

## INDIAN KNOWLEDGE SYSTEM

**Arun Kumar Upadhyay, IPS (Retd)**

Bhubaneswar, Orissa, India

Email: arunupadhyay30@yahoo.in.



**Three Star Paper**

### Abstract

There are 3 questions or doubts on this topic - (1) What is a knowledge system ?; (2) Whether Indian knowledge system is different ?; (3) Was there advanced civilization in past? Was it Indian, worldwide or by aliens ?

### 1. Knowledge System

Getting information: There are 2 limitations of knowing objects around us-Knowledge (Jñāna) is infinite. We can know about any object only when we are in its influence limit (Sāma), i.e. some information reaches us by light, sound, heat, taste, smell which can be detected by 5 sense organs. There are 2 extra-sensory perceptions also. When we are able to sense an object, then also we cannot know it exactly. There are many limitations in knowing and expressing-(a) Complete information is not coming, (b) The object is changing by sending information or by our attempt to study it, (c) We are unable to perceive fully due to limitation of organs or instruments-there is always some error, (d) Perception is modified by our bias, limitation to analyze, lack of proper words in language or our ability to express it.

This is summarized in Gītā (18/18)- ज्ञानं ज्ञेयं परिज्ञाता त्रिविधा कर्मचोदना (Jñānam jñeyam parijñātā trividhā karma-chodanā)= knowledge, knowable, approximate or round about knowledge-these are 3 stages of efforts to know.

Jain philosophy grades in similar way-(1) Kevala jñāna (infinite knowledge in universe), (2) Śruti jñāna (one time knowledge though 5 senses + 2 extra-sensory)-Veda is that type of knowledge, so it is called Śruti. It does not mean that Vedas were remembered only by hearing. Without written record, it is not possible to compile observations of thousand sages from different parts of world in different eras. (3) Avadhi jñāna (knowledge over a period). For knowing the process of change and new situation, we need to update our knowledge regularly. This is called Purāṇa (Purā + navati= old becomes new). Purāṇa texts describe creation and development of universe (cosmology), changes on earth-geology, climate etc, political history, geography and many other subjects. Knowledge of all subjects has to be updated regularly.

### 2. Āgama (source literature)

These are coming from very ancient times. Generally, their start is assumed to be from Svāyambhuva Manu, called Adam in Tora & Bible. His period is dated 29102 BC as per Brahmāṇḍa purāṇa (1/2/29/19) etc. Starting with him, there were 28 Vyāsa till Mahābhārata (3138 BC), who compiled Mantras or sayings of different sages. List of 28 Vyāsas are in many purāṇas. There were 2 glacial floods, one before Svāyambhuva Manu (in 31,000 BC) and another after Vaivasvata Yama (Jamshed of Zend-Avesta) after 11,000 BC. These tally with modern assessments of flood eras.

Svāyambhuva Manu was main human Brahmā from whom Vedic civilization started. 7 others have been mentioned in Mahābhārata (12/349-50). One was in Puṣkara dvīpa (south America) as indicated in R̥gveda (6/16/13-14), Matsya purāṇa (123/39) and many other purāṇas. His place is indicated near Uruguay (called Urugāya at 30 places in Vedas, eg. R̥gveda (6/28/4), Atharva veda (4/21/4) etc. Like his face in 4 directions, there were highways in 4 directions-That could be Cuzco in Peru.

In beginning, Brahmā (Svāyambhuva Manu) was perplexed how to start civilization, which was destroyed due to glacial floods in 31,000 BC. Purāṇas mention that mining started in around 57,000 BC and many old mines of that period have been found. Then Brahmā referred to purāṇa from which he learnt about civilization of past and proceeded in similar way. He created Vedas as foundation of all sciences (Muṇḍaka upaniṣad, 1/1/1-5).

Later on, Bharadvāja divided single veda into 4 vedas (R̥k, Yaju, Sāma, Atharva) and 6 organs-śikṣā (language teaching), kalpa (practical work), nirukta (technical meanings & definitions), vyākaraṇa (grammar), chhanda (measures of words, time, space), jyotiṣa (astronomy). Tantra is practical use of knowledge in many systems.

### 3. Ancient sciences

Ancient civilization was advanced and worldwide. There are so many evidences that it cannot be denied. There are 2 attempts to suppress it – Ancient civilizations are called new by manipulation. Another way is to give all credit to aliens-Notable authors are-Eric Von Daniken, Charles Berlitz. Then there is regional pride of becoming pioneer. Almost complete original population of Americas was wiped out by invaders from Europe. Remaining few were converted to Christianity. Even now, present migrants to Americas cannot believe that civilization could have started there. Their assumption is that persons from Asia and Europe had migrated to Americas by land bridge between Siberia-Alaska formed during ice age. For that, they would have to cross more than 12,000 kms of ice-sheet in Siberia-Canada. This is more difficult than crossing Antarctica which has not been done in modern times. Why the whole population will take such a trouble without reason, when death was sure much before half way? Now the assumption has been further extended to declare origin of civilization from Africa. From there people crossed Africa, Asia, and Canada, then entered south America, covering circumference of earth.

#### Evidence of ancient science

Lokas: Indian Purāṇas mention 7 lokas (successive bigger space formations). These were called 7 heavens in Tora-Bible, or 7 skies in Koran. This can be stated only when sizes of space structures are known. Otherwise there are only 2 lokas-earth, sky. This also proves worldwide knowledge. In 2000 AD, my article about ancient measures of space was published in research journal of Rashtriya Sanskrit Academy, Melkote. That gave 3 measures of solar system which were not known in modern astronomy then. Measure of solar system is not known even now. Actually, there is no boundary wall-it is a matter of definition. Till 1974, solar wind (motion of charged particles from sun) was known to be reaching till earth. In 1975, it was known to reach Mars orbit by mariner spacecraft. Still, on basis of ancient texts, I wrote that it reaches Uranus orbit which was detected in 2007 by Cassini probe of NASA. Another estimate was of baby planets (Bālahkilya)-there were 60,000 such objects of above 135 km diameter at average distance of 60 AU. In 2008, NASA estimated 70,000 small planets of above 100 km diameter at distance of 48-65 AU. It included bodies of 100-135 km size also, so the number was more. After that, Pluto was removed from list of planets.

Measurement Of Worlds In Veda Tattvavidyā 2000 : Arun Kumar Upadhyay : Free Download, Borrow, and Streaming : Internet Archive; (99+) Vedic concepts and measures for modern research

#### Cardinal points on earth

Measures of space can be done only if survey of earth itself is complete. Quadrant points on earth were-

- (1) Brahmā system (29102 BC) in purāṇas.
- (2) Vaivasvata Manu system (13902 BC) in Sūrya-siddhānta by Vivasvān (Sun).

Ref. East (+90°) West (-90°) Opposite (+180°, or-)

Amarāvātī; Sukhā; Sanyamanī; Vibhāvātī

(Indra); (Varuṇa); (Yama); (Soma)

Ujjain (Lankā); Yamakoṭi pattan; Romaka pattana; Siddhapura

(Bhārata); (Ketumāla); (Bhadrāśva); (Uttara-Kuru)

Lankā was chosen as place of prime meridian as it was between poles (on equator, near present Maldives) and also mid-point of ocean (between east coast of Africa and west coast of Indonesia)-Āryabhaṭīya (2/14). Āryabhaṭa tells that north pole was in water and south pole on land. He was quoting ancient text at time of Svāyambhuva Manu; he himself had never gone to poles. These surveys were possible only by going there and accurate measure of latitude and longitude. In modern era, position of south and north pole in water/land were ascertained only in 1909 and 1985.

#### Calculation of eclipses

In world conference of International Astronomical Union, President Ambertsauyman (meaning astronomer in Sanskrit) of USSR, told that it has become fashionable to underestimate the achievements of ancients. While people in India and Mexico could calculate solar eclipse 12,000 and 5,000 years ago, it was impossible for 200 top astronomers present in conference. Equations of elliptical orbits are known, but there is no method for their exact solution. For eclipse calculation, 3 such orbits are calculated which are inclined to each other.

#### Ancient mines

Even now it is matter of chance only that mines are found. Most mines of gold and silver in USA were found from information obtained from Red-Indians (native Americans). Easiest is to locate mine of iron by top soil of Murram

(Ferric oxide). From that, crude iron can be extracted by just burning with wood or charcoal. But there is no sure method to locate copper mine, nor it can be extracted from ore by simple heating with coal. This is taught in schools all over the world, but still all 'learned' historians tell that copper era was primitive followed by advanced iron age. Actually, Indian division of yugas was Satya, Tretā, Dvāpara, Kali in ratio of 4:3:2:1. Since they were in reducing order, they were translated as Golden, Silver, Copper, Iron ages by Greeks.

**Long time measures**-Indian purāṇas tell that 7th Manvantara is running now. Meaning of Manvantara is not defined, but it is about 306.8 million years ( $71 \times 43,20,000$ ). Bible, Genesis starts with telling that it is now 7th day. Taking world knowledge as same, Day of Bible means Manvantara. Day is defined as axial rotation of earth. When sun, moon and earth were not created, it could only mean axial rotation of sun, which is Manvantara. Śatapatha Brāhmaṇa (12/3/2/5) explanatory text of Yajurveda tells that there are about trillion stars in galaxy (called Brahmāṇḍa). Same text (10/4/4/2) tells that number of cells is same in human brain. That is one meaning of statement that God created man after his own image (Genesis, 1/27). With that concept, idols of gods are made like human beings. Thus, Galaxy is Grand mind (Man) and its rotation is Manvantara.

**Measures of galaxy**-Āryabhaṭa and Mayan astronomy of Mexico-both belonged to start of Kali in 3102 BC and have same systems. Taking earth diameter as 1000 units, galaxy diameter will be a number of 20 digits, so they both used number system of 20 digits only. There are many other similarities as measures are not individual works, but collective knowledge of world over long period of time. But this identity was destroyed by changing Āryabhaṭa period from 360 Kali year to 3600 Kali. Similarly, Brahmagupta wrote Brāhma-sphuṭa-siddhānta in 62 BC as a manual for calculating Vikrama Samvat to start in 57 BC. Al-Biruni writes (Chronology of Ancient nations) that calculation of Hizri era in 622 AD also was like Vikrama Samvat. So, this book was translated into Arabic as Al-zabar-ul-Muqabala (origin of word Algebra). But time of this book has been shifted to 628 AD-after both Vikrama Samvat and Hizri era.

**Cosmology**-There are 23 modern theories of cosmology which are mostly mathematical equations assuming uniform homogenous space. Physical meanings or sizes of actual structures of universe are not mentioned. But, 2 verses of Viṣṇu purāṇa explain cosmic structures more accurately in details. It states that there are 3 earths lighted by sun and moon-planet earth, solar earth (gravitational zone), galaxy. For each earth, its sky is bigger in same ratio as earth is bigger than man. In earths of solar system and galaxy also, zones are named same as names of rivers, oceans, continents on earth. This is current practice also. Vedas tell 3 earth-sky pairs as 3 mothers and 3 fathers.

रविचन्द्रमसोर्यावन्मयूखैरवभास्यते । स समुद्र सरिच्छैला पृथिवी तावती स्मृता ।३।

यावत्प्रमाणा पृथिवी विस्तार परिमण्डलात् । नभस्तावत्प्रमाणं वै व्यास मण्डलतो द्विज ।४। (विष्णु पुराण, २/७/३,४)

तिस्रो मातृस्त्रीन्पितृन्बिभ्रदेक ऊर्ध्वतस्थौ नेमवग्लापयन्ति ।

मन्त्रयन्ते दिवो अमुष्य पृष्ठे विश्वमिदं वाचमविश्वमिन्वाम् ॥ (ऋग्वेद, १/१६४/१०)

तिस्रो भूमीर्धारयन् त्रीरुत द्यून्त्रीणि व्रता विदधे अन्तरेषाम् ।

ऋतेनादित्या महि वो महित्वं तदर्यमन् वरुण मित्र चारु ॥ (ऋग्वेद, २/२७/८)

Intermediate spaces (Vrata or Antarikṣa) between earth-sky pairs are almost vacant and are similar to the original source, so they are called Āditya (Ādi = beginning). Space between galaxies is Aryamā, between stars of galaxy is Varuṇa, and between planets of solar system is Mitra.

Thus, starting with man-earth, solar system, galaxy and universe are successively bigger by 10 millions. This is correct scale, but no modern cosmology theory mentions it. Ancient cosmology gives scale of micro-worlds also. Starting with man, there are successively smaller in ratio of 100 thousands-Man, cell (kalila), atom, nucleus (kuṇḍalini), particles of 3 types (chara = Lepton, sthāṇu = baryon, anupūrva = link mesons), Deva-asura (creative and dormant energies), pitara (parent, prototype-quark?), Ṛṣi (Rassī in Hindi, string). Thus, string will be of 10 power (-35) meters which is now called Planck's length in quantum mechanics. The time taken by light to traverse this distance is 10 power (-43) seconds, called Paramāṇu of Kāla = time (Bhāgavata purāṇa, 3/11/4). This is now called Planck's time and popular science book 'A Brief History of Time' by Stephen Hawkins starts with this time unit only.

My commentary on Puruṣa-sūkta in 2006 explained 3 stages of creation. 16 verses of this sūkta are used for daily vedic worship. Here, Puruṣa, does not mean a man-it is whole universe as a conscious being. Complete created universe is only 1/4 part of abstract Pūruṣa. Since it is 4 times universe, it is written with long vowel 'Pū'. In created universe also, visible planets, stars, galaxies are 'Virāt' (rājate = bright, seen). Its foundation is almost vacant space. It is again 3 times bigger, so it is called 'Adhi-pūruṣa' with long vowel 'Pū'. In modern astronomy, it was found 15 years later that dark matter is 76%, matter in vacant space is 19% and visible objects only 5%.

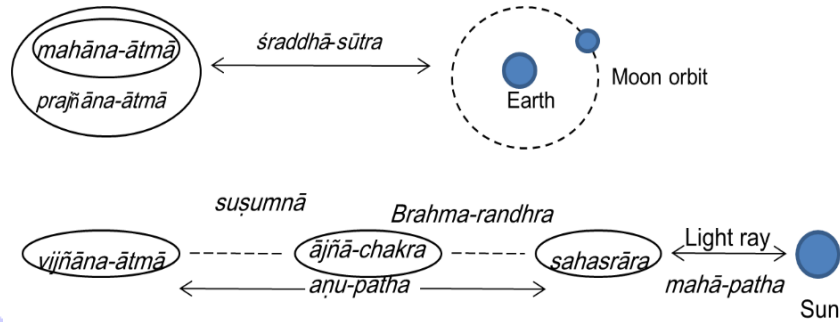
#### 4. Vedic Foundation

Veda is not a subject of study in itself like physics, chemistry, math, geography etc. But it has been stated as foundation of all knowledge (sarva-vidyā-pratiṣṭhā) in Muṇḍaka upaniṣad (1/1/1). Gītā (1-4) explains that veda explains world by 2 triples:

1. Adhidaiva- Cosmic system.
2. Adhibhūta-Physical system- world on earth seen around us.
3. Adhyātma-Human body, which is image of cosmos.

Part of this is called Anthropic theory, a modern concept. Since earth and man are created within space, they have to be similar to space around us. Two examples are given: (i) Human eye sees only that part of light spectrum which passes through atmosphere; (ii) Human blood and plasma liquid has same ratio of salts which is found in sea water. Vedas explain this link in great detail. Human body is static image of world in many senses. One example is given above-number of particles in galaxy (stars) is of same order as number of particles (cells, neurons) in human mind.

Dynamic relation of man is with sun at speed of light which goes and returns 3 times in 1 muhūrta = 48 minutes (Rgveda, 3/53/8). That is modified by influence of planets till Saturn.



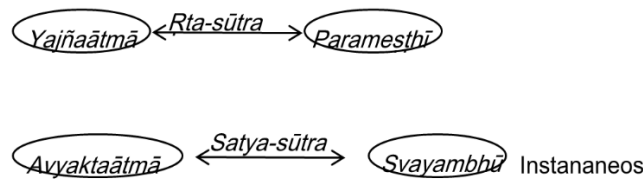
Moon controls mind (Prajñāna ātmā). In English also, lunatic means deranged mind.

Material within moon orbit, has created gross particles of mind-that is Mahāna-ātmā.

Vijñāna-ātmā is intellect. Its link goes till crown of head then joins highway till sun.

(Ref. Yajurveda, 7/42, Bṛhadāraṇyaka upaniṣad, 4/4/8-9, Chhāndogya upaniṣad, 8/6/1, 2, 5, Brahma sūtra, 4/2/17-20, Jaiminīya brāhmaṇa upaniṣad, 1/4/4/9 as explanation of Rgveda, 3/53/8)

Mind link-This is with speed of Mind or mana, called Manojava.



The first link maintains body functions, second link is link of ātmā-paramātmā. Its center is sun. The link of sun till earth-moon has been called Suṣumnā. That is modified by influence of other planets whose names and nature is given in Yajurveda (15/15-19, 17/58, 18/40) and also explained in Kūrma purāṇa, (part 1, 41/2-8), Matsya purāṇa (128/29-33), Vāyu purāṇa (53/44-50), Viṣṇu, Brahmāṇḍa (1/2/2465-72) etc. The links with planets are-

Planet	Mercury	Venus	Earth-moon	Mars	Jupiter	Saturn	Nakṣatra
Nāḍī	Viśvakarmā	Viśvavyachā	Suṣumnā,	Sanyadvasu	Arvāgvasu	Svara	Harikeśa
		(Viśvaśravā)					

Directions-South	West	----	North	Up	-----	East
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(Ref. Yajurveda, 15/15-19, 17/58, 18/40, Kūrma purāṇa, 1/41/2-8, Matsya purāṇa, 128/29-33, Brahmāṇḍa purāṇa, 1/2/24/65-73 etc.)

Brahma- whole world as a conscious being, it exists in every particle. Karma-Motion: Visible motion is white (śukla), inner motion is black (kṛṣṇa). This is basis of white and black yajurveda classification.

(3) Yajña-creative work in cycle (Gītā, 3/10-16).



## 5. Knowledge Structure

**Method**-Any subject is studied by 2 methods (Muṇḍaka upaniṣad, 1/1/3)-

Parā vidyā or Vidyā- unification, harmony.

Aparā vidyā or Avidyā-classification, distinction. Definition of science is similar-classified knowledge.

Vidyā and avidyā-both are necessary (Īśāvāsya upaniṣad, 9-11, forms chapter 40 of yajurveda).

Avidyā also means lack of knowledge, for which 5 parts are given in yoga-sūtra (2/3). These are also stages of study of any science-

- (a) Avidyā- Formation of classes.
- (b) Asmitā-Identification and description of each class.
- (c) Rāga- Similarity in components of a class.
- (d) Dveṣa- Difference with other classes.
- (e) Abhiniveśa-Fixation of a theory or rule, its test, revision.

### Types of knowledge

One aspect is countable, which is called Gaṇeśa. Gaṇa = particle, single object. Gaṇa = group of objects. Gaṇanā = counting, calculation. Study of discrete objects is symbolized by Gaṇeśa. Gaṇapati Atharva-śīrṣa (appendix of Atharva veda) tells-Tvameva pratyakṣam Brahmā asi = you are visible form of Brahma (these can be counted),

Non countable are space points, liquid (rasa) etc-symbolized by Sarasvatī (sa-rasa-vatī).

English grammar divides noun in 2 groups-countable, abstract.

Mathematics has 2 broad divisions-discrete theory, field theory.

Computer of 2 types-Digital, analog. In 1981, in a talk with prof. Abdul Salam after he got Nobel Prize in Physics, he felt that his theory was outcome of field theory in Indian philosophy. Opposite to that, quantum theory was discrete and similar to thought in Torah-Bible. So, most pioneers in quantum theory were Jews. Similar view was given in 'Conceptual development of Quantum Mechanics' - by Max Jammer. However Albert Einstein was never convinced by Quantum mechanics. I countered Abdul Salam and gave examples of both digital & field theories in Indian philosophy. He commented in an article that Digital computer is like Gaṇeśa, so its controller should be called mouse-vehicle of Gaṇeśa. Long after that, mouse of computer was named.

**Harmony**-Brahma-sūtra, first 4 sūtras tell that texts should be studied with harmony. Generally, we tend to support our view or bias and oppose others. We should find common or similar points, which may vary slightly due to error of language or expression. Each theory or rule is correct in some context. This is called range and domain in mathematics in which a formula or function is defined. Sometimes, 2 opposite pairs are simultaneously correct. Examples are given in chapter 8 of Sankara-Digvijaya of Madhavacharya. At residence of Mandan Mishra, even his parrots had learnt topics of usual debates-

- (a) Whether world is transient or eternal,
- (b) Whether action gives the result or it is given by God,
- (3) Whether Vedas are self explanatory or to be proved by other texts.

Both opposing thoughts are correct, so there is debate. In usual debate competition also, 2 groups are formed to support opposite views.

In modern physics, quantum Mechanics and Relativity-both are contradictory to each other in some respects and are against common experience. So, there is mental block in accepting the results. The new views do not mean that classical physics is wrong-that is still used in all engineering & technology.

**Continuity**-Continuity of thought and civilization is called Sanātana (eternal) which is specialty of Indian knowledge. Though, the knowledge and civilization was worldwide, it was preserved in India, because we accept opposing views also. There is a mentality that everything before my Prophet was wrong and new beginning has been made.

In Vedic thought, these are called (i) Diti (cut)-followers of my God are correct, others are wrong, or everything before my Prophet was wrong. (ii) Aditi-Continuity.

One reason is given in Zend-Avesta and others is that India was protected from ravage of glacial ice or flood ages due to protection of Himalayas. Other reason is that all forest types from equator to polar circle are found in India.

Some examples are-

(a) <http://www.angelfire.com/nt/Gilgamesh/classic.html>-

Berosus ridiculed the "Greek historians" who had so distorted the history of his country. He knew, for example, that it was not Semiramis who founded the city of Babylon, but he was himself the prisoner of his own environment and cannot have known more about the history of his land than was known in Babylonia itself in the 4th century BC. (1/5) Nabonassar collected together and destroyed the records of the kings before him in order that the list of the Chaldaean kings might begin with him.

(b) Hipparchus, Euclid and Ptolemy had gone to Alexandria for study which is well recorded in their books. No Indian, Egyptian or Sumerian has written that they had gone to Greece. Father of Greek science Pythagoras had studied in India as claimed by Apollonius- <http://www.sacred-texts.com/cla/aot/aot/aot04.htm>

(c) Al-Biruni-Chronology of Ancient Nations, page 44-

However, enemies are always eager to revile the patronage of people, to detract from their reputation, and to attack their deeds and merits, in same way as friends and partisans are eager to embellish that which is ugly, to cover up the weak parts, to proclaim publicly that which is noble, and to refer everything to great virtues, as the poet describes them in these words-"The eye of benevolence is blind to every fault,

(d) Sir William Jones, 1784 (from Asiatic Researches Vol. 1. Published 1979, pages 234-235. First published 1788)-

"As to the general extension of our pure faith in Hindustan there are at present many sad obstacles to it... We may assure ourselves, that... Hindus will never be converted by any mission from the church of Rome, or from any other church; and the only human mode, perhaps, of causing so great a revolution, will be to translate into Sanscrit... such chapters of the Prophets, particularly of ISAIAH, as are indisputably evangelical, together with one of the gospels, and a plain prefatory discourse, containing full evidence of the very distant ages."

## 6. Apauruṣeya Veda

Apauruṣeya means that it was not created by man. It does not mean that there was a person called God in sky who printed Veda or other 'Book' and sent to earth. Vedas are Apauruṣeya in 4 senses-

(1) **Free of personal bias**-It is perceived by a detached person, free of fear of favor and equal to all. Realization in Samādhi stage. (Taittirīya Āraṇyaka, 2/9/1, Taittirīya Brāhmaṇa, 2/8/8/14, Nyāya sūtra, 1/1/7)

(2) **Average**-Any personal bias, error of perception, expression in words, change in language, word meanings or context is removed by average of mantras of many Ṛṣis over long periods. (Mīmāṃsā-sūtras, 1/1/27-32)

(3) **Extra-sensory**-Normal perception is by 5 sense organs which receive information by 5 Prāṇas. But there are 2 more prāṇas, beyond normal perception, called Asat-prāṇas-Ṛṣi & Pitar (Parorajā) prāṇas. Thus, Prāṇas are stated to be generally 5 but sometimes 7.

(4) **Unification of 3 worlds**-Vedas are true simultaneously in 3 world systems image of each other-(a) Cosmic = ādhidaivika, (b) Physical on earth = ādhibhautika, (c) Within human body = ādhyātmika. This unification or link between 3 worlds is logical, but has not been perceived by experiments of science. Possibly, it is necessary for independent existence of 3 worlds that they remain separated by Māyā so much that their link cannot be seen.

## 7. Unification of Knowledge

### Philosophy & scripts

Space is 10 dimensional in vedic concept. Gross levels starting with man are 5 and inner ratio is 10 power 7. Lower worlds are 7 with inner ratio of 10 power 5. Thus, there is cross symmetry with base of 10, which fits 10 dimensions.

First 5 dimensions describe mechanical world explained by physics-

1. line, 2. surface, 3. volume or space, 4. matter. 5. time.

Next 5 dimensions are levels of Chetanā, loosely translated as consciousness. Point space is Chit, its design or combination is Chiti (City is largest man made design). Agency which can do Chiti is Chetanā-6. Puruṣa-which can create a pattern or design, 7. Ṛṣi (string) = link between 2 or more objects, 8. Nāga or Vṛtra-boundary surface

of a body, 9. Randhra or Nanda-hole or deficit which causes change and creation, 10. Rasa or Ānanda = Uniform source of world.

Complete description of world is from 5 to 10 dimensions. So there are 6 Darśana (loosely translated as philosophy) and 6 Darśa vāk (visible sound, script). Thus, there were 6 sets of scripts and many languages though words were named by Svāyambhuva Manu (Adam). Script is 2 dimensional picture, so, number of elements or letters in parallel script will be square of dimension number.

5<sup>2</sup>-25 elements of Sāṅkhya, 25 letters in Avakahaḍā, Roman (X is extra).

6<sup>2</sup>-36 elements in Śaiva-36 letters in Hebrew, Latin, Russian, Gurumukhi.

7<sup>2</sup>-49 Maruts-49 letters of Devanāgarī.

8<sup>2</sup>-64 Kalā-64 letters of Brāhmī.

(8+9)<sup>2</sup>= 289 letter of Vijnāna-vāk.

10<sup>3</sup> to 10<sup>4</sup>-letter in script beyond Vyoma (Trivṣṭap = Tibet) in China, Japan.

गौरीर्मिमाय सलिलानि तक्षति एकपदी द्विपदी सा चतुष्पदी। अष्टापदी नवपदी बभूवुषी सहस्राक्षरा परमे व्योमन्॥

(ऋक् १/१६४/४१, अथर्व १/१०/२१, तैत्तिरीय ब्राह्मण २/४/६/११)

Abstract thought within mind (or abstract source of world) when expressed as word or world was divided into 1, 2, 4, 8, 9 and 1000 parts in Vyoma (sky).

### Other subjects

There are 3 world systems-space, earth, man. There are 7 lokas in each of them. So, all knowledge should be classified into 3x7 parts.

ये त्रिषप्ताः परियन्ति विश्वाः (अथर्व, १/१/१)= 3x7 pervade all worlds.

सप्तास्यासन् परिधयस्त्रिः सप्त समिधः कृताः। (पुरुष सूक्त, यजुर्वेद, ३१/१५)= There were 7 boundaries and 3x7 materials. Some aspects of 3x7 classes- Āyurveda is based on 3 natures of man-Kapha, Vāta, Pitta and body is formed from 7 Dhātu (blood, skin etc.). Political theory is not based on 4 elements in western thought-Land, people, government, sovereignty. In Indian thought, sovereignty is not absolute-it has 8 grades. Without 3 other elements of state, political theory cannot be complete- Durga (fort)-9 types or natural and artificial protection. Koṣa-Revenue to run the state-not specifying it is source of corruption. Amātya, Purohita –Religion, constitutional theory.

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### About the Author



**Arun Kumar Upadhyay IPS (Retd)**, M.Sc. (Physics-1974), Forestry (1976), Math (1981) was born on 30-8-1952, at Ara, Bihar. He derived Primary Sanskrit education from his father. At age of 8, started school education in class 6. He received degrees M.Sc (Physics) 1974, AIFC (M.Sc. Forestry), 1976, M.Sc. (Math), 1981. He has been specializing in ancient and modern astronomy from 1985. He wrote a **Commentary on Siddhanta Darpana in 1998**, Measure of worlds (Melkote), 2000. **He has authored 23 books** on astronomy, linguistics, Vedic Science, Geography of Puranas, etc. He has **published about 200 research papers**. He was decorated with IFS (Punjab) during 1974-76 and IPS (Odisha), during 1976-2012. His contribution to Indian Knowledge system is unimaginable. There are 3 questions or doubts on this topic: (1) What is a knowledge system? (2) Whether Indian knowledge system is different from others? (3) Was there advanced civilization in past? Was it Indian, worldwide or by aliens? **1. Knowledge system**-(1) Getting information-There are 2 limitations of knowing objects around us-Knowledge (Jñāna) is infinite. We can know about any object only when we are in its influence limit (Sāma), i.e. some information reaches us by light, sound, heat, taste, smell which can be detected by 5 sense organs. There are 2 extra-sensory perceptions also. When we are able to sense an object, then also we cannot know it exactly. There are many limitations in knowing and expressing-(a) Complete information is not coming, (b) The object is changing by sending information or by our attempt to study it, (c) We are unable to perceive fully due to limitation of organs or instruments-there is always some error, (d) Perception is modified by our bias, limitation to analyze, lack of proper words in language or our ability to express them. **2. Āgama** (source literature)-These are coming from very ancient times. Generally, their start is assumed to be from Svāyambhuva Manu, called Adam in Tora & Bible. His period is dated 29102 BC as per Brahmāṇḍa purāṇa (1/2/29/19) etc. Starting with him, there were 28 Vyāsa till Mahābhārata (3138 BC), who compiled Mantras or sayings of different sages. List of 28 Vyāsas are in many purāṇas. There were 2 glacial floods, one before Svāyambhuva Manu (in 31,000 BC) and another after Vaivasvata Yama (Jamshed of Zend-Avesta) after



11,000 BC. These tally with modern assessments of flood eras. **3. Ancient sciences-** Ancient civilization was advanced and worldwide. There are so many evidences that it cannot be denied. There are 2 attempts to suppress it – Ancient civilizations are called new by manipulation. Another way is to give all credit to aliens-Notable authors are-Eric Von Daniken, Charles Berlitz.



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Space, Time and Consciousness are the fundamental entities that form a triple  $\langle S, T, C \rangle$  and are used in defining 'Observables'. 'Being' is realized as the presence of this triple and 'Not Being' is realized as the absence of this triple. The triple  $\langle S, T, C \rangle$  could be formally understood in a deductive logical framework. 'Being' is interpreted as a physical or philosophical entity. Philosophical entity is a characteristic wholesome of 'Consciousness', which is a projected form of the 'Universal Consciousness'. Consciousness is the seamless blend of 'Knowledge' and 'Energy'. Physical entity is a characteristic wholesome of the triple  $\langle S, T, C \rangle$  and is a composition of five basic elements, namely, (i) Space, (ii) Air (gaseous form), (iii) Fire (heat form), (iv) Water (liquid form) and (v) Earth (solid form). By the term 'Life' I understand 'Being' being perceived as a segmented world line of Einstein-Minkowski space by a physical entity through an observation window. More on this aspect would be outlined in the next section. Life form, on the other hand, is an ensemble of programs stored in the chromosomes as codon sequences arranged in the gene coding regions. Each life form is a unique set of codon sequences arranged in the embryo and activated by the philosophical entity 'Consciousness'. This is what 'Rishis' (knowledge seekers of the Vedic age) realized and expressed in the form of codified hymns. I shall describe this concept in section 3 of this paper. The codified Vedic hymns were passed on from generations to generations, till date, in the form of 'Chanting' by a 'rote' system and not by 'Documentation' system. Documentation system may fail due to natural calamities, foreign invasion and disregard; whereas, rote system practiced by scholars belonging to various schools of thought during spiritual austerities and rituals may not fail over the time. In order to reduce of loss of knowledge due to break in the rote system, the ancient 'Rishis' packed knowledge in many number of ways in Vedic hymns. One such important method of coding knowledge is 'Discrete Levels of Tones' (DLT). These discrete levels of sonic tones are analogous to discrete logic levels of modern symbolic logic and computing. As digital data and programs are coded in binary logic levels, information was coded as DLT in Vedic hymns. More about this coding technique followed by ancient 'Rishis' and recent developments of  $(2n+1)$ -ary Discrete Logics and Algebras contributed by me and my research scholars. After having obtained abundant knowledge, the ancient 'Rishis' were able to visualize certain deities in various abstract forms and attached an audible sound called 'Mantra' to each deity. Most of such abstract forms have been cast in the physical forms of humanoids, which provides a scientific explanation of such symbolism and iconization practiced by the Vedic society. The 'Rishis' visualized a knowledge-based society of all living species in four categories, namely, (i) Brahmanas (basically scholars), (ii) Kshatriyas (basically warriors), (iii) Vaishyas (basically traders) and (iv) Shudras (basically workers). Even the ant colony could be seen to consist of four varieties of ants. A species belonging to any of these four categories realizes the 'Ultimate Truth' that one is a 'Being' as a 'Philosophical Entity' and one tries to switch over to a 'Not Being' by projecting oneself as a 'Physical Entity', since 'Not Being' status could be understood only with the help of 'Body', 'Mind' and 'Intellect'. 'Being' and 'Not Being' are the dual nature exhibited by 'Universal Consciousness'. The binary switching between these two states could be visualized to be analogous to an aperiodic free running multivibrator digital waveform. This switching action is self-regulated and it is not bound by 'Knowledge'.

E. G. Rajan