CHAPTER FOUR
ENVIRONMENTAL RELATIONSHIP TOWARDS NON-HUMANS
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The fourth chapter details about the environmental relationship had by humans with non-humans. First section discusses vagaries of plant and animal life in comparison with human life. Second section looks at panchamahayajna along with its social implications. The next section relates to panchamahabhutas.

ENVIRONMENTALISM AND NON HUMAN

The ancients had experience or Anubhava which required no specific explanation as is evident in the composition of Prthvi or Bhumı Sukta. Everything related with Earth finds mentioned in these verses\(^{217}\). Earth is called by various names such as Bhu, Bhumı, Prthvi, Vasudha, Vasundhara and Avni\(^{218}\). The earth has been created for a most important reason and is the bearer of innumerable happiness. An understanding of the qualities, actions and character of earth helps one in obtaining happiness by making good use of the same\(^{219}\).

Prthvi has been regarded as mother to all creatures as she nurtures and sustains living and non-living beings. Earth is so vital to all living things as it is the only place that man has been able to find “life” as known to exist. It is difficult to

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\(^{217}\) See Vide Pp.77-84 in this thesis.


\(^{219}\) Y.V. 1.13.44.
define what a “living thing” can be and one such definition if any, could be: ‘A living thing takes in material from outside and transforms this material into itself. Also, a living thing reproduces itself”\textsuperscript{220}.

The thoughts of Vedic sages were all pervasive as they looked not only other humans but also all beings on the earth with the “eye of friend”. This shows the bonding that needs to be cultivated between all life forms\textsuperscript{221}. Man is obligated towards the protection of plants and animals for his own survival and prosperity. This adage has become quite true in the present environmental context. It is essential for modern man to understand the ancient perspective and belief systems followed in the protection of plants, forests and trees, animals and birds. There is a basic connection of the well being of other living beings to that of human survival.

**PLANTS**

Vedas are filled with verses pointing out to the various aspects of herbs and plants indicative of the intuitive understanding had by Vedic scholars. Plants and animals existed on earth much before the advent of homo-sapiens. Plants are ‘those that grew in old times’....‘much earlier than the Gods’ and are ‘different from different places’. ‘Be glad and joyful in the plants’ ascertains the ultimate importance given to plant species\textsuperscript{222}. They were aware of the process of


\textsuperscript{221}R.V. X.103.13; Abinash Chandra Bose, \textit{Hymns from the Vedas}, Asia Publishing House, Bombay, 1966, p.11.

photosynthesis as exemplified in this statement, “The herbs and plants having union with sun rays provide congenial atmosphere for the life to survive”\(^{223}\).

Plants and trees come under the category of Sthavara (static) while animals come under Jangama (moving). Charaka who lived around 700 BC defined a living organism as having ‘\textit{sharirendriyasattvatmasamyogadharijivitam}’ meaning that a living being is one that has body, sense organs, mind and soul. Thus we can state that plants having body is self evident\(^{224}\). Plants are born by breaking open the crust of the earth (udbhija)\(^{225}\).

Agni is referred as “the spark of life in plants”\(^{226}\). Medicinal herbs contain curative powers. These plants can be ‘with flowers and without, with fruits and without’, all of which help in curing the diseases of ailing people. The plants ‘penetrate and get diffused into all limbs and joints of the sick’; thus rejuvenating the sick and making them healthy and happy\(^{227}\). Varied kind of medicinal extracts that help in well being of human and animals are processed from these herbs and plants. Thus, role of plants in maintaining the ecological health was known by the ancients.


\(^{225}\) See Vide p.35 in this thesis.


In Jaina tradition, plants and animals are not believed to have autonomous existence. They have fixed roles and characters, and undergo bondage and liberation process. They are considered to be moral symbols and judged according to the same moral standards as human beings\textsuperscript{228}. Jainas have described and classified different types of plants in various ways. Trees such as bodhi, fig, pepper, mango, plantain, tulsi, teak, tamarind among several others should not be cut or thrown away being useful to mankind. Jainas take vow to refrain oneself from avoidable actions (\textit{anarthadandavrata}) for plant protection\textsuperscript{229}.

All plants have their own characteristics. For instance, commonly observed phenomenon is the tendency of the sunflower plant to move towards light and Mimosa pudica (touch-me-not plant) has a tendency to close itself to the sense of touch. This behaviour can be either associated with genes or to plants having a mind of their own. If we accept them as having genes, then the same genes must be communicating to them to grow in a particular way, which reflects plants to have consciousness. Plants have a discriminative power of their own. Genes can explain some of the activities of life and not all of them\textsuperscript{230}.

In passing, it is necessary to discuss Dr. J. C. BOSE’s broad based view on plants. Scientific research on plant behaviour has revealed that plants are dynamic and highly sensitive organisms displaying intelligence in their ability to sense the environment and thus can accordingly adjust their morphology, physiology and phenotype to their surroundings. Dr. Bose was the foremost Indian scientist to have proved that plants have sensitive nervous system and respond to shock spasm just like animal muscle. There was a systematic study being done of matter, of both, organic or living and of inorganic or nonliving. Scientific experiments conducted by him proved that metals when subjected to mechanical, thermal, chemical and electrical stimulus always gave an output in the form of electric response, similar to the response exhibited by plants and animal tissues when they were subjected to different kind of stimulus. Thus, he found plants, animals and metals to be sensitive to external stimuli.

Dr. Bose further research on plant life demonstrated that each plant, in fact every organ of each plant to be sensitive to outside changes in the environment and he even asserted that plants resembled humans in sleep patterns. To quote him, ‘Every living organism, in order to maintain its life and growth, must be in free communion with all the forces of the Universe about it. It receives stimulus from without and gives out something from within. A healthy life of organism will
depend on these two fold activities of inflow and outflow’\(^{231}\). At a speech delivered at the Royal Institution, he states that he perceived in plants a phase of pervading unity within and for the first time he understood the great Vedic message: “They who see but one in all the changing manifestations of this universe, unto them belongs Eternal Truth – unto none else, unto none else”\(^{232}\). Intense yoga would have helped the ancient Rshis in proclaiming this statement which Sir J C Bose realised through his meticulous experimentation and he thus validated the analysis.

There is lot of research being conducted to understand plant physiology. Being stationary, their growth is dependent on the prevailing conditions present at the place it grows. It has been found that roots of many plants have a symbiotic relationship with fungus like Arbuscular Mycorrhizae (AM) or commonly known as ‘tree-like fungal roots’, which give phosphate nutrients to plants by taking in sugars from plants. Otherwise the plants would have no access to phosphate in the absence of these fungi\(^{233}\). Again, plant flowering cycle is also dependent on external factors such as intensity of light, temperature variance and other environmental signals as seen in genes such as CONSTANS (CO), Flowering Lotus C (FLC) and FRIGIDA\(^{234}\). But our ancestors were aware of the mutual help taken by different organisms and the environmental factors that affect their growth;

\(^{232}\) *Ibid*, p.69.
only scientific recognition and reasoning is happening now. Plants have their own way of communicating with Nature and take in the required information from the environment which helps in exploration for resources atop and underneath their terrafirma.

**TREES AND FORESTS**

In the Upanishads, description of tree is made to state ‘Brahman’ that means each part of the tree is equated to being Brahman\(^{235}\). Plants and trees are the oxygen providers on earth, a prime necessary ingredient for all creatures to survive. Forests are harbinger of rains necessary for healthy living of all creatures. The corollary given to explain this point is that forests need to be preserved as they help in rain formation. This is similar to ruling the empire truthfully as only then can one overpower the enemies like the speed of lightening\(^{236}\). Thus, trees if not protected, will hamper rainfall which would affect the health of all beings.

Aranyani or the Lady of the forest is a hymn dedicated to the Forest Queen of the jungle, the important one who is the deity and forest personified\(^ {237}\). This hymn clearly shows the importance and sacredness of the forest as considered by the Vedic composers. The hymn relates to the good and bad aspect of the forest. Respecting the intrinsic value of the forest is essential as such the Lady of the

\(^{235}\) Katha Upanishad 2.3.1; Swami Gambhirananda (Tr.), *Eight Upanishads – Volume 1*, Advaita Ashrama, Kolkata, 2008, pp. 213-214.

\(^{236}\) Y.V 1.12.33.

forest is associated to be the real mother to humans\textsuperscript{238}. This importance given to Aranyani can be known from this verse: Aranyani being sweet scented, ‘tills not but has stores of food’ (\textit{aanyanim asamsisam})\textsuperscript{239}. In ancient times every forest was regarded as sacred and was home to varied wildlife. The concept seen here is that Aranyani is taken to be the spirit of the forest; as such the forest is considered to be whole ecosystem by itself. Aranyani is the mother of all natural beings under her domain including plants and animals, winds and rains and soil. Thus, we see that plants, animals, waters and trees being different parts of the forest are mentioned in Aranyani hymn from various aspects and angles\textsuperscript{240}.

Sacred groves are the last surviving virgin forest patches harbouring climax vegetation and biodiversity richness. There is an ancient practice still followed in some parts of the world including India of preserving patches of forest area. They are atoned to be sacred dedicated to local deities or ancestral spirits and are designated as sacred groves. The existence of such forests to this day is an exemplary knowhow of how belief and knowledge passed down through generations can help in forest conservation. Indigenous people surrounding these forest patches are the main protectors of these mini forests. Preservation of forests as sustainable resources is needed for not only the many ecological benefits

\textsuperscript{239} Ibid., p. 264-265.
\textsuperscript{240} Ibid., Pp. 266-267.
provided by them but also for them being the only home for unique species of plants, trees and other beings. These sacred groves are becoming rarer and rarer with deforestation. Though there is no data of the exact number of sacred groves present today, yet it is true that it is one of few ancient surviving practices having tremendous environmental value\textsuperscript{241}.

Vanamahotsav, festival of trees was being celebrated as a ritual to show the appreciation for the selfless services rendered by the trees. The ceremony of Vrksotsavavidhi is mentioned in Matsya Purana\textsuperscript{242} and Padma Purana which highlight the importance of tree plantation and contain the procedure of performing tree festival\textsuperscript{243}.

In this context it is not out of place to narrate a few verses\textsuperscript{244} stated about environmentalism in Mahabharata.

1) Sage Bhrigu’s question of ‘whether or not tree has life’ was answered by Sage Bharadwaja by stating that trees indeed have life and hence one cannot regard them as being lifeless - \textit{jivam pashyaami vrikshaanaam achaitanyam na vidyate}\textsuperscript{245}.


\textsuperscript{242}Vasudha Narayan, \textit{‘Water, Wood and Wisdom: Ecological Perspectives from the Hindu Traditions’}, Op.Cit., p.188.


\textsuperscript{244}Nalini Sadhale and YL Nene, \textit{Ancient Indian traditional and scientific thought on plants: Sir J C Bose and Vrikshayurveda}, Op.Cit., p.104.

\textsuperscript{245}Ibid., p.104 : V.17, Shanti 184.
2) Plants having vision is implied in the statement that a creeper entwines her coil round the tree and thus finds its path all over the tree. Hence plants cannot be considered to be blind as blind cannot find their path\textsuperscript{246}.

3) Trees can hear and react to sound is implied from the fact that the flowers and leaves of trees fall off after a harsh sound of stormy wind, fire or thunder\textsuperscript{247}.

4) Trees can smell as they react to good and bad smell and their diseases can be cured through fumigation of various materials\textsuperscript{248}.

5) Trees do react to the sense of hot or cold touch as the leaves, flowers, fruits and bark of trees dry and fall off the trees due to heat.

6) Trees consume water with the help of their roots. Also, they respond to treatment of diseases where in the remedial concentrations mixed in water given to trees is consumed by them. Hence, sense of taste is exhibited in them. For example, the very etymology of the word ‘padaih’ meaning tree is – padaih pibati iti which means a tree is called padapa because it takes water and nourishment with its pada or feet meaning roots\textsuperscript{249}.

\textsuperscript{246} Ibid., p.105 : 184 - 13.
\textsuperscript{247} Ibid., p.105 : 184 - 12.
\textsuperscript{248} Ibid., p.105 : 184 - 15.
\textsuperscript{249} Ibid., p.105 : 184 – 14.
7) Happiness and sorrow being a function of the mind, is another feature exhibited by trees. Thus, it implies that trees have mind or thought function.\[250\]

**ANIMAL LIFE**

Nature is formed in such a balanced way that birds, animals, trees, plants, microbes and even inanimate things are required for human existence. Harmonious co-existence of all of them is an indicator of a healthy environment. As animals move around their habitat for food, they depend on prey from the surrounding area and hence environment gets modified in this process. Animals work to maintain themselves ensuring ecological balance to fulfil the cosmic order. This modification is in tune with the natural process as animals interact with Nature every time only in one way unlike man who interacts with Nature in multifarious ways. Thus, the co-equivocal existence of animals with Nature cannot be questioned as in spite of their usage of natural resources the resource base and population equilibrium is maintained.

Nowhere in the Vedic scriptures has there been a mention of non usage of natural resources as each creation is born to fulfil their special purpose. Human being is a species that also gets food in a commercial way or indirect way, unlike the animals and all other species that take their food directly from Nature. This

makes the non-human species more vulnerable to human actions that violate the balance in Nature.

Plants and animals are becoming vulnerable to human actions. We find mentioned in the Vedas, care and protection towards animals. No person should kill animals that are helpful to all. Kings are ordained to never kill bullocks which help in ploughing and cows which provide milk. Punishment has to be meted out to those who harm or kill such helpful animals.\footnote{Y.V 13.37,49 ; Renugadevi R, \textit{Environmental Ethics in the Hindu Vedas and Puranas in India}, \textit{Op.Cit.}, p.2.}

The animals have also been classified as those that fly or sky borne like birds, aquatic animals or water borne like fishes, and other animals living on earth or land borne.\footnote{Chakravarti Ananthacharya, \textit{Philosophy of Upanishads}, Darsharacharya Ultra Publications, Bangalore, 1999,p.132.} Ancients would have garnered much of scientific knowledge through observation of animal behaviour such as migration of birds and animals to other areas. They would have seen the orientation and communication among insects. What we now know as ultrasonic communication, was perceived by the ancients to be communication by means of sound among elephants and among whales. They also were keen observers of the symmetrical behaviour of herds of wild animals such as deer.\footnote{Vannucci M, \textit{Human Ecology in the Vedas}, \textit{Op.Cit.}, Pp.103-104.}
According to the Jain teacher Umasvati, purpose of life-forms is to help each other (parasparopagraho jivanam). Jainism grades life-forms from lower to higher, starting from one-sensed beings and progressing to five sensed beings.

One sensed beings such as earth, water, fire and air bodies; micro-organisms or nigoda and plants are those that possess only sense of touch. The next order of beings such as worms, leeches, oysters and snails have an added sense of taste to sense of touch. The third orders of beings which include insects and spiders have another sense that of smell added to senses of touch and taste. The fourth orders of beings which include flies, butterflies and bees have sense of vision along with senses of smell, touch and taste. The fifth level of beings having all the five senses of smell, touch, taste, sight and hearing is found in birds, reptiles, mammals and humans.

Santi Suri, a Svetambara Jain writer of 17th century has written fifty verses in Jiva Vicara Prakaranam, a text enlisting various types of life, their frequency of appearances and their approximate life span. Two sensed beings are said to live for twelve years, three sensed beings live for forty nine days, four sensed beings live for six months and five sensed beings which include denizens of hell, gods and humans.

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humans have various life spans. Also, a hardened rock has a lifespan of twenty-two thousand years and trees live for ten thousand years\textsuperscript{257}.

Earth bodied souls such as jewels, gems, coral, gold, red soil, lava, salt and so forth are called as Prthivi kayika jivas. Water bodied souls like rainwater, underground water, dew, ice, hail, water drops and mist has a life span of seven thousand years. Vayu kayika Jivas or wind bodies such as winds blowing up, winds blowing down, whirlwinds, melodious winds, dense winds, and so forth have a lifespan of three thousand years. Agnikaya Jivas or fire bodied souls such as flames, fire reflected in the sky, burning coals, shooting stars, lightning and so forth has a life span of three days and three nights\textsuperscript{258}.

Another Prakritized vernacular liturgy states that, there 700,000 each of earth bodies, water bodies, fire bodies and air bodies. There are around 1,000,000 separate plant bodies and 1,400,000 aggregated plant bodies. There are 200,000 each of two-sensed, three-sensed and four-sensed beings. There are 400,000 each of divine and infernal five-sensed beings and 400,000 of plant and animal five sensed beings and about 1,400,000 humans. Thus total amounting to 8,400,000 forms of existence\textsuperscript{259}.

\textsuperscript{257} Ibid., p.128.
\textsuperscript{258} Ibid., p.128-129.
According to Buddhism, animals are sentient beings just as humans. Sense experience is possible with the help of contact between the five sense organs and sense object. These sense organs depend upon mind-matter or nama-rupa. Animals do experience feelings and possess consciousness, but their mind functions at a lower level. Therefore they are subject to the same laws of existence. Buddhism believes in the doctrine of Dependent Origination\(^{260}\) and hence ascertains the reciprocal influence of all elements on all things. This doctrine states that the existence of a thing is dependent on the existence of all other things. All beings are interrelated, interconnected and nothing exists by itself.

The present environmental crisis has not only to do with man-wild animal conflict but also to the extinction of birds and endangerment of various animal species. Varied reasons can be applied for this, chief among them is the lack of understanding of divinity in Nature which in earlier times was sustained by associating several gods and goddesses with animals and birds as their companions as seen in our primeval mythologies. All kinds of creatures were depicted along with the Hindu Gods - pious or harmful, nothing being left out\(^{261}\). Whatever be the tendency, be it pluralistic or polytheistic as witnessed in the earlier Rig Vedic hymns; or monotheistic as seen in the Brahmanic portion of the Vedas and be it

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\(^{260}\) See Vide p.40 in this thesis.

\(^{261}\) See vide p.23 in this thesis.
monistic as depicted in the Upanishadic concept of the Vedas; the affinity towards Nature is ascertained\textsuperscript{262}.

Rabindranath Tagore in one of his speeches mentions that unlike man, animal is limitedly bound by necessary activities of self preservation and perpetuation of race. According to him, humans associate with Nature in three different ways which are by necessity, by knowledge and lastly by a pure emotional and intuitional union with it. He says, “Our kinship is established with the last”\textsuperscript{263}. Not apprehending the right association, modern man is unsure of the harm being done on Nature by his desire based actions.

**PANCHAMAHAYAJNA**

Vedic literature is as old as human being containing exceptional knowledge of both Apara (lower or material) and Para (Vidya) knowledge (higher or spiritual). Vedas represent optimism and the hymns do not have any begging tone underlined in it. Vedic Aryan’s prayer to gods is in both respectful as well as affectionate tone. There is no element of fear expressed in his prayers. For example in the Chamaka of Rudra\textsuperscript{264}, the Aryan’s prayer is in the following note: “Let the happiness be with me” (sham cha me). Since Rudra is imminent in every object of the Universe, the


\textsuperscript{263} Prthiwish Neogy (Ed.), *Rabindranath Tagore on Art and Aesthetics*, Orient Longmans, New Delhi, 1961, Pp.82, 86.

\textsuperscript{264} Chamaka of Rudra
Vedic Aryan wants every object to be with him. There is no element of supplication implied here.

The relationship between Vedic God and devotee in Vedic times is deep and intimate though not hierarchical. They had a high esteem as they realized that without Nature they were nothing. By asking the gods for blessings, they do not exhibit fear; instead display a great deal of reverence, regard and love for God and a profound faith that whatever is asked is bestowed upon them. One can find all these mentioned implicitly in the Vedic hymns. Modern man being unaware of this fact will have no reason to be acquainted of this specialty.

VEDIC MANTRAS AND THEIR SIGNIFICANCE

Vedic hymns have unchanging essence repeated in different forms with the notation, matter and spirit remaining the same. A correct objective compliment can be seen which signifies that many generations were infused with the same principle of ensuring guaranteed protection of Nature. Vedic hymns being sacred and not having any written manuscript had been committed to memory. They had an unparagoned technique of memory training where the hymns were transferred orally without any alterations. This was done by succession of intellectuals and the particular notations had to be taught with specific tilts of the head and gestures. They were ordained for attaining inner peace of mind, overall happiness and
creation of calm environment all around. The significance of the mantras lies in the fact that it gave one the will-power necessary for thought-transference as thought uncontrolled is a deadly enemy to will-power\textsuperscript{265}.

Vedic hymns are not characterized by desperateness or pessimism. None of the Vedic mantra has a pessimistic note, instead they respect the power that they have and shower it to us. Vedic man would say, “I’m going to do the things that please you, you be pleased and shower your blessings on us.” This is the attitude that can be seen in the Vedic hymns. There is a \textit{dignified} way of asking what Vedic man feels is rightfully his.

The root of the word ‘Mantra’ is taken from ‘man’ meaning ‘to think’ attributed to the faculty of manas, mind. The word ‘mantra’ means that which has been thought that is privately or through secret initiation has been transmitted possessing the power of liberation\textsuperscript{266}. The definition ‘mananat trayate iti mantrah’, proves that the mantras are for one’s own contemplation of the Supreme Being\textsuperscript{267}.

The definition of mantra involves three aspects:

1) Secret initiation by Guru

2) Incessant contemplation on the part of the disciple

3) Consequences of second part resulting in liberation

Mantras are sacred speech, sacrificial formula, an efficient counsel. According to the Brh.Up., the word came into existence from the alliance of ‘mind’ (manas) with ‘word’ (vac). It is not simply sound and cannot be relegated to be magic. Words have a sound and underlying meaning attached to it which is not made aware to all who just hear the sound. Acquainting the meaning along with its message and vibrations as they are known in the case of mantra recitation is the only way one can have any chance of understanding the mantras as being the prime utterances in yajna performance268.

Three meanings can be attributed to the Vedic mantras269, which are

1) Adhyatma or intuitive meaning (COSMIC)
2) Adhidaiva or the meaning that relates to divinity (DIVINE)
3) Adhibhuta or the meaning that relates to matter both gross and subtle (HUMAN)

According to the mental capacity of the person, if he is able to contemplate on the meaning of the mantras, then he is able to live in peace and harmony. This can be done by integrating the three centres of outer reality, inner reality and amassing them to the central core of man himself. A classic example of this is the recitation of Gayatri mantra which helps man in getting an insight into the whole of reality. It is one of the most sacred mantras offered in the worship of Lord Surya

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or Sun God. Lord Krishna mentions in the Gita that among the mantras He is the Gayatri\textsuperscript{270}. The mantra is addressed to the divine life giver in the form of Savitr. Manu states that there is nothing more exalted than the Gayatri\textsuperscript{271}. Gayatri mantra is also mentioned in the three Upanishads\textsuperscript{272}.

The etymology of Gayatri is ‘Gayantam trayati iti gayatri’ meaning ‘whoever who recites it is protected’. Quoting the mantra\textsuperscript{273}:

\begin{center}
Let us think on the lovely splendor
of the God Savitr,
that he may inspire our minds\textsuperscript{274}.
\end{center}

**RTA SYNONYM TO SACRIFICE**

The cosmic order, Rta, meaning ‘the course of things’\textsuperscript{275}, initially was referred to orderly happenings of natural events like the movements of earth, moon, sun and other heavenly bodies, and successive occurrence of seasons. Later on, Rta came to be applied to both cosmic or natural order and human moral order. Since the early ages, Vedic man attributed gods to all the natural happenings; he considered gods to be the guardians of Rta too and hence they had to be favoured

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\textsuperscript{270} C.L.Goswami, M.A.Sastri and Krishnadas(Eds.), Kalyana-Kalpataru, Gita-Tattva Number II, The Bhagavad Gita, Vol- XII, Gita Press, Gorakhpur, 1946, p.175.
\textsuperscript{272} Bh.Up.V.14, 6-7; Ch.Up. III.12.1 ; Maitri Upanishad VI.7 ; Raimundo Panikkar (Ed. & Tr.), The Vedic Experience – Mantramanjari, Op.Cit., Pp.38-41
\textsuperscript{273} Basham A.L, The Wonder that was India, Rupa and Co. publications,3rd edition , New Delhi, 2003, p.162.
\textsuperscript{274} R.V. 3.62.10 : Gayatri mantra :
T’dt Savitu’r v’reniam
bha’rgo devas’ya dhimahi,
dhiyo yo’ nah prachodayat ||
\textsuperscript{275} Radhakrishnan, Indian Philosophy - Volume I, 8th edition, George Allen and Unwin Ltd London, 1958, p.78.
\end{flushright}
through sacrifice. Rta became synonym for yajna or sacrificial ceremony\textsuperscript{276}. Thus, with passage of time, these sacrifices came to be performed as Yajnas and performing them was a dire necessity to safeguard the world and for the smooth flow of natural and moral law\textsuperscript{277}.

The prime necessity for performing sacrifices ascertains that the object of the sacrifice was to understand the workings of nature in the body and also the outside world, as given below in a few of the Upanishads\textsuperscript{278}:

1) Mundaka Upanishad states that the sacrificial works as told in Vedas if performed sincerely without any interruption would lead “the lovers of truth to the true world”.

2) Ch.Up. states that three branches of law that governs a Vedic follower are sacrifice, study and charity.

**CONCEPTION OF YAJNA**

‘Yaj’ in the term Yajna implies ‘to worship’ or ‘to offer’ and hence commonly translated to mean “sacrifice”. It can be noted that the Mimamsaka had stated that the prime reason for existence of Vedas is that they could be used in performing Yajnas, to quote the verse ‘\textit{vedah hi yajnarthamabhipravrttah}’\textsuperscript{279}.

Yajna is the linking factor which binds the microcosm with the macrocosm, thus

\textsuperscript{276} \textit{Ibid.}, p.110.
sustaining the whole creation. The pronunciation of the mantras with correct notations and the reverential attitude on the part of the performer are most essential for performing yajna. Pure material has to be used in the yajnas without which the success of the yajna is not complete.

Fire was worshipped in three principal forms. These are fire on earth, fire in the middle region which helped in the formation clouds to bear rain and thunder storms, and fire as in Sun in the sky. Vedic sages knew sun to be the main source of energy and thus worshipped fire which represents sun’s energy. Yajna offerings were to be made through fire which actually referred to sun god and thus made to God. Yajurveda stipulates that the creator ordained the sun and fire to penetrate deep into the substances to segregate their aqueous and soporific contents thus making the substance pure and clean, bestowing happiness on men. The import of yajnas is performance of sacrifices.

In the Gita, the following verse states:

Sahayajnah prajah srstva purovaca prajapathih |
Anena prasavishyadhvamesha voastvistakamadhuk ||

The meaning is that having created the subjects (prajah) together with yajna, Prajapati told them ‘procreate using this process (yajna) and let it bestow on you whatever you want’. Henceforth yajna become the first sacred act of the Devas and even for mankind. Yajnavidya, srstividya and vedavidya are synonymous concluding that the terrestrial sacrifices are similar to what occurs in Nature\textsuperscript{282}.

Pratardana Yajna as mentioned in the Kaushitaki Upanishad is called “inner sacrifice”. In the process of being attentive to a task, man holds his breath and it seems like that he is neither breathing in nor breathing out. This, non-inhalation and non-exhalation of breath happens when a person is overtly concentrated on performing an action, never diverting his mind even towards breathing, thus performing a type of ‘inner sacrifice’. This ‘inner sacrifice’ is insistently happening within man’s body\textsuperscript{283}.

The need for performing Yajna arose from the following factors:

1) **As a token of gratitude**: Thanks had to be offered to the environment, to the Nature, to the Panchamahabhutas and also to gods for sustenance provided on this earth in the form of food, water, air and shelter. The subsistence of all living beings was dependent on these entities. The human existence on earth is dependent upon the proper functioning of all natural phenomena, for which man had to be ever

grateful. The ancient man’s way of offering his gratitude was through performing Yajnas. It was also to make up for the unavoidable himsa or violence done to other living creatures (sunaa dosha) committed by man unknowingly.

2) **As a form of relationship:** Man being finite was taken as a limitation to connect to the infinite. Performing yajna was considered to bridge the gap. These yajnas were also performed for inner purification. Thus Vedic man could reach out to higher consciousness by performing the yajna rituals. The belief was that the celestial beings needed food to maintain their brightness and immortal status which could be got only through food offered in yajna. Every celestial being had his own job to do of protecting the Nature accordingly man had also his own duty of propitiating celestial beings. Thus to maintain this mutual relationship, performance of yajnas was made integral to man’s normal activities.

3) **As a token of give and take:** Prajapati or the creator while creating the solar system, earth and all other celestial beings would have had a constant loss. This constant loss had to be refilled and yajna was the only means of fulfilling this requirement. It was also a way of asking them to be at their designated places doing their designated jobs. Similarly, man needed the favour of the celestial being which necessitated him to perform the yajna.

Although the performance of yajna might seem to be outdated to the modern mind, the above factors rightly prove that conservation of Nature was the topmost
priority of the Vedic people. An important motive behind performance of yajnas was for receiving rainfall as rains are the vital source of food production thereby nutrients to plants and animals. The following verse means yajna produces rain, rain in turn produces food:

\[ \text{Annadbhavanti bhutani prajanyadannasambhavah} | \\
\text{yajnadbhavati parjanyo, yajnah karmasamudbhavah} \] 284

**ENVIRONMENTAL IMPLICATIONS OF PANCHAMAHAYAJNA**

Samskaras like Panchamahayajna help humans in different stages of life. The earliest reference to the five great sacrifices or Panchamahayajna is found in Br.Up.285.

There are two types of yajnas. First is the yajna that is done with the intention of obtaining some kind of secular fruit and the second is yajna done for discharging one’s duty. Panchamahayajna which are done daily is the dutiful yajna that does not involve any injury.

As the name itself suggests, it is the five major sacrifices conjured up for maintaining reverential attitude towards universe. The belief of sacrifice espoused on a regular basis instills in man a universal love of consciousness. The outcome of

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performing these panchamahayajnas is the untold, unforeseen, unnoticed and enormous benefit accrued to the performer of these yajnas. Exclusiveness of these yajnas is gauged from the fact that they are to be performed in different proportions.

1) **Brahmayajna or Rshiyajna**: It indicates the sacrifice made to Brahma, Vedas and Sages. Brahma is regarded as of the nature of knowledge, Vedas signify the study of knowledge and Sages are regarded as the distributor of knowledge. Thus, Brahma yajna signifies that true knowledge in all its facets needs to be worshipped. Offering and sharing one’s knowledge with others, respecting and learning from gurus and rishis, giving oblations, and respecting Vedic and scriptural knowledge help man to grow as definite individual. Thus true knowledge at both the material and spiritual level help in understanding Nature.

From the environmental purport, knowledge needs to be used ethically in one’s profession. Correct environmental knowledge is the need of the hour. One needs to understand the exploitation that is happening in the environment. Right knowledge can help to create awareness of the various environmental issues and define ways to mitigate them.

2) **Pitryajna**: Pitr or pita in Sanskrit terminology refers to ancestor or forefather. It would also refer to our parents and all elderly folk. Thus pitryajna is the sacrifice offered to ancestors. Worshipping the deceased ancestors through rituals is a form
of showing one’s gratitude to them, as it is through them that one has been born. Analyzing it further, it would also indicate the love and care shown to senior citizens of the family.

In the environmental sense, it is having reverential attitude to our forefathers who had during their time taken the responsibility of maintaining the purity and serenity of the environment for future use. Also, Pitr yajna would serve an occasion for taking a vow to continue to take similar responsibility of maintaining the inviolability of environment.

3) **Atithiyajna or Purushayajna**: This yajna is truly for human beings. It is worship and sacrifice to be offered to fellow humans. Purusha (nara or manushya) refers to man while atithi refers to guest. In ancient times, guests would include sages, saints, learned and informed people who were highly educated in scriptural knowledge but having less material comforts. This yajna was initiated to help bring equanimity to all fellow beings in society.

In the environmental spirit, this yajna needs to be given the maximum weightage. Discharging one’s duty in monetary and physical form is also a part of environmentalism. Wealth and happiness can be promoted and developed by serving society and humanity at large which itself creates a feeling of oneness among all people. It is humans who are responsible for environmental degradation that is being witnessed currently on a large scale. In all cases, it is 20% of the
people who utilize 80% of the natural resources\textsuperscript{286}. This being the truth, firstly equal distribution of natural resources among the people is essential which is possible only through charity. Secondly, it prevents man from over-utilizing the natural resources. The focus should be in giving what others need.

4) \textbf{Vaishvadeva or Bhutayajna}: Vedic people knew the importance of non-humans and this yajna has been incorporated as a response to the need to save and take care of other beings. They were aware of the crucial role played by plants, birds, animals and other microbes in maintaining the food cycle. The dependency factor of each one on the other is highlighted here. Trees require carbon-dioxide given out by animals and human beings. In turn oxygen is provided by trees. Thus worshipping other beings and making sacrifice to other species has been given prime importance. Performance of this yajna also brings about cosmic respect and love to all creatures.

The environmental insight gained by the performance of this yajna is to be aware that not harming the environment in itself would be of great service to other creatures. One needs to be compassionate and responsible to the plant and animal kingdom. Earlier, people used to keep bowl of water in front of their homes for thirsty birds and animals. They also showed respect by growing trees and plants, taking only the fallen branches for home needs and by praying for forgiveness to

\textsuperscript{286} \text{<http://www.gassner.co.il/pareto/, www.yourdictionary.com/pareto-principle >, accessed on 26.2.2015.}

Foot Note: Pareto principle, also known as 80-20 rule, suggested by J.M.Juran, a management thinker states that 80% of consequences originate from 20% causes.
the trees before cutting it. Thus they visualized the sameness of life present in trees. Now the trend is to tamper and cut trees without acknowledging the life present in them.

5) **Devayajna**: As the name indicates, it includes worshipping devas or gods and making sacrifice to celestial beings through yajnas. Ancients regarded all cosmic forces being governed by gods. To name a few Agni was the fire god, Indra was the rain god, Vayu was the wind god, Varuna was the water god, and twin Ashvinis being the gods of sunset and sunrise. Hence, these gods were worshipped to express gratefulness for providing sustenance on earth.

In the environmental perception, we see that ancients perceived divinity in the elements of fire, rains, wind, water, and sun among others. Importance of performing this yajna was to acknowledge their invariability for man’s survival.

**ENVIRONMENTAL IMPORTANCE OF YAJNAS**

The environmental implication of the yajnas is immense. It is a wonder that the Vedic man should have thought so proficiently on all matters that would affect mankind in the long term and established certain principles and norms to be followed with sincerity to maintain environmental purity. That ancient seer’s forethought in having institutionalized the various yajnas needs high appreciation.

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287 See Vide p.30 in this thesis.
The ancient sages had envisaged earth to be a wholesome entity and hence harbored no ill will towards other beings. They never had a limited concept of environment. For them, environment included

1) Teachers such as rishis and gurus who had deep knowledge of reality.
2) The forefathers and ancestors to whom we are indebted for our presence on earth.
3) Fellow human beings among whom we live in a society.
4) Other living beings for our mutual dependence, and
5) Elements believed to be governed by divine celestial beings on which our very survival is dependent.

Thus the word environment in Indian philosophy

1) Does not have a restricted application.
2) Does not apply only to human beings but also to other beings such as plants and animals.
3) It is also extended to our forefathers who had been in the past.
4) It also refers to celestial beings or gods.

Vedic man expressed a sense of “pure emotional sensitivity” towards Nature understood in a broader sense in performing these Yajnas. The Agni hymn which means ‘Let though expand and be happy by the holistic (samit) offer to thee in the
form of oblations, so that I also expand (grow) and become happy’, can be stated as below

Yesha te agne samitthaya vardhasva cha aapyayasva cha |

Tayaham vardhamano bhooyasam aapyayamaanasva svaha ||

The very purpose of studying the problem in an objective way itself implies that there is faith and emotional intent to protect the environment. His dharma was based on his belief in the pre-existence and past existence of soul. Not only empirical beings but also extra empirical beings were included in his concept of environment. Extra empirical included belief in the existence of forefathers, ancestors and celestial beings.

The belief in the existence of extra empirical is based on the belief in the doctrine of karma. The belief in the doctrine of karma has environmental significance. The doctrine of karma implies that man is responsible for what he is at present. Man’s past determines his present and his present actions determine his future. The theory has environmental implication in that for whatever type of environmental crises man is facing today, man alone is responsible and not some extra empirical reality. Vedic man’s belief in the extra empirical reality shows his broader outlook of Nature or Environment. This outlook is inclusive of inert matter, other human beings and other creatures which are given to his normal
perception. It also includes those beings like manes and celestials which are not given to normal perception.

If the doctrine of karma is meaningless, there will be no scope for service and discharge of one’s duty. There won’t be any value for human responsibility and all action done for environmental conservation becomes meaningless. The karma doctrine has got two faces. It is not fatalism, as it is born out of exercising one’s own free will and discharging one’s responsibility either in the positive way or the negative way. The positive way of exercising one’s freedom has got positive repercussions and the negative way of discharging the responsibilities has negative consequences. But the intention is to discharge one’s duty. Environmentalism is meaningful only in the context of the acceptance of freedom and responsibility.

ASHVAMEDHA YAJNA

There are many yajnas which fall under kamya karma such as Asvamedha yajna which are performed in order to attain the supremacy of whole universe. But a point to be noted is that whenever yajna is mentioned here, it is not the kamya karma, but the performance of daily yajna that is highlighted which does not involve violence towards animals. If any killing is involved in performing yajna, then that yajna is not done as a duty but with the intention of achieving some mundane results. Every Vedic statement has got two meanings namely Vachyartha (literary meaning) and Lakshyartha (suggestive or deeper meaning). The problem
arises in Veda when we take its statements are taken in vachyartha, as then the statements becomes irrelevant.

As stated earlier, one of the reasons for performance of yajna was to avoid sunaa dosha. Sunaa dosha is the sin accrued by one maintaining knowingly or unknowingly the slaughter places in every house namely hearth, grinder, broom, mixie etc. which involve hurting or killing of creatures while doing household works\textsuperscript{288}. The very fact that the yajnas are performed to ward off sunaa dosha implies two things. Firstly, all yajnas did not involve animal sacrifices. Secondly, even if some yajnas involved animal sacrifice, the latter was given up in due course and given a subjective turn as we find in the very first chapter of Br.Up. where there is a description of the Ashvamedha yajna in a subjective way. According to the verse, if the whole universe constitutes the horse, Ushas, the effulgence which comes before the dawn constitutes the head of the sacrificial horse “\textit{usha va ashvasya medhyasya shiraha}”. So, meditating upon the whole universe in this particular way, one will secure the benefit which is equated with the performance of the actual Ashwamedha Yajna\textsuperscript{289}. Here no killing is involved. Thus very conception of this yajna takes a different, non-injurious turn and the force of the ritual is lessened in the later Vedic period.

ENVIRONMENTAL IMPORTANCE OF ATHIRATHRA YAJNA

Athirathra yajna in particular is performed for accruing immense environmental benefits. This specific yajna creates a positive effect in the congregation of people who attend the yajnas. Thus, the yajna helps in purifying their intellect, soul and body.

The Athirathra yajna grouped under shrauta karmas is a magnificent and very meticulous ritual. Performance of this yajna has to be done with strict adherence to ascetic tradition. It requires an in depth and accurate knowledge of the Vedic hymns of Rig, Yajur and Sama Vedas. These yajnas were being performed in a grand way for several days in the ancient period signifying a ritual done for purifying the panchamahabhutas. During yajna performance when all the requisite ingredients are offered to the fire, not only would the atmosphere get purified but also the environmental natural balance is restored.

This yajna having a 5000 year old history is performed by Kerala Nambodiri priests. It is a complex fire sacrifice taking twelve days to complete. It requires participation by one main leader and seventeen individuals who are well versed in Vedic hymns. The items used in the yajna have to be offered in different shaped
vessels made of clay and wood. Even the main fire place is in the shape of a bird\textsuperscript{290}. Images 1, 2 and 3 depict the various processes of Athirathra Yajna.

Professor Frits Staal\textsuperscript{291} an Indologist has been credited with reviving this dying ritual. The last time it was performed according to known sources in this century was in the year 1975. In the previous two years of 2011 and 2012, four such yajnas have been conducted, three in India and one in Nepal\textsuperscript{292}. The priests who are involved in performing this yajna stand by the statement that these yajnas help in preservation of flora and fauna of the area by emanating positive vibrations and thus restoring the balance in the environment and in man’s lives. Namboothiri, the main priest at one of the yajnas emphasized that good attendance in these yajna performances was a sure sign of people discovering new insights and meaning in these ancient traditions and also proves a point that they are getting detangled with consumerism and materialism\textsuperscript{293}.

Scientists were present in the yajna performed at Panjal village of Kerala to study the impact of the yajna on atmosphere, soil and micro-organisms. They found out that the yajna has helped in accelerating seed germination process and

\textsuperscript{291} Prof. Frits Staal, who worked in University of California, had set up a fund in 1975 for the revival of Athirathram yajna and compiled it in his book Agni: The Vedic Ritual of the Fire Altar.  
\textsuperscript{292} Panjal, Kerala in April 2011; Panauti in Nepal in November 2011; Kodakara, Kerala in March-April 2012, Bhadrachalam, Andhra Pradesh in April-May 2012.  
diminishing the microbial presence in air, water and soil in the surrounding area of the yajna place (yajnashala) thus purifying the atmospheric air. They also believe that chanting of the mantras is nothing but a series of continuous positive vibrations which helps in speeding up the germination process\textsuperscript{294}.

In the yajna performed at Nepal, the scientists conducted experiments to measure the energy field in the yajna place and its surroundings through REG (Random Event Generator)\textsuperscript{295}. They found out that the vibrations produced during the time of the yajna had no clear cut scientific explanation as yet that could be provided\textsuperscript{296}.

In the final analysis, occurrence of heavy rains over the yajnashala at the end of the ritual is an indication of the yajna being a success. The observers at all the four yajnas did confirm the occurrence of heavy showers at the end of the ritual period. Also, as a last ritual, all the related items used in the performance of the yajna are absolved into the confluence of three rivers. It is a symbolic gesture of having performed the yajna for the benefit of whole society and not for any personal accomplishment.


\textsuperscript{295} Random Event Generator is an instrument that records the energy field in the surrounding area.

\textsuperscript{296} Ranjeni. A. Singh, Energy As Purifier, \url{http://m.speakingtree.in/spiritual-articles/faith-and-rituals/energy-as-purifier}, accessed on 03.12.2011.
IMAGE 1: PERFORMANCE OF ATHIRATHRA YAJNA

IMAGE 2: YAJNASHALA

IMAGE 3: BIRDSHAPE ATHIRATHRA YAJNA STRUCTURE AND UTENSILS USED IN YAJNA
An interesting factor that needs further analysis is to check whether \textit{Athirathra yajna} can be performed without chanting of mantras. Can offering of only the required ingredients without the recitation of mantras be the prime cause for bringing the clouds together and showering of rains is a question that remains to be answered.

\textbf{NOTE ON PANCHAMAHABHUTA}

The panchamahabhutas in modern parlance can be termed as the ‘basic environmental elements’\textsuperscript{297}. Ancient man’s first association was with these basic essentials as they had ample time to explore and observe the functioning of these elements. They form part of Nature and are given due importance in the ancient hymns. The Ait.Up. confirms the existence of the five elements\textsuperscript{298}. The Shvetashvatara Upanishad states ‘The Brahman by whom the entire universe is engulfed...this creation is governed by Him as well as the five great elements: earth, air, space, water and light’\textsuperscript{299}. These elements create an intricate web of life.

Thus the five elements are ether (akasha), air (vayu), fire (agni), water (ap or jal) and prthvi (earth). The entire universe including earth, plants, animals and humans are made up of these five elements. The interconnectedness and

\textsuperscript{298} Aitareya Upanishad 3.3; Swami Gambhirananda (Tr.), \textit{Eight Upanishads- Vol II (with the commentary of Sankaracarya)}, Advaita Ashrama, Kolkata, 2008, Pp. 66-67.
interdependence of these five elements among themselves is seen in the following hymn which states that all elements emanate from one supreme reality Brahman.

_Tasmadva etasmadatmana aakashassambhutah||_

_Aakashadvayuh | vayoragnih | agnerapah| adbhyah prthivi||_

_Prthivya oshadhayah | oshadhibhyo annam | annat purushah || |

The above hymn states that from Brahman arises ether, from ether arises air, from air arises fire, from fire arises water, from water arises earth, from earth emanates herbs, from herbs arises food and from food emanate man and all creatures. No single element is autonomous as each has its own form and characteristics. It is in their mutual relatedness that they assume ecological significance. These not only constitute the macrocosmic universe but also are present in the microcosm or biological man.

In the Garbhapanisd, we find mentioned the Sanskrit word for body is ‘sarira’ which literally means ‘what is shattered’. It is an apt description as all forms of life (bodies) go through various development stages from birth to death, thus getting shattered at the end. In the Sarirakapanisad, human body is said to be a collection of panchamahabhutas. It further mentions that whatever is hard in body is of earth and whatever is liquid in body is of water. Elaborating further, in the body sphere whatever is warm is fire and whatever moves from one part to another.

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is of air. Finally, whatever is of the nature of cavity in the body can be said to be of ether. Each of the elements co-operate with each other thus facilitating for the accurate functioning of the body. To exemplify, subtle vital functions in the body is possible with the help of ether which provides space and other bodily functions such as respiration, circulation, alimentation and so forth is possible with the help of air\textsuperscript{301}.

Presence of the elements in the body has also been recognised by our seers. There is Agni\textsuperscript{302}, water\textsuperscript{303}, fire\textsuperscript{304} in the body. Fire is depicted as being present in the heart of a person\textsuperscript{305}. The relationship between the body and elements is recognised by the fact that birth of man is possible with the association of these elements and with the death of man these elements go back to their roots\textsuperscript{306}.

The human nose is related to the earth, the tongue to the water, the eyes to fire, the skin to air and the ear to akasha. This bond that exists between the sense organs and the gross elements is the foundational base of relationship between human beings and the natural world. Apart from earth, the senses of touch and

\textsuperscript{301} N.S.Subramaniyam, \textit{Encyclopaedia of Upanishads}, Sterling Publishers Pvt. Ltd, New Delhi, 1990
\textsuperscript{302} Y.V 1.3.7.
\textsuperscript{303} Y.V 1.4.13.
\textsuperscript{304} Y.V. 1.5.9.
\textsuperscript{306} Y.V 1.12.36, 37, 38.
smell lose their meaning. Even sound cannot be heard without special equipments. This can be viewed in the below table\textsuperscript{307}.

**TABLE 2:**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Gross Elements</th>
<th>Subtle elements and their objects</th>
<th>Corresponding Sense Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Akasha- Ether</td>
<td>Sabda – sound</td>
<td>Shrotra – Ear</td>
</tr>
<tr>
<td>2</td>
<td>Vayu- Air</td>
<td>Sparsha – touch</td>
<td>Tvak – Skin</td>
</tr>
<tr>
<td>3</td>
<td>Tejas-Agni-Fire</td>
<td>Rupa – forms</td>
<td>Chakshu – Eyes</td>
</tr>
<tr>
<td>4</td>
<td>Apah – Water</td>
<td>Rasa – taste</td>
<td>Jihva – Tongue</td>
</tr>
<tr>
<td>5</td>
<td>Prthvi – Earth</td>
<td>Gandha – smell</td>
<td>Ghraana – Nose</td>
</tr>
</tbody>
</table>

For instance, Vayu or air or vital force has been given the title of ‘pratyaksha brahman’ because it nourishes the body, hence with respect to body, Vayu is Brahman. One salutes that Brahman (Vayu) which takes care of the body\textsuperscript{308}.

Earth as a gross element, can be perceived with the principles of sound, touch, colour, taste, smell and thus is an object of perception to all the senses. So, also is the body an object of perception to all the senses\textsuperscript{309}. This implies that earth

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is possessed of all the five qualities while water possesses four qualities minus
smell. Similarly fire does not have qualities of taste and smell but air is known by
two qualities of touch and sound and akasha by only one quality of sound. The
space in earth (external) and the space in stomach (internal) is same\textsuperscript{310}. Tai.Up.
states “that is inside the heart” – Antarhrdyaya Akasha which is also called

We must note in this context that senses do not refer to the external muscular
organ that is given to our normal perception. They refer to the subtle power which
manifests itself through the respective sense organs which is capable of knowing.
The very sense organ cannot be sensed, but it is inferred.

These basic elements are both in gross and subtle forms. The subtle state of
these elements is referred to as Tanmatras which are deciphered only by their
qualities. They can also be distinguished as perceptible and non-perceptible
elements. Prthvi (earth), ap (water) and agni (fire) are perceptible while vayu (air)
and ether (akasha) are non-perceptible elements. The subtle elements become gross
elements by combining in various proportions according to a specific formula
called as Pancheekaranam which is a process of five-fold self-division and inter-

\textsuperscript{310} Mandukya Upanishad 12; Swami Gambhirananda (Tr.), \textit{Eight Upanishads- Vol I (With the commentary of
combination of elements. The physical body is formed from the gross elements but the sense-objects are formed by the tanmatras\textsuperscript{311}.

Our ancients had perceived man to possess threefold body with fivefold sheaths. Besides the physical body, every person is composed of couple more bodies called as subtle body and causal body. They are called as

1) Physical body or gross body or sthula sharira serves as the medium of waking state.

2) Subtle body or linga sharira serves as the medium of dreaming state.

3) Causal body or kaarana sharira serves as the medium of dreamless state.

Physical body is the outermost body though which man experiences the outside world while causal body is the innermost. The five organs of perception and action are located in the gross body. Though visible, these organs are not real. The real organs being invisible belong to the subtle body but the sense perception happens with the help of the outer body organs. It is worthwhile to note here that the sense of touch can be felt throughout the body unlike other sense organs which are limited to a specific part of the body\textsuperscript{312}.

The fivefold sheaths or kosas relate to physical sheath (annamaya kosa), vital sheath (pranamaya kosa), mental sheath (manomaya kosa), intelligent sheath

\textsuperscript{311}T.N.Sethumadhavan (Trs.), Prasnopanishad, \textit{Op.Cit.},


\textsuperscript{312}Swami Satprakashananda, \textit{The Goal and the Way (The Vedic approach to life’s problems)}, Ramakrishna Math, Madras, 1977, p.50.
(vijnanamaya kosa) and the blissful sheath (anandamaya kosa). The physical sheath has in it the vital sheath, which in turn is filled by mental sheath, the mental sheath by intelligent sheath and intelligent sheath by bliss sheath. The connection between the three bodies and the five sheaths is that the physical body consist of the physical sheath alone while the subtle body has the next three sheaths of vital, mental and intelligence sheath and lastly the causal body has the bliss sheath.

**IMPORTANCE OF PANCHAMAHABHUTA**

In the ancient scriptures, we find mentioned separately each of the primary elements being the substratum of the universe. This can be elucidated as follows:

1) Br.Up. states that water existed originally and everything else followed from them.

2) Ch.Up. states that air is the substratum of the universe as it is the "final absorbent" of all things, hence should be taken as origin of them. The explanation given is that when water dries up it goes to air, fire is extinguished in air, and sun and moon also set in air.

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313 See Vide p.36 in this thesis.
3) A verse in the Kathopanishad states that fire, having entered the universe assumed all forms though not mentioned explicitly\textsuperscript{318}. Ch.Up. also states that fire was the first to evolve from the Primeval Being\textsuperscript{319}.

4) In Ch.Up., space is considered as the origin of all things. To recognise during that age that ether is less tangible than other elements and according it to be the substratum of all things is highly commendable. It further corroborates by stating "ether is the final habitat" and "meditate upon ether as the highest reality"\textsuperscript{320}.

5) Finally, Tai.Up. states that not-being is the substratum of the universe. The statement "In the beginning there was non-existence" has been interpreted by the commentators to signify that what existed in the beginning was the subtle unmanifest (Avyakta) and not the absolute "non-existence"\textsuperscript{321}.

A brief note on each mahabhtua may not be out of place in this context.

1) **Akasha**: Akasha or ether was discovered by Indians long ago but in modern times it was discovered by Marconi in the 19\textsuperscript{th} century. Ether is a very refined substance which is capable of carrying the sound waves and light waves.

The relation between air and akasha is that vibrations fill the air in void. Tai.Up. throws light on two types of ether that is, one inside the body and the

other outside the body. The ether inside the body is regarded as the seat of mind. The ancients knew about the relation between ether and sound which is brought out in this hymn: “Do not destroy anything of the sky and do not pollute the sky. Do not destroy anything of the Antariksha”.

The concept of ether is different from the concept of dik in that dik is an empty space and can be had only with reference to some object occupying a particular space. That means Dik is relative in the Advaitic sense, but according to Vaisheshika, dik has an objective independent existence. It is only the Vaisheshikas who have distinguished akasha (ether) from dik. Prof. Hiriyanna defines dik as space and takes akasha as ether.

In Gandhiji’s letter to a foreign naturopath, there is a mention of panchamahabhutas while detailing about Nature cure. He says, “I am now trying to evolve a system of Nature cure suited to the millions of India's poor. I try to confine myself to the propagation of such cure as is derivable from the use of earth, water, light, air and the great void”. It is noteworthy that Gandhiji is using the term ‘great void’ for Akasha while other texts are using the term ether. He does not go about explicating the meaning of the term ‘void’. Though Gandhiji was not

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a professional philosopher as to go deep into giving any ontological explanation for the implication of the term akasha, yet there is a suggestion in his statement that akasha is a positive substance.

2) **Vayu**: Vayu or Air is called as ‘Matarishva’ as it moves in space that sustains all life\(^{326}\). “O Air, you are our father, our protector” is ample proof that the ancient sages knew the importance of unpolluted air as being vital for all life forms. They were aware that air during its flow would pick up in its wake the medicinal properties from the herbs and plants\(^{327}\). Such medicated air with its healing powers help human health\(^{328}\).

The following mantra of Shatapatha Brahmana quotes “Sun and rest of universe is woven in a string, and that string is vayu”\(^{329}\). In another instance, Sage Yajnavalkya replies to his student who asked the question about what binds the universe together, "By air indeed, O Gautama, as thread, this world, the other world, and all beings are held together". Vayu is linked to Prana which is the life sustaining breath\(^{330}\).

A mantra from Prasnopanishad reveals that there are pancha pranas or five vital airs that is found in the body. It states “The sun is verily the cosmic prana. It


blesses the in-breath (prana) in the eyes. The divinity which is in the earth supports a person’s out-breath (apana). The ether or akasha between the sun and the earth is the equalizing-breath (samana). Air is the diffused-breath (vyana) and also, the air that maintains heat in the body is (udana)”331.

The wind or air is called the first born being connected to the primordial waters. “It is said to be of unknown origin; for nobody knows where it goes and where it comes from: it wanders free, is heard but not seen, is invisible, can only be felt, experienced, sensed, without being comprehended or understood”332. The passage reveals the mysticness of Nature.

The ancients were aware that the role of winds along with sun rays was important for rainfall. They request the winds to blow fiercely and vigorously so that the winds can rain on the barren lands. They request the floating clouds to enable the clouds to gather and descend from the heavenly abode in their multicoloured glorious form to send the celestial raindrops called ‘amrt’. In quite a few hymns the Vedic sages praise the clouds requesting them to be their benefactors, givers of wealth and happiness333. Thus, the poetic beauty can be visualised in their description.

331 Pr. Up 8 ; T.N.Sethumadhavan (Trs.), Prasnopanishad, Op.Cit.,
3) **Agni**: The place of Agni is earth, of Vayu or Air is Ether and Surya is heaven\(^{334}\). Agni is said to have preceded the world as the first embodied being. It supports the universe in the form of virat, and is a means for attaining heaven\(^{335}\). Another name for Agni is ‘Jataveda” where Veda implies knowledge and jata means created. That means he who knows (veda) all that is created is Jataveda\(^{336}\).

In the form of the sun, Agni is regarded as the soul, and also as the ruler and preserver of the world\(^{337}\). Its almighty primordial nature is depicted as non-existent (asat) and existent (sat); that is, the first cause and the first effect of this creation\(^{338}\). By non-existence, it is meant the subtle or unmanifest or causal stage and by existence is meant the gross or manifest stage or the stage of effect. The term asat does not mean absolute non-existence as already specified.

In the Rig Veda tenth mandala, Agni is given high praise for his role in energising subtle life forms by forming the necessary bridge between father – sky, dyauh – pitru and mother earth - prthvi or matter\(^{339}\). Agni is the vital force that is lodged in the body by means of food. One should take vows ‘not to deprecate

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\(^{337}\) Maitrayani Upanisahd 6.35.


food’ (annam na nindyaat | tadvrtam)$^{340}$ and ‘not to discard food’ (annam na parichakshita | tadvrtam)$^{341}$, but make food plentiful implying that one should share food with everyone but not hoard and waste food. Food is worthy of praise as it is an aid to realization of Brahman which implies that food is needed for sustaining oneself$^{342}$. Thus the ethical implications of the Upanishadic ontology can be seen in these verses.

**SUN’s ENERGY as AGNI**

The paramount importance to Agni or Fire can be seen in the Rig Vedic hymn which states that Sun is not only provider of knowledge but also the destroyer of all evils. Recognising that the sun’s energy in the form of heat is required for wellbeing of humans, they offer prayers seeking nourishment, protection, happiness and wealth.

Without sun’s rays, the heat from the ocean cannot get converted to water vapour. Water vapour helps in formation of clouds which bears rains that help in the growth of vegetation. This logic was understood and interpreted by Vedic sages by stating “May the river, the clouds, and herbs and vegetation give us happiness,

invoke the fire divine”. Rays of the sun are so powerful that they are capable of driving away not only man’s physical diseases but also evil thoughts\textsuperscript{343}.

The psychologists have observed that people spending even few hours outdoors benefit from the sun’s rays that help in releasing neurotransmitter serotonin in humans. The release of this serotonin makes them alert, cheerful, happier and improves memory power\textsuperscript{344}. Sun rays help in production of Vitamin D in the skin through a photosynthetic reaction which is vital for bone growth especially for growing children\textsuperscript{345}. Serotonin helps in transmission of nerve impulses and is known to trigger the release of substances in the blood vessels that regulates mood swings in man\textsuperscript{346}. It is also a fact that too much of sun’s energy is also harmful to living beings; hence the other bhutas are also given equal importance.

It is only with the instrumentality of fuel like oxygen that one can visualise Agni. Agni is said to be “Kindled and established on the earth”. In the same verse, high praise is given to Agni by stating that it is “divine, purifier, invoker, eternal, all-wise, adorable” and as such requesting such a divine element to help man “establish relation with Nature’s forces”. Vedic man understood Nature and natural

\textsuperscript{343} R.V.5.29.10; 7.76.1; 7.45.3; 6.52.6 and S.V 397; Pandit Satyakam Vidyalankar(Ed.), \textit{The Holy Vedas – Hymns and Golden Treasury, Op.Cit.}, Pp. 292-293,295.
\textsuperscript{345} \texttt{http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2290997/>}, accessed on 28.02.2015.
happenings so perfectly when he states that all beings awaken with the rise of the sun, so too do flock of birds that fly at dawn, which is visible even to do this day\textsuperscript{347}. Sun is the power source that energises each and every living creature on earth.

**AGNI in WATER**

Water and fire belong together and this association is amplified in the words ‘dwell in the waters’, is the ‘Son of waters’ and ‘in the waters, O Lord (Agni) is your seat’, all of them reflecting Agni’s connection with water\textsuperscript{348}.

The following hymn indicates existence of Agni in water “In whom King Varuna, in whom Soma, in whom the All-gods drink exhilarating strength, into whom Agni Vaisvanara has entered, let those waters, the goddesses, help me here”

The verse is:

\begin{align*}
\text{Yasu raju varuno yasu Somo,} \\
\text{Visye deva yasu urjam madanti;} \\
\text{Vaisvanaro yasu Agnih pravistas:} \\
\text{Ta Apo devir iha mam avantu} \textsuperscript{349}
\end{align*}

Agni is symbolic of strength, dynamicity, action. Hymns that indicate Agni’s presence in water is seen in usage of words such as “abode in water”, “born in

\textsuperscript{347} R.V. 2.3.1; 1.49.3 ; Pandit Satyakam Vidyalankar(Ed.), *The Holy Vedas – Hymns and Golden Treasury*, Op.Cit., Pp. 167, 297.
\textsuperscript{348} RV.II,35,13 ; X. 45.1;3; X. 121,7 and SB VIII,4.1,6 ; Raimundo Panikkar (Ed.), *The Vedic experience – Mantramanjari*, Op.Cit., p.117-118.
water”, “womb of water”, “child of water”. All of them relate to hydro electricity. Generation of electricity through hydro power has been proved scientifically and is being used currently. Hydro electricity process might or might not have been in existence during the ancient times, but they were aware of the fact that Agni is in water and it manifests through water. The concept of Satkaryavada can be seen here. One cannot create anything out of nothing. The hymn that indicates the existence of Agni (generation of power) in water, relates to the extension of non-distinction of water and Agni. Leave alone interconnection, they can be mutually transformed also. Hence, in the end, everything becomes one. This is what is implied by Swami Vivekananda’s words ‘matter is solidified energy’. Matter comes out in the form of five elements and the elements come out through the subtle matras or tanmatras. Thus one can trace every modern technological development to the ideas which were already present in the ancient period.

4) Ap: The Vedic seers also knew the importance of water as being a part of Nature and thus request man to follow the divine natural law which never gets violated even by the flowing waters. One has to pray to the rivers with love and affection. During ancient time, man used to meditate in solitude amidst Nature. Then Nature was resplendent with forests where there were abundance of trees.

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herbs and rivers. The sages gained divine intuition amidst such serene surroundings\textsuperscript{351}.

Pure water, called as ‘Divyajal’ has several properties such as sheetam meaning cold to touch, suchi or clean, shivam meaning purifier, ishtam meaning tasteful, vimalam meaning transparent and laghu meaning light weight\textsuperscript{352}. Water is the essential requirement for all kinds of life forms. The five forms of water that is found in the environment are in the form of rain water or divyah, natural spring or sravanti, wells and canals or khanitrimah, lakes or svayamiah and as ocean or samudrah\textsuperscript{353}.

Vedic hymns are cryptic in their assessment. Hence in saying that Varuna’s sphere is the earth, heaven and in the waters\textsuperscript{354}, the interconnection of all three factors namely water, winds and rain has been depicted in this verse. The Vedic poet is referring to the eternally known natural phenomenon of the waters rising as water vapours surreptitiously like a spy in the sky only to descend in the form of rain to earth\textsuperscript{355}. Wind is the water ‘can holder’ where as cloud is the water ‘can’, containing water that gets showered as rains on earth.

\textsuperscript{351} R.V.7.47.3; 8.6.28 ; Pandit Satyakam Vidyalankar(Ed.), \textit{The Holy Vedas – Hymns and Golden Treasury}, \textit{Op.Cit.}, p.326.
\textsuperscript{352} <http://www.indiaheritage.org/science/edviron.htm>, accessed on 21.05.2014.
Water is considered faultless, pure and divine. It comes in the form of rains borne by the colourful overbearing clouds and thus bears the sweet essence of the earth. These waters are rich and beneficial to all creatures and are part of the elements in Nature and bring joy to those relishing it.

Water is used to cure diseases as it contains all the medicinal value required for curing and rejuvenating our senses. It helps man to live a long and healthy life. They also help in progeny, thus making man happy. The Vedic seers acknowledge the fact that mistakes are committed by man either with or without knowledge. The mistakes probably indicate here ‘misuse’ or ‘pollution’ brought about by man. Mistakes made were taken to be a serious offence, which made the Vedic seers ask for forgiveness of waters so that man can make amends. They depicted how the waters in the form of rivers collect together and flow towards the ocean maintaining the purity throughout.

Modern man being aware of this fact, still pollutes water in the various stages of its flow. Thus it is advised in the scriptures that man has to establish empathetic identity with Nature and offer prayers to the divine waters not to cause harm but be beneficial to all.

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Water is described as the most vital part of survival, powerful vehicle of fertility and they form rivers like arteries vivifying the earth. Also, water possesses an “integral reality”, “neither solid like earth nor intangible and gaseous like the air or wind”\(^\text{358}\). Hence, the water is called as ‘laghu’. Thus water is called as “jeevan” or life giving and strength of a planet and a source of energy for every living organism.

5) **Prthvi**: Earth cannot be considered only from the geographical or material angle as it is a part and parcel of human being himself. Availability of plenty of natural resources during ancient times made Vedic man note the same point, but yet he insists on giving the same status to mother earth as given to God and hence requests man to worship the mother earth, the giver of life as we owe debt to her. The earth has many natural bounties to bestow to human kind. Earth and heaven combine together to produce rains which is pre-requisite for survival of all creatures\(^\text{359}\).

Earth is the “cosmic giant” and hence the “dwelling place for all living creatures”, “conveyor of Agni”, “bestower of blessings”, “receiver of prayers”\(^\text{360}\) and all this are explained in Prthvi Sukta\(^\text{361}\). The different names for Earth are Vasudha, containing wealth; Hiranyavaksha, having gold bosom; Jagato

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\(^\text{361}\) See Vide Pp.77-84 in this thesis.
Niveshani, abode of whole world; Visvambhara, bearer of the universe\textsuperscript{362}. Great reverence is attributed to earth by describing it as Goddess and calling it mother. The nature of the earth is such that she exists so that she can protect us against evil. Earth containing pure water which purifies all that is impure thus cleansing everything that goes in it. Earth is the purifier of all which is undesirable and unclean. Hence, man should use the resources given by earth judiciously by not hurting its vital parts\textsuperscript{363}.

\textsuperscript{362} Shashi Tiwari, \textit{Origin of Environmental Science from Vedas}, \textit{Op.Cit.}, p.162
\textsuperscript{363} A.V 12.1.35 ; See Vide Pp.44-84 in this thesis.