

Perspective of Sanskrit in Science

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ABSTRACT

The word 'Sanskrit' means "prepared, pure, refined or perfect". It was not for nothing that it was called the 'devavani' (language of the Gods). It has an outstanding place in our culture and indeed was recognized as a language of rare sublimity by the whole world. Sanskrit is the language of our philosophers, our scientists, our mathematicians, our poets and playwrights, our grammarians, our jurists, etc. In grammar, Panini and Patanjali (authors of Ashtadhyayi and the Mahabhashya) have no equals in the world; in astronomy and mathematics the works of Aryabhatta, Brahmagupta and Bhaskar opened up new frontiers for mankind, as did the works of Charak and Sushrut in medicine. Ayurveda is a Sanskrit word derived from two roots: ayur, which means life, and veda, knowledge. Knowledge arranged systematically with logic becomes science. During the due course of time, Ayurveda became the science of life. Let us end abstract with a Scientific outlook by Rigaved 1-89-Sanskrit verse-आ नो भद्राः क्रतवो यन्तु विश्वतः-Let noble thoughts come to us from all and every direction in the universe. सर्वस्य लोचनं शास्त्रं-Science is the eye of everyone. Scholars from Arabia and China would come to India to learn from us in our great universities at Taxila, Nalanda, Ujjain etc. as our disciples. However, it must be regrettably stated that today we are lagging far behind the West in modern science. We have no doubt produced great scientists & mathematicians like CV Raman, Chandrasekhar, Ramanujan, S.N. Bose, J.C. Bose, Meghnad Saha etc., but these belong to the past. In the modern society, one hears multiple opinions about the Vedic tradition of Sanskrit Chanting called Mantras.

INTRODUCTION

In fact Sanskrit is not just one language, there are several Sanskrits. What we call Sanskrit today is really Panini's Sanskrit, also known as Classical Sanskrit or Laukik Sanskrit, and this is what is taught in our schools and universities today, and it is in this language that all our scientists wrote their great works. However, there were earlier Sanskrits too which were somewhat different from Classical Sanskrit. Vedic Sanskrit, we should note, is more fluid, symbolic and less grammatically strict than classical Sanskrit. It cannot be understood by the rules or formations of Sanskrit grammar alone. Its meanings and etymology have more variabilities, levels and hidden dimensions than classical Sanskrit which has many of these of its own. Sanskrit is the language closest to the Divine Word, the original Cosmic Sound and Light vibration behind the entire universe. This Divine speech begins with OM and primal sound, the vibratory pattern that creates the time/space continuum. गण्यते संख्यायते तद्गणितम्। तत्प्रतिपादकत्वेन तत्संज्ञं शास्त्रं उच्यते।

जो परिकलन करता और गिनता है वह गणित है तथा वह विज्ञान जो इसका आधार है वह भी गणित कहलाता है।

AIM AND OBJECTIVES OF RESEARCH PAPER-

1. To learn perspective of Sanskrit in Science.
2. To know about Sanskrit As A Language of Science
3. To connect Sanskrit with today's world.

1. Evolution of Sanskrit-

Sanskrit is said to belong to Indo – Aryan or Indo Germanic family of languages which includes Greek, Latin and other alike languages. William Jones, who was already familiar with Greek and Latin, when came in contact with Sanskrit, remarked that Sanskrit is more perfect than Greek, more copious than Latin and more refined than either. He said – "Sanskrit is a wonderful language". It is noteworthy that though ancient and classical, Sanskrit is still used as medium of expression by scholars throughout India and somewhere in other parts of the world e.g. America, and Germany. Sanskrit is included in the list of modern Indian Languages in the eighth schedule of the constitution of India. As per the Indian tradition Sanskrit

Language has no beginning and no ending. It is eternal. Self-born God has created it. It is divine. It is everlasting. It was first used in Vedas and thereafter it has been the means of expression in other fields. Sanskrit is an ancient and classical language of India in which ever first book of the world Rigveda was compiled. The Vedas are dated by different scholars from 6500 B.C. to 1500 B.C. Sanskrit language must have evolved to its expressive capability prior to that. It is presumed that the language used in Vedas was prevalent in the form of different dialects. It was to some extent different from the present Sanskrit. It is termed as Vedic Sanskrit. Each Veda had its book of grammar known as Pratishakhya. The Pratishakhya explained the forms of the words and other grammatical points. Later, so many schools of grammar developed. During this period a vast literature -Vedas, Brahmana-Granthas, Aranyakas, Upanishads and Vedangas had come to existence which could be termed as Vedic Literature being written in Vedic Sanskrit. Panini (500 B.C.) was a great landmark in the development of Sanskrit language. He, concising about ten grammar schools prevalent during his time, wrote the master book of grammar named Ashtadhyayi which served as beacon for the later period. Literary Sanskrit and spoken Sanskrit both followed Panini's system of language. Today the correctness of Sanskrit language is tested upon the touchstone of Panini's Ashtadhyayee. Sanskrit has been the source of later languages and literature in India. Pali and Prakrit were first to develop from Sanskrit. Pali was taken as means for exposition of Buddhistic ideas and Prakrit was used for the spread of Jain doctrines. Most of the Buddhistic literature is written in Pali and that of Jain cult in Prakrit. A vast amount of Buddhistic and Jain literature was also written in Sanskrit simultaneously. Prakrit language had different shades in different parts of India. So they were named as Paishachi, Shourseni, Magadhi, Ardha – magadhi and Maharashtri. These Prakrits were used for writing ornate poetry like Gaha Saptashati and Karpur Manjari and also in Sanskrit drama as dialogues of ladies and illiterate characters. From each type of Prakrit various Apabhramsha languages developed bearing the same name as Paishachi Apabhramsha, Shaurseni Apabhramsha and so on. Modern Indian Languages are developed from these Apabhramsha languages.

2. SCIENCE AND SANSKRIT LITERATURE

वसुधैव कुटुम्बकम् The world is a family. Sanskrit literature is vast and includes religious scripture , various forms of poetry .Such as epic and lyric, drama and narrative prose . It also includes substantial works covering secular and technical sciences and the arts. Sanskrit literature is as vast as the human life. There are four aims of human life which are called Purusharthas. They are Dharma, Artha, Kama and Moksha. Dharma stands for the duties and responsibilities of man. Artha communicates the monetary necessities, Karma stands for the human desires of all types and Moksha is freedom from birth and re-birth and worldly involvement. Any and every literature surrounds these four aims of human life. Sanskrit literature first of all presents Vedas which are the basis for Dharma. Vedas are the root of Dharma. There are four Vedas Rigveda, Yajurveda, Samveda, and Atharvaveda. Brahman granthas explain the Vedic literature and give the detailed process to perform the Yajnas. Aranyakas and Upanishads discuss the internal meaning of the Vedas and the path of renunciation – Moksha Purushartha. Pratishakhya explain the grammatical issues of the Vedas. Six Vedangas i.e. Shiksha, Vyakarana, Kalpa, Chhandas, Nirukta, and Jyotish help to understand the Vedas. As per the Indian tradition the Veda is not written by any author but in fact it is the respiration of God. Veda has been seen by the seers, the Rishis. Later it was diversified into four Samhitas by the great seer Vyasa. Some Scholars hold that the Vedas were written by different seers and they estimated the time of these writings from 6500 BC to 1500 BC. The rest of the Vedic literature might have been completed before 600 BC. The Scientific Literature covers Lexicography, Metrics, Grammar, Law, Science of Politics, Love, Philosophy and Religion, Medicine, Astronomy, Astrology and mathematics etc. Science has no single origin. Rather, scientific methods emerged gradually over the course of thousands of years, taking different forms around the world, and few details are known about the very earliest developments. Valmiki was first to write the worldly poetry; Loka – Kavya.

He wrote the Ramayana the great-epic which had the great impact on the later literature. Even today the latest poetry is written on the line of Valmiki. The Ramayana was written in 500BC. Sanskrit is humanity's oldest living language, known in the same form that existed at least 4,000 years ago. It has an extraordinarily vast literature that has directly influenced many cultures across the world. Some of its

literature is available in translation, but much remains to be explored. Over a thousand years ago, Sanskrit scientific texts and story books translated into Arabic were communicated to Europe that prepared the ground for the scientific revolution. During the last three hundred years, its influence on Europe has been more direct. Sanskrit is not only a unique language but a World Heritage. Of the time when Sanskrit originally arrived amongst the European learners, till today, it's staggering the class of linguistics. If there is any literature in the world that is mostly investigated for its structure, it's Sanskrit. There is at least one literature, Sanskrit, which for the continuation of nearly 1,000 years, was an active expressed language with significant literature of its own. Besides works of belletristic value, there was a long reflective and conventional folklore that has continued to endure with undiminished strength until the present century. Their morphophonemics experts devised a method for paraphrasing Sanskrit in a manner that is indistinguishable not only in essence but in the form with current work in Artificial Intelligence. So, from a viewpoint, we are not solely learning words; we are learning science as a whole. What does a specialist want? Who has the acquaintance? When a specialist looks at the water when normal people look at water, what is the differentiation between them? So, all the essences which a specialist can find out, ordinarily people are not able to do that. So, the job of Rishi Munis was, they conceived this literature in such a way that it has flawless science in it. The standard period of Sanskrit composition dates to the Gupta period and the consecutive pre-Islamic middle kingdoms of India. Forging approximately the 3rd to 8th centuries CE. Hindu Puranas, a style of Indian literature that includes fables and myths, fall into the conclusion of Classical Sanskrit. Drama, as a differentiated class of Sanskrit literature, appeared in the final centuries BCE, led partly by Vedic mythology. Famous Sanskrit screenwriters include Shudraka, Bhasa, Asvaghosa, and Kalidasa; their various plays are still accessible, although little is known about the authors themselves. Kalidasa's play, *Abhijnanasakuntalam*, is usually regarded as a treasure

3. THE SANSKRIT OF SCIENCE

Science is going through a crisis. It has turned out that gravitation cannot fully explain the observed motion of stars in galaxies and, therefore, invisible "dark matter" has been postulated; likewise, current theory cannot explain why the expansion of the universe is accelerating, and so "dark energy" has been proposed as explanation. No evidence exists either for dark matter and dark energy that together are believed to constitute 95% of the observable universe, with another 4.5% being intergalactic dust that is left out of equations that model the cosmos. How can we claim that we are near understanding reality if our theories are validated by only 0.5% of the observable universe? We may have to question assumptions about the very nature of space and time to move ahead. This may also allow us to see interactions in the atomic world in a new light. चरन्मार्गान्विजानाति The traveler finds the path. It appears further breakthrough in the field may emerge by giving a more significant position to the observer. The Sanskrit scientific tradition considers the ideas of space and time to be dependent on observations and it appears to have insights that will help in further research. Astronomy was called 'Nakshatravidya', 'Jyotirvijnyanam' or Jyotish in ancient India. The word 'Nakshatradrashta' is used for an Astronomer in Shuklayajurveda (30/10) and 'Nakshatravidya' for Astronomy in Chhandogya Upanishad (7/1/2). 'Ganita' the term used in Sanskrit for mathematics; is derived from the root 'gana', which means to count or to enumerate. Mathematics in India has been cultivated in connection with Astronomy. Like the other streams of knowledge, the early references of mathematics, are also found in the vedic literature. The word 'Rashividya' is used for mathematics in Chhandogya Upanishad (7.1.2). Some hymns of Shuklayajurveda reveal the knowledge of odd numbers and tables (18/24,25). The Brahmana texts like ; 'ekaya svaha, dvabhyam svaha, tribhyah svaha' reflect the vedic concept of arithmetical progressions. In Pingal sutra there is a discourse on the calculation of squares and square roots. Chemistry is the branch of science, which deals with the study of elements of organic as well as inorganic nature. In India the knowledge of chemistry was current since the Vedic era, praising Agni (The fire), as we see in the first sukta of the Rigveda. It is believed that the basic idea of smelting reached India since the Rigvedic period. Metallurgy, one of the main branches of chemistry has remained as the central key to all the civilizations from the Bronze Age to the Iron Age. Architecture the Vastu vidya or Sthapatya is one of the basic Arts of ancient India. The word 'vastu' is derived from 'vas' to 'reside'. Thus 'vastu' denotes all sorts of buildings – religious, residential and military like – Prasada, mandapa, sabha, shala, prapa, ranga,

skandhawara and fort. It also implies town planning, planning of commercial cities, laying out gardens, making roads, bridges, dams, tanks etc. Thus architecture includes the complete science of Civil Engineering. Indian the medical science is popularly known as 'Ayurveda' which means 'the Veda for lengthening of the span of life'. The beginning of Medical Science goes back to the age of Vedas. The Vedic Indians, who wanted to live for hundred full years with prosperity and good health, developed a holistic approach in the field of healthcare and medical systems, which emphasizes the physical, mental, intellectual and spiritual aspects of a human being.

4. A SCIENTIFIC PERSPECTIVE-SANSKRIT MANTRAS

Sanskrit is not just a manmade devised historical language. It holds all the potentials of cosmic sound. It links the human brain and mind to the vibratory field of Cosmic Intelligence that guides the universe as a whole. Sanskrit is a human emulation of cosmic sound that links the human mind to the Cosmic Mind. Just as we can link with the internet and download information via information technology, we can use Sanskrit in the meditative mind to link with Cosmic Intelligence and access its deeper knowledge and wisdom. Chanting of Sanskrit mantras improves cognitive function. "MRI scans show increase in the size of brain regions associated with both short and long-term memory." It is conceivable that this also protects against old-age diseases such as Alzheimer's. Now it is possible that chanting in any language offers benefits, but Sanskrit is unique since it has the richest system of analytical categories going down to roots and combinations of sounds. Furthermore, Sanskrit chanting is musical, and it is known that "children who undergo musical training have better verbal memory, second language pronunciation accuracy, reading ability and executive functions. Learning to play an instrument as a child may even predict academic performance and IQ in young adulthood." The mantras have a resonance that seems to open the doors of intuition and the chants are inspirational. Apart from the literature and the sciences, Sanskrit has material on the inner sciences and on wisdom. Sanskrit sūtras facilitate reflection and offer many ways of embracing past wisdom making it easy to deal with the inevitably bitter aspects of the life experience, and to maintain calm and equanimity. Contrary to any simplistic ideology, life at a deeper level is about experience that has opposites woven into it. Paradox is the deepest intuition परोक्षप्रिया इव हि देवाः The gods love what is paradoxical. Sanskrit knowledge is universal and encourages each individual to see goodness in others. We can see any number of nuggets of wisdom in the Upanishads, the Gītā, and the Sūtras. There is nothing about harming anyone. All beings have the same ātman, and one seeks happiness for all. लोकाः समस्ताः सुखिनो भवन्तु May all the worlds attain happiness. The eyes see only what the mind is prepared to comprehend. The technology-induced isolation fostered by modern life dulls the mind. The chains of habit have become so strong that the only way to break them is through the magic of wisdom. Sanskrit leads us to an enchanted garden, and as we breathe and feel its beauty, the scales that cover our eyes fall off.

5. SANSKRIT IS THE MOST SCIENTIFIC LANGUAGE

Sanskrit pursues its scientific heritage to Proto-Indo-Iranian and eventually to Proto-Indo-European styles, meaning that it can be discovered historically back to the personalities who articulated Indo-Iranian, also called the Aryan Semantics, as well as the Indo-European languages, a family of a diverse hundred related pieces of literature and dialects. Today, an estimate of 46% of humans utter some form of Indo-European language. The common widely-spoken Indo-European languages are English, Hindi, Bengali, Punjabi, Spanish, Portuguese, and Russian, each with over 100 million mouthpieces. Vedic Sanskrit is a literature of the Vedas, the most classical Hindu scripts, compiled. The Vedas comprise carols, spells called Samhitas, and metaphysical and philosophical direction for clergymen of the Vedic denomination. Believed to be immediate signs to sages amid the early Aryan people of India, the four chief acquisitions are the Rig Veda, Sam Veda, Yajur Veda, and Atharva Veda. Vedic Sanskrit existed protected as a part of the Vedic chanting custom, predating alphabetic scenario in India by many ages. Contemporary savants examine the metrical hymns of the Rigveda Samhita, the most antique layer of text in the Vedas, to have been constituted by many authors over numerous centuries of oral tradition.

CONCLUSION -:

“Sanskrit has moulded the minds of our people to the extent to which they themselves are not conscious. Sanskrit literature is national in one sense, but its purpose has been universal. That was why it commanded the attention of people who were not followers of a particular culture.”- Dr. S. Radhakrishnan. विज्ञानस्य जन संहारक रूपं व्यक्ता अन्यत् सर्व उपकारक रूप अस्ति। वयं विज्ञानस्य चमत्कारैः सदा उपकृताः भवामः। Sanskrit is not as difficult to learn as many people think it is. For those speaking English it is much easier to learn than Chinese or even European languages like Russian or French. But going to its depths is another matter. Yet even beginners in Sanskrit can learn various mantras and terminology that will greatly expand our understanding of ourselves, other creatures and the entire universe. we should learn the mantric language of Sanskrit and its cosmic implications, not simply at an academic level but at a level of meditation. “Without the study of Sanskrit one cannot become a true Indian and a true learned man.”- Mahatma Gandhi. अनुलोम-गतिस् नौ-स्थस् पश्यति अचलम् विलोम-गम् यद्-वत् ।अचलानि भानि तद्-वत् सम-पश्चिम-गानि लङ्कायाम् ॥ (आर्यभटीय गोलपाद ९)

जैसे एक नाव में बैठा आदमी आगे बढ़ते हुए स्थिर वस्तुओं को पीछे की दिशा में जाते देखा है, बिल्कुल उसी तरह श्रीलंका में (अर्थात् भूमध्य रेखा पर) लोगों द्वारा स्थिर तारों को ठीक पश्चिम में जाते हुए देखा जाता है। In the modern society, one hears multiple opinions about the Vedic tradition of Sanskrit Chanting called Mantras. Opinions vary the whole spectrum from people indicating that its superstition, Irrational on one end, to people firmly having experienced benefits and spends hours practicing the same. It is a specific sound vibration that helps our mind to vibrate at a certain frequency. And, when our mind reaches that frequency, the ‘law’ of that object, or ‘essence’ of that object, is revealed. Thus mantras are very powerful vibrations and must be chanted properly. When chanted properly, they are extremely effective. Recent scientific experiments show that Sanskrit Chanting increased brain cells in cognitive areas of the brain.

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