1 and 9/3/11 and many more. The fact that God is present in all these classes of the school does suggest that schooling was carried on in built enclosures and not under the shade of the trees or in the hermitages only.

The Ideals of the Vedic Guru

It is not quite correct that all the gurus had equal competence. But in terms of their insistence on respect there is near unanimity. The impression that we have is that the Guru did not charge fees. May be he did not do so in the beginning. But no student could leave the residence of the teacher without paying the appropriate amount in terms of tuition fees/*guru-dakshina*.

On pupil's return home the following hymn specifically desires that the teacher should make some relaxation in the strict rules that one followed.

“O the best Guru! The restrictions that you had imposed on us regarding food, sensuality and travel, please relax them now. O luminous with knowledge, Gurudev! We shall continue to observe all the pure vratas, and shall continue studying with unbroken regimen, the Vedas. (Yajur/12/12).

In fact, there is a mention that at the time of leaving the Ashram the student does say that he would like to know about the time one could leave the school and when does he invite the teacher home. *Atharvaveda* (11/5/26) describes how glorious the student looks on the completion of his education.

But here is one mantra wherein the teacher refuses to be admired by a student whom he regards to be a fool.

“O you, my pupil! Who shuns practice in learning, even if you are ready for employment immediately, I do not like your praise because

you cannot repeat properly even those lessons that have already been taught. You, who are famous amongst fools, I do not like any praise from you. I would much prefer you becoming properly educated and earn reputation than what you are Right now. That would enhance my reputation” (Rig-Veda /7/22/5).

“The teachers who teach at the lower levels and offer expertise may they improve and grow. Those that teach at the middle and higher stages let them too 1 progress and develop. The teachers of Som-knowledge let them too progress. Let all these teachers teach us the techniques and methods of prayer and the yagnas. Besides these teachers, those who know the techniques of the yagnas and are aware of the way the Universe was created and are free from crookedness and have long lives may they too impart us instruction” (Rig-Veda/10/15/1).

Let us now take an example of their concern for keeping rivers free from pollution:

“O God! Cast aside the vile man who pollutes rivers... “ says the *Yajurveda* (XXX, 8) and the hymn goes on to command, Nishad’s son, hankering after libidinous women; a degraded arrogant, friend of person harmful like a tiger; an uneducated person attached to low dancing and singing women; the demented, given to the application of magical rites; an untrustworthy person who befriends the serpents and fools, a non-gambler, who creates unnecessary excitement; a woman who creates split among the *Pishachas*, the thorny woman who favours the freebooters.”

Look at the way they desire the trees to be protected, He, who rears the trees by erecting barriers round them...conduces to our happiness,.” (*Yajurveda* XX.45).

In *Yajurveda* (Chapter XXII), hymns after hymns talk of protecting oneself against the physical ailments and bless those that help preserve environment. Hymn 5 in the chapter admires one who “protects beautiful objects like the Earth”. The next hymn is even more explicit “Make the best use of me. Take medicines. Derive joy from drinking water. Enjoy well the warmth and light of the Sun. Have knowledge of air and vital breaths. Perform yagna in fire”.

They knew that “The Sun moves singly and alone. The moon is brought to life again. Fire is the remedy of cold. Earth is the vast field for production” (*Yajurveda* Ch.XXIII. 46).

To the questions: “What luster is like the Sun’s light? What lake is equal to the sea? What is smore spacious than the Earth? What things are beyond measure?” The reply is given in the next hymn.

“God is luster like the sun. Heaven is a flood to match the sea. Sun is vaster than the Earth. Beyond all measure is speech” (*Yajurveda* Ch.XXIII.48). It is difficult to find an answer better than this one from a Seer.

Of Birds and Animals

I now cite from *Yajurveda* Chapter XXIV wherein the Seers talk of birds and animals and their attributes and characteristics and where to locate them. The loving manner in which they talk of these birds and animals merely underlines the fact that they knew their beans about environment and wished to protect it. These hymns begin from number 11 and continue up to 40. There is not a single animal known to a veterinarian practitioner that is not described along with its typical characteristics. Read for instance, hymn 18 “The animals of peace-loving parents are smokey-coloured and of brownish hue. The animals of parents who sit in assembly for propitiating *yagnas* are brown and smoky-looking”. The next hymn commands “O men, bring into use the pre-mentioned agricultural animals”. Then comes the knowledge of the experts. “An expert in the knowledge of animals finds Kapinjalas in spring, sparrows in summer, partridges in the Rains, quails in Autumn, kakras in Winter and Vikaras in the Dewy season”. The rishis describe also the uses of each animal according to the class of people for whom they are intended. It is not possible to reproduce all the hymns to show the knowledge of the Seers or their desire to preserve all these species but it is perhaps enough if we appreciate their knowledge and perception from the following hymn (40): “Rhinoceros serves all warriors in preparing their shield; the black dog, the long-eared ass. The hyenas are used for protection against the demons; the boar is for the king who wants to tear asunder his enemies; the lion is swift like air; the chameleon, the Pippaka, the vultures are used for making arrows; the spotted antelope is used for preparing *mrigshalas* for the learned people.”

The next chapter (XXV) opens with a hymn for protecting all objects worthy of desire. Read this hymn in totality, “Learn for the teeth the act of biting; from the gums the method of protection; from tooth-sockets the way of pounding; sharpness from the fangs. Use the tongue tip for a learned utterance; learn the act of uprooting from the tongue; the use of palate by crying slowly; chew with both the jaws; drink water with the mouth. Acquire the knowledge of oozing semen from testicles. Recognise the *Aadityas* from the beard; know the path from the eyebrows; know the sun and earth from their motion; lightening

from the pupils of the eyes. Observe celibacy for the protection of the semen; acquire knowledge through high character. *Objects worth acceptance are worthy of preservation.* Objects after one's desire should not be resisted. Don't show disrespect to your own men. Friends and relation should be fostered."

Whatever else may have been the motive of these Seers in commanding Man to worship God and perform yagnas, one thing is certain. They knew well their environment and wished to protect it.

What better could one offer in terms their understanding of the Nature's cycle around them than the following quote:

"When the clouds cultivate the earth with its waters; then winds are blown (for the rain to fall), lightening is struck, vegetation comes to life and grows, sky pours the raindrops and the earth then gets ready for the welfare of the world" (*Rig Veda* 5/83/4).

We should remember that the ancients wrote an entire Veda on the science of medicine called the *Atharvaveda*. They went into details how a herb has to be identified and then they describe its properties for different ailments. They achieved and left behind knowledge of an almost fully developed medical science, which is currently proving to be helpful to the entire Mankind. Therefore they had prayed, "O God, create a man of iron determination for the implementation of a vow... a forest guard for the protection of a forest.. and drive away a forest burner contemplating the destruction of jungles" (*Yajurveda*, Ch. XXX. 19). One might as well put a question: "What else does a forest officer do other than protecting a forest and preserving wild animals and their habitat under his charge?" In the same chapter of the *Yajur-Veda* in hymn 10 the seer prays "O God create a physician for purifying our body with the eradication of disease; an astronomer for the advancement of knowledge; an inquisitive man full of cravings for knowledge; an extra-inquisitive man for desire of extra-knowledge; and a question-solver for establishing moral law." If read closely one can see the hymn telling us that all knowledge is located in curiosity and for extra knowledge one has to put in extra effort.

"O Spiritual juice (of wisdom and devotion) thou hast been prepared carefully for the soul. Let diseases stay afar together with the fiends of lust, anger, greed, pride and jealousy" (*Samaveda* Hymn. 561). This hymn clearly states that "those who are double-tongued or crooked, cannot take delight of drinking thee." It would be clear to the reader that disease or physical ailment is as good as being crooked or a doublespeak. It is much better to avoid them both. It is only then that "those who are of calm nature like the rays of the moon, (will) be full of strength and wealth of wisdom."

I cite here a hymn (*Samaveda*, 1837) that has been interpreted differently by two scholars of eminence, viz. Satvalekar and Griffiths, whose two versions are given below. Meanwhile the reader should also realise that it is quite common for the hymns being interpreted differently by different scholars. This is precisely what I wrote in the beginning about the difficulty of agreeing on the common meaning of a hymn or even of a single word. The Vedas can be read for different purposes, as they are capable of giving more messages than one can imagine. In fact, it is impossible to understand everything they say and why do they say what they actually say. Majority of the Indians regard them as revealed books because no human being could have been so wise as to cover all themes and subjects, besides all aspects of human life as they do. Probably for this reason alone that F. Max Muller wrote the following:

“What can be more tedious than the Veda, and yet, what can be more interesting, if once we know that it is the first word spoken by the Aryan man?”

The Vedas have a two-fold interest for us.: They belong to the history of world and also to the history of India. As long as man continues to take interest in the history of his race, and as long as we collect in libraries and museums the relics of the former ages, the first place in that long row of books which contain the records of the Aryan branch of mankind, will belong forever to the *Rigveda*.”

So much for the glory of the Vedas! This praise comes from a man who learned Sanskrit and translated the Vedas only to make Hindus Christians.

Be that as it may, the first interpretation is of Satvalekar:

1. “O Omnipresent Divine Mother! Thou art source of happiness. So endow us with strength and pleasure of great vision (realisation) of truth.”
2. Griffith’s translation: “Yea waters, ye bring health and bliss; so help ye bring health and bliss ye us to energy that we may look on great delight”.

It is interesting to note that this hymn has something to do with water. In the next hymn the reason why water is mentioned here is made clear. Because water is known to be the source of life as it is one of the five elements or *tatva* that constitute life and at the same time water is also a cure for numerous diseases even if used singly.

The hymn number 1638 from *Samaveda* has two meanings. One is an external meaning and the other internal. The external meaning

is as follows: “O water! Let your most prosperous juice be ministered to us in this world with the readiness that affectionate mothers apply to their infants”.

The other interpretation is spiritual in character. “O Divine Mother! May thy most auspicious juice of bliss be ministered to us in this world with the readiness that affectionate mothers supply to their infants”.

The next hymn talks of water being used for removing diseases. It is significant that the use of water as a medicine was known to them and therefore it becomes even more meaningful that this water has to be clean or pollution free. Look at it from an ordinary person’s point of view by the time the Seers came to writing the *Atharvaveda* they had learnt through experimentations as well as through empirical evidence the curative value of the usages of both herbs and lotions including water. This Veda is a living testimony to the fact that science grows only empirically. And the seeds of modern laboratories were first grown in the Vedas. This is one History lesson that one should learn from reading the Vedas.

To end the write-up I cite the Rig- Veda (X.1/46):
“Lady of the Forest! Lady of the Forest!
Who seems to vanish from sight in the distance?
Why do you never come to the Village?
Surely you are not afraid of us.
When the grasshopper replies
To the lowing of the cattle,
As though to the sound of tinkling bells,
The lady of the Forest makes merry.
Sometime you catch a glimpse of her, and think it is cattle grazing
Or a house, far away
And at the evening you hear the Lady of the Forest
Like the distant sound of moving wagons.
Her voice is as the sound of man calling his cattle.
Or as the crash of a felled tree,
If you stay in the forest in the evening
You will hear her like a far voice of crying.
But the Lady of the Forest will not slay
Unless an enemy draws near
She eats the sweet wild fruits
And then she rests wherever she will
Now I have praised the Lady of the Forest

Who is perfumed with balm and fragrant?
Who is well-fed although she tills not?
The mother of all things of the wild!

And what greater respect could Man show towards all the elements of Mother Nature than the prayer from *Yajurveda* (36/17) for peace or recite the *Shanti mantra*, which desires that 'let there be peace in the heaven, horizons—where the Earth and sky meet, peace in the vegetation, peace on earth, peace in everything' etc., and this prayer is always sung at the end of any holy *anushthan* or ceremony and this *Shanti mantra* may be accepted as the ultimate for any environmentalist.

I have already referred to the twin state of knowledge being both developed and developing. We have seen how the ancients were concerned about preserving the Nature as God's gift and now I cite a case of knowledge which has continued to grow ever since it was given birth. The current rage for adoption of the Yogic exercises, make us think that this knowledge is very recent origin. This is far from being true.

This knowledge was readily available in the Vedas. However, what has been added to that knowledge is something quite unique. For instance, there are today numerous schools of the Yoga (the *hath yoga*, *rajyoga*, *karma yoga*, etc) and a few *asanas* may also have been evolved and even got patented during the course of development, but read what the *Rig-Veda* has to say on the subject. It is the seed knowledge which has thus prospered over a period of time.

"God who is realised through the practice of seven parts of Yoga consisting of Yamas, Niyamas, Asanas (proper postures), pranayama (control of breath), pratyahara (withholding from external affect), Dharana (concentration) and Dhyana (meditation) commands us in our own interest and is the constant giver of prosperity, riches and plenty." (*Samveda* Book 2, chapter 2; 101).

Until this day the Vedas have not been studied in terms of Knowledge they impart and their secular content has also not been classified in terms of knowledge areas/discipline. But if read carefully, the Vedas touch upon all areas of human interest; be it astrophysics, chemistry, mathematics, music, yoga, or philosophy, rules of governance, parliamentary system, moral law, raising of army and its management, etc. The Vedas have been preserved as collection of liturgies but the fact is that there are other ways to make their content examined and presented. Time has come when the secular content

Role of Traditional Knowledge in a Knowledge Society

of the Vedas has to be classified, indexed and presented. In this paper I have tried to discuss this very role the Vedic knowledge can play. This should serve as an example for future/prospective researchers. The basic role of traditional knowledge is to offer ideas and suggest areas for further research. We must accept the fact that growth in knowledge is limitless comparable to the cosmos whose dimensions remain hidden from human ken,