



VOL. 2

VEDIC, BUDDHIST AND JAIN TRADITIONS

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Contents

- *Foreword (Kapila Vatsyayan)*
- *Introduction (Sampat Narayanan)*
- 1. Pañcamahābhūtas : ORIGIN AND MYTHS IN VEDIC LITERATURE (S.K. Lal)
- 2. Pañcabhūtatatvanirūpaṇam (N.S. Devanathachariar)
- 3. Bhūtas IN VEDIC RITUALS AND LITERATURE (T.N. Dharmadhikari)
- 4. WATER ELEMENT : IN VEDIC COSMOGONY (Usha R. Bhise)
- 5. GIST OF COSMOLOGICAL IDEAS IN VEDAS (Srinivas Madabhushi)
- 6. COSMOGONY AND COSMOLOGY IN MAJOR Upanisads (K.V. Mande)
- 7. THE FIVE Mahābhūtas : A SEMANTIC ANALYSIS (A.M. Ghatage)
- 8. THE Mahābhūtas : THE BUDDHIST APPROACH (Pratibha Pingle)
- 9. CONCEPT OF Bhūta IN EARLY BUDDHIST PHILOSOPHY (Mahesh Tiwary)
- 10. THE CONCEPT OF GREAT ELEMENTS IN JAIN COSMOLOGY (Mangala Mirasdar)
- 11. Mahābhūtas in Jyotiṣa Śāstra (S.D. Sharma)

The second volume in the series on Prakṛti centres on the texts, probing deep into the Vedic rituals, Upaniṣadic philosophies and Jyotiṣa Śāstra. There is a prodigious consideration of the concept of mahābhūtas in Buddhism and Jainism. It also brings forth the many convergences and divergences of the viewpoints between and amongst these different streams of Indian thought.

- *List of Contributors*

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Foreword

In 1986 when the first of the Multidisciplinary and Cross-cultural Seminars was held under the aegis of the Indira Gandhi National Centre for the Arts, there was a trepidation. In my Introduction to the Volume on *Concepts of Space : Ancient & Modern* I have shared with the readers the sense of challenge as also of gratification. Then, it was not easy, nor has it been easy in the subsequent years to bring together people from different parts of the world of diverse disciplines and levels of society to speak through a multiplicity of languages to reflect and converse, and have a meaningful dialogue on the fundamental concerns of humanity in the past or present, in science or religion, philosophy and the arts, in civilizations as far apart as Egyptian, Chinese, Greek and Indian, permeating expressions through the written or the oral word, generating a language of myth and symbol which communicates across cultures.

The gathering, the dialogue and the discussion on a single concept of **Space** (*ākāśa*) made it evident that the more fundamental and universal the concept, the greater the probability and possibility of diverse interpretations at multiple levels. The single concept of **Space** had taken us through the journey of the concepts of cavity, cave, aperture, fountainhead, body, air, sky, vacuity, cipher, point and much else. The scientist and the technologist explored the concept through their method of empirical investigation, the philosopher and the metaphysician, artists and the sociologist through perennial questioning and speculation. The two approaches and methods we learnt were complementary and not in conflict. The arts, architecture, sculpture, painting, music and dance enclose, embody and evoke space. Poetry creates vast edifices of space as spatial situations, and evoke the experience of outer and inner space.

The concern with **Space** (*ākāśa*) could not be dissociated from the concern - the concept of **Time** (*kāla*). Two years later, a similar gathering with many familiar faces (who communicated with one another with greater ease) gathered to deliberate upon the many dimensions of **Time** (*kāla*). Once again, the discussions at that Seminar revolved round the micro and the macro levels of the single concept, from molecular time to the cosmic time, from the time of biologists to the time of astronomer, from the time of the seer and meditator to the time of the architect, sculptor, musician, dancer and the poet. Besides the familiar faces, there were others who had joined the family of the IGNCA. The enlarged family gave this Seminar a depth and richness, unique and unparalleled. The experiences His Holiness The Dalai Lama articulated in words lucid and resonant, were juxtaposed with the precision and meditation of a scientist - the late Professor D.S. Kothari. The depth of the experience of **Time** in religious traditions, Islamic, Christian, Hindu, Buddhist, Jain and Hebrew, and the embodiment of inner and outer **Time** in poetic language was shared through rapt silence through the voice of the Poet Kathleen Raine.

Logically and naturally, from these two fundamental and universal concepts the next step in our quest for exploration of a single universal theme through diverse paths recalling

the Ṛgvedic Verse, **Truth is one; man knows it by different names**, was to explore the concept of the primal elements (five or four) in different civilizations which have governed and determined the evolution of civilization and culture. Perhaps, the first conscious awareness of Man was the fact that his life depended on water, Earth, air, fire and, above all, space. Understandably, in all civilizations, at the most sophisticated level as also at the simplest level, the recognition that the primal elements were primary and indispensable for Man, is universal. Myths of the origin of the universe, creation, cosmology and cosmogony, have been developed on the concept of the elements which are four or five. There is a vast body of primary sources and equally extensive and complex a history of critical discourse on the nature of primal elements and their indispensability, not only for Man but for all life on Earth.

The subject was too vast and too monumental to be taken up in a single Seminar. Organizationally, therefore, this time it was decided to hold five successive but interlocked Seminars, one leading to the others, so that they could all culminate in a final international cross-cultural multidisciplinary Seminar. Since cultures, disciplines, and levels of society are not completely autonomous and insulated, there was a planned and understandable overlapping between one Seminar or Workshop and another.

The five Seminars were divided more for facility than the autonomous nature of each area or field. The discussions, therefore, at one Seminar were taken up and did interpenetrate into the next.

Logically, the first of these Seminars focused attention on the articulations of cohesive communities in the world who have lived in harmony with nature and who have communicated with the five elements in a continuous unceasing dialogue. To them the nature of the five elements - water, earth, air, fire and space - is not a matter of intellection or breaking down into separation and divisions of totality or a whole; instead, it is a question of life here and now. This is manifested in ritual practices which sacralize nature so that man can live as an integral part of the universe, the rhythmic movement of the changing seasons, and the symmetrical punctuation and cycle of seed sprouting, growing, flowering, fruiting, decaying and renewing. In modern discourse this is understood as the need for man to live in harmony with the environment for an evolution of socio-cultural systems and methodologies for ensuring the maintenance of ecological balances. The lives and lifestyles of these cohesive groups have begun to acquire renewed validity on account of what man has done to pollute, contaminate, desacrify and desecrate the very fundamentals that sustain him and make it possible for him to live on earth. The first Volume is based on the papers submitted at this Seminar.

The second Seminar moved the emphasis to the textual traditions. There is a vast body of literature in Greek, Chinese and Indian sources where philosophic discourses have been held on the nature of the universe, the nature of matter, the elements and the possibility of transmutation of the gross to the subtle. In India all branches of the philosophic streams

have discussed the nature of the *Bhūtas* and the *Mahābhūtas*. The discussion ranges from the earliest articulation on the subject in the *Ṛgveda* to the philosophic schools of Vaiśeṣikas, Vedāntins, Śaiva and the *Āgamas*. The old system of *Āyurveda* in India, as much of medicine in Greece in a very different way, is based on the concept of the *Mahābhūtas* in the constitution of the body itself. The very conception of the five elements constitutes the body. Texts for Indian astronomy, chemistry, metallurgy are replete with discussions on the elements. This discussion cannot be dissociated from a speculation, and discourse of, the nature of the universe, cosmology, cosmogony. The second Seminar delved deep into each of these aspects specially in the Indian tradition - Vedic, Brāhmaṇical, Upaniṣadic and Tāntric. In addition, there was a consideration of the concept of the *Mahābhūtas* in Buddhism and Jainism. This Seminar unfolded the very complex and subtle aspects of the discourse on the nature of the matter, the fivefold organic matter and the five external objects. It also brought forth the many convergences as also divergences of viewpoint between and amongst these different streams of Indian thought as exemplified in the textual tradition. The Seminar was hosted by the Department of Sanskrit, University of Poona, Pune. The second Volume of this series is based on the papers and the discussions held at this Seminar.

Logically, the third Seminar had to and did explore the discussions as also the manifestations of the five elements in the Indian arts, along with their *Āgamic* background. As is well-recognized, while the *Upaniṣads* provide the basis for speculative thinking, the *Brāhmaṇas* give the methodology of ritual practice (*Yajñā* and *Prayoga*). Parallel is the development in early and later medieval India where the texts on *Vāstu* and *Śilpa* provide the frame-work of the abstract principles of creating concrete structures through different media and in different forms. The *Āgama* is the twin which provide the methodology of enlivening, giving life and breath to the concrete structures and forms of art. If monumental architecture, sculpture, painting, music or dance, poetry or theatre, is created on the comprehension of space and time, they are even more built on the system of correspondences first for embodying and then evoking the five elements. The fascinating and unceasing cycle of the movement from the inner experience to the creation of form, which would incorporate the five elements and the employment of a methodology of ritual, is outlined in the *Āgamic* texts only to achieve the end experience of the transformation of the gross to the subtle. This was the subject of this Seminar. From different vantage points of the architect, sculptor, painter, musician and dancer, the field was re-opened to examine the structure of the Indian arts at its primal level.

Naturally, theories of aesthetics which have emerged from such a viewpoint had to be discussed and many questions asked. The third Volume incorporates the span of the papers presented and the discussions held at this Seminar.

If the arts deal with the process of transmutation and mutation of the subtle to the gross, and the evocation of the subtle from the gross, in other words, the process of the abstract and the concrete suggesting, stimulating and evoking the abstract, then the

astrophysicist deals with the nature of primal matter itself. No discourse on the elements could have been completed by excluding the discussion on modern physics of elementary particles and the most recent developments in microbiology. The fourth Seminar took up the question of the nature and function of matter itself and discussed the theories of the creation of the universe and emergent cosmologies in the modern physics. This was juxtaposed with the consideration on the nature of matter and consciousness. It was obvious that the new developments in science were, perhaps, not all that far remote from the earlier insights in the context of consciousness. The debate between the nineteenth Century mechanistic science and the modern physics was re-opened. This was juxtaposed with speculations and the philosophic discourses in the Indian philosophic schools. If the second Seminar dealt with the textual traditions and the philosophic schools of *Sāṃkhya*, *Mīmāṃsā* and the *Vaiśeṣikas*, this Seminar looked at these traditions as structuralistic traditions from a scientific point of view. The dialogue created between the method of science and the method of speculation was invigorating. The fourth Volume comprises papers and discussions at this Seminar.

The fifth and the last Seminar was a coming together of cultures as also disciplines. Coordinators of the earlier Seminars presented brief Reports on each of the Seminars which provided the background and the landscape. The international community, comprising scientists, biologists, philosophers, anthropologists, ecologists and artists shared not only the myth and cosmology of their particular societies but also there was a most meaningful dialogue between those who lived in the awareness of the primordial myths of the elements and those who had employed the tools of science to explore the nature of the phenomenon of matter.

The putting together of the deliberations of the five major Seminars, as a single or a multiple-volume, is a daunting task. Through the combined efforts of the Coordinators of each of these Seminars and, particularly, the Chief Coordinator - Professor B.N. Saraswati and his associates - it has been possible to prepare the five Volumes based on the deliberations of these Seminars as also a companion exhibition which was called "**PRAKṚTI: The Integral Vision**".

It is my hope that these Volumes will provide material for further discussion and dialogue. The perennial nature of the theme and its urgent and contemporary validity will, I hope, make these Volumes significant. As I have said earlier in my Introduction, Man stands today at a moment where he is threatened by the pollution, inner and outer, of his own making. The primal elements and the urgent need for purification through austerity and discipline are not the matters of intellectual discourse alone. Their maintenance and sustenance, and the purity of these that are primary and primal, are the objectives of our life, lest death overtakes us.

9th June, 1994

Kapila Vatsyayan

Introduction

India's textual tradition consists of the Vedic musings, Upaniṣadic thoughts, rituals, *Darśana* of various orders, *Jyotiṣa*, *Āyurveda*, *Vāstuśāstra* and so on. Each of these texts deals with concepts concerning man and the Universe. The essays compiled in this Volume are based on the **IGNCA** series of seminars on five fundamental elements. Here the development of the concept of elements is traced through the *Vedas*, the *Upaniṣads*, rituals and other *Śāstras*.

The Vedic section is dealt with by S.K. Lal, Srinivas Madabhushi and Usha Bhise. The earliest musings of the Ṛṣis did not specify the five *Mahābhūtas* but have described the creation from *tamas*, from Primordial waters, from *Agni*, from Prajāpati, *Brahman*, *Ātman*, *Ākāśa* etc. These elements have been deified in the Vedic *Sūktas*, but the later Upaniṣadic conclusions give a definite shape to these concepts.

S.K. Lal traces from the earliest Vedic period the development of the concept of *Pañcabhūtas*. In the beginning water, fire, air, sun and earth were considered not merely as physical elements, but as a combination of both sentient and non-sentient aspects, which led them to treat these elements as deities, to be propitiated for getting their benevolent gifts and escaping from their ire. This was the result of observation of their pervasive nature in all things, and their creative power.

The Hymns of creation of the *Ṛg Veda* were reflected in the *Sūktas* of *Yajur* as well as *Atharva Vedas*. Srinivas Madabhushi discusses as to how, the *Tamas*, *Ambhas* and the fire were considered as the Primeval causes of creation and the development of a conscious principle's will - which is called *Brahman* - as the universal cause, comparing them with modern scientific theories.

Usha Bhise underscores the dominant principle of primeval waters which were considered the cause of the universe and they were treated as sentient beings, having a will and how the earth etc., emerged out of those waters. In this description, she points out the role played by the floods in the Indus Valley of those times.

R.K. Mande discusses the *Brahman* concept, the *Trivṛtkaraṇa* of *Chāndogya*, the *Pañcīkaraṇa* based on *Taittirīya*, the spider example of *Muṇḍaka* etc. She further elucidates the concept that the essence pervading all things is same and the ultimate aim of man considered there being the conquering of elements.

T.N. Dharmadhikari traces in the various Vedic rituals, how the deities waters, fire, air and others were worshipped and offerings were given. This again confirms the conviction of Vedic seers that the *bhūtas* were not merely insentient elements but were a combination of both conscious and non-conscious principles.

Pt. N.S. Devanathachariar in his Sanskrit paper gives the arguments of Buddhists for the non-acceptance of *Ākāśa* as a *bhūta* and the counter-arguments of the orthodox school. An English translation of this paper is also provided for the benefit of those who would like to read in that language.

Mahesh Tiwari's paper discusses the Buddhist system which approves of only the four *bhūtas* and how the adjective *Mahā* was added to the name *bhūta* because of their vastness. He further elucidates that all these *bhūtas* are accepted as mere appearances - they exist only in name and form. There is no creation as such in their system and what is appearing as world is a beginningless stream. He further discusses the transition of the term *bhūta* as *dhātu*.

A.M. Ghatage, traces the chronological development of the word *bhūta* in Hindu and Greek traditions - which presupposes a living principle and not merely a dead matter. Just to avoid this double meaning, the Buddhist and Jains used the term *dhātu* in later times. The final stage of development as a psychic principle is traced by him in his paper.

Mangala Mirasdar takes up the Jaina viewpoint of *pañca Astikāyas* and shows how *Ākāśa* is considered not as an element but some evolute giving space to other material objects.

Pratibha Pingale describes the *pañca Skandhas* as detailed in *Abhidharma Kośa* and other works.

S.D. Sharma discusses in his paper how in Astronomy the five elements were treated - their good and evil aspects and the methods of alleviating their evil effects and increasing the good effects.

From the papers that are presented here, one can see that the rudiments of later *Darśanas* were already there in the *Nāsadīya Sūkta*, the *Ambhas Sūkta* etc. The findings of Vedic seers are corroborated in some respects and controverted in others, with the development of modern science. The Upaniṣadic Philosophies still remain the bedrock of Indian thought. Their conclusions stress that it is not the *prāṇa*, *manas* etc., that animate the body, but a conscious principle running through the veins and arteries as the sap of a tree. This sap is universal but takes different shapes even as the bodies differ due to different wombs and seeds.

Another aspect of Vedic philosophy is that the *Brahman* expands and contracts in cycles and in this process the invisible makes itself visible through various forms. The infinite or all-pervading principle can neither increase nor decrease.

The third aspect is about the evolution of human beings. *Bṛhadāraṇyaka Upaniṣad* and other works talk of separate creations of man, animal and others in pairs of the

male and female counterparts. This theory confirms that both the male and female aspects are not complete in themselves, but are complementary and supplementary to each other. The *Ardhanārīśvara* principle or Lakṣmī residing on the chest of Lord Viṣṇu are all born out of this understanding.

Finally I thank Dr. Kapila Vatsyayan for asking me to edit this volume and for the confidence that she reposed in me. I also extend my gratitude to Dr. Saroja Bhate for organising the seminar on "The Concept of Bhutas: Vedic, Buddhist and Jain Traditions" held at the Department of Sanskrit and Prakrit Languages, University of Poona in March 1992. Thanks are due to Dr. Sudha Gopalakrishnan for assistance in editing.

These seminars have enriched our understanding and the objective with which **IGNCA** started them, has been fulfilled to some extent. I hope and wish, that, readers of these Volumes will immensely benefit from these papers.

Sampat Narayanan

01 Pañcamahābhūtas Origin and Myths in Vedic Literature

S.K. Lal

The relationship between man and the universe has been a most fascinating idea that attracted the mind of thinkers in almost every religion, philosophy, mythology, and ritual from primitive age to modern time. The seers of the Vedas have often wondered at various phenomena in the universe. They contemplated over the marvels of nature and the mysteries in the vast and variegated world that they lived in, and attempted to unravel the enigma of creation. They accepted not as final what they saw around them with their physical eyes. In this respect, Ṛṣi Kavaṣa remarks:

naitāvadenā paro anyadastyukṣā sa dyāvāpṛthivī bibharti |

(RV, 10.31.8 ab)

Not only here is this; more is beyond us. He is the bull, the Heaven's and Earth's supporter.

- Tr. RTH Griffith (Gr.)

And therefore the Ṛṣis of the Vedas have not infrequently enquired into the mystery, the mechanism, the creation, and the establishment of the universe. Ṛṣi Dīrghatamas queries:

vi yastastambha ṣalimā rajāṃsyajasya rupe kimapi svidekam |

(RV, 1.164.6 cd)

What is 'That One' who established and fixed world's six regions.

- Tr. Gr.

Ṛṣi Atharvan enquires:

kva prepsan dīpyata ūrdhvo agniḥ kva prepsan paveta mātariśvā |

(AV, 10.7, 4 ab)

Whither desiring to attain does Agni flame aloft? Whither desiring to attain blows Mātariśvan? - Tr. W.D. Whitney

Ṛṣi Viśvakarman questions:

kim svidvānaṃ ka u sa uṛkṣa āsa yato dyāvāpṛthivī niṣṭataksuḥ |

(RV, 10.81.4 ab)

What was the tree, what wood in sooth produced it, from which they fashioned out the earth and heaven

- Tr. Gr.

Such enquiries did stir the inner vision of the Ṛṣis which led them to deep thinking and contemplation. The Ṛṣis envisioned certain guesses, conjectures and conclusions, and put them forth for the sake of posterity. They presumed that the inferences resulting from their deep thinking, meditation, and contemplation were not only true to them in their age, but also to the generations to come in future:

devānāṃ nu vyaṃ jānā pra vocāma vipanyayā ।

uktheṣu śasyamāneṣu yaḥ paśyāduttare yuge ।

(ṚV, 10.72.1)

Let us with tuneful skill proclaim these generations of the gods, that one may see them when these hymns are chanted in a **future age**. - Tr. Gr.

Thus, the Vedic seers have left for us a number of guesses, conjectures, speculations, and postulations regarding man, universe and its maker. Their opinions vary. Some time, the Creator of the universe was thought of as *Aja* (the primeval, everlasting, uncreated being);² some time, it is *Ekam* (the one) (ṚV, 10.81.3);³ at other time, it is Indra who forces the earth and sky asunder (ṚV, 10.89.1), and brings out into existence that which was not yet existent (ṚV, 6. 24.5); or the omniscient *puruṣa* (ṚV, 10. 90); or Varuṇa who created air, and fire in the water (ṚV, 5.85.2-4). It could be, in the Ātharvaṇic phraseology, *Brahmāṇḍana* (AV, 4. 34, 35); or *Ucchiṣṭa* (AV, 11. 7), or *Ka* (AV, 10. 2); or *Prāṇa* (AV, 11. 4); or *Skambha* (AV, 10.7,8); or *Virāja* (AV, 8. 9,10); or *Vena* (AV, 2.1); or *Kāla* (AV, 19. 53, 54); or *Brahmacārin* (AV, 11.5); or *Pr̥thivī* (AV, 12.1); or *Rohita* (AV, 13.3); or *Madhu* (AV, 9.1).⁴ It may be Prajāpati of the *Brāhmaṇas* (ŚB, 6.1.1.8); or *Puruṣa* or *Brahman* or *Ātman* of the *Upaniṣads* (*PraśnaUp*, 6.1; *BrUp*, 2.2.1; *TaittUp*, 2.1).

Once a primeval omnipotent Creator was assumed, speculations on the process of Creation must have begun. This may be regarded as the genesis of the concepts of the *Bhūtas*, the material causes or the gross (primary) elements of creation, and of a large number of myths woven around them. The creator must have needs to create material things.

It may be pointed out that the concept of the *bhūtas*, as it is understood in the *Upaniṣads* and in later philosophical texts, does not occur in the earliest *Veda*, the *Ṛgveda*. In the *Ṛgveda*, the term *bhūta* has been used mainly in the sense of 'past', often in the juxtaposition of 'future'.⁵ Further, in almost all its occurrences, the word means sentient or insentient beings (*sthāvarajāṅgamātmakaṃ bhūtajātam*).

However, a few rudimentary ideas of the *bhūtas*, in the sense of gross elements, may be traced in the *Ṛgveda*. The hymn ṚV, 10.58 is an address to a dead man. It is said, the spirit that went away (after death) to the earth (vs. 3), to the billowing sea (vs. 5), to the beam of light (vs. 6), and to the waters and plants (vs. 7), may that spirit return.⁶ In ṚV, 10.18.10, the spirit of a dead man is addressed to go and mingle with the earth. ṚV, 10.56.1 (where Ṛṣi Br̥haduktha addresses his dead son Vājin) states, "Here is one light (terrestrial) for thee, another yonder (mid-air), enter the third (heaven) and be there with united (Tr. Gr.).⁷ In ṚV, 10.16.3, (again a funeral hymn where a dead man has been addressed), it is mentioned, "May thy eye go to the sun, the mind to the spirit (Ātman), go you to the earth, or to the waters" (Tr. Gr.).

On the basis of the above references, it may be observed that the Vedic Ṛṣis did believe in some kind of union with different elements (*bhūtas*) after death, and that the different components of the gross (earthly) body united with the corresponding subtle elements, the *tanmātras* of the *Upaniṣads*. Further, it may be pointed out that the fine constituent members of the *bhūtas* occur in the *Ṛgveda* in the form of five deified natural objects. The words *pr̥thivī*, *ap*, *agni*, *vāyu* and *ākāśa* (or *dyaus*) have been deified in the *Ṛgveda*. These divinities may be regarded as prototypal gross elements (*bhūtas*). A number of myths and legends have been woven around them to bring out their essential nature and characteristic features, that might have led the post-Vedic thinkers to conceive and transform them into the five *bhūtas* constituting the physical universe.

There is no fixed order in the enumeration of the five *bhūtas*. Sometimes, the order is *kham*, *vāyu*, *jyoti*, *āpaḥ* and *pr̥thivī* (*MuṇḍUp*, 2.1.3); sometimes, it is *pr̥thivī*, *ap*, *tejas*, *anila*, *kham* (*ŚvetUp*, 2.12; 6.2), and sometimes, it is *pr̥thivī*, *vāyu*, *ākāśa*, *āpaḥ* and *jyoti* (*AitUp*, 3.3). Many a time synonyms are also used. In this paper we have put the order as : *āpaḥ*, *agni* (because they are found to be inter-linked), *dyaus*, (*ākāśa*), [*pr̥thivī*] (because they form a pair *dyāvapṛthivī*), and *vāyu*.

Āpaḥ

Āpaḥ have been regarded as the first and the foremost element in the *Vedas*. Water (*ap*, singular) is the first creation. *ṚV*, 10.82.1 states that Viśvakarman first engendered the waters and then heaven and earth floating on the waters. Further, in the same *sūkta* (vs. 5), it is said that the waters were earlier than this earth and heaven, much before the *asuras* and the gods came into being. The waters received the primeval germ whence all the gods came into being. *AV*, 12. 1.8 says that in the beginning, there was flood of waters. In the *Nāsadīyasūkta* (*RV*, 10.129), the water has been regarded as the first principle:

tama āsīttamasā gūlahmagre'praketaṃ salilaṃ sarvamā idam |

tucchyenābhvapihitaṃ yadāsīt tapasastanmahinājāyataikam ||

(*RV*, 10.129.3)

Darkness there was : at first concealed in darkness this all was indiscriminated chaos. All that existed then was void and formless; by the great power of warmth was born that unit. - Tr. Gr.

TS, 5.6.4.2 mentions that at first the universe was waters, the moving ocean. Prajāpati, becoming wind, rocked about on a lotus leaf⁸ on the waters. On it he piled the fire; that became this earth, then he indeed formed support.⁹ Regarding the waters as the first element, *ŚB*, 11.1.6.1-3 states through a myth:

In the beginning this universe was water, nothing but a sea of water. The waters thought, "How can we be reproduced"? They toiled and performed austere penance.¹⁰ When they were thus becoming heated, a golden egg was produced. In a year's time, a man, Prajāpati, was produced from that golden egg. He broke open the golden egg. There was no resting place (*pratiṣṭhā*) for him except the golden egg bearing him. It floated around for as long as a year. At the end of the year, he tried to speak. He uttered, *bhūḥ* this become this earth; *bhuvah*, this become air (*antarikṣā*); and, *svah*, this become the yonder sky (*dyaus*).

In the *Hiranyagarbha-sūkta* (*RV*, 10.121, vs. 7 and 8), it is stated that the mighty waters contained the universal germ producing *Agni*, thence sprang God's one spirit (*Ekaḥ*) into being. He surveyed the waters around him containing productive force (*dakṣam*); he is the one God among all gods (cf. also **TS**, 5.5.1.2).

Four whole hymns have been addressed to the waters (*RV*, 7.47; 49;10.9; 30). The waters are regarded as the mistresses of the world (*RV*,10.30.10). They are prayed to grant men procreative power (*RV*, 10. 9.3). The waters received that primeval germ wherein all the gods were gathered (*RV*, 10. 82.6). All creatures are born from the waters (*RV*, 1.23.16, 10.17.10; 32.2; 39.2). They are mostly motherless, and the producers of all that is fixed and all that moves (*RV*, 6. 501). They are the mothers of all beings (*RV*, 1.23.10; 6.50.7; 10.17.10). They are (as one unified divinity) the mother of the sun (*JB*, 3.114). They produce *Agni* (*RV*, 10.91.6; *AV*, 1.31.1). *Agni* entered into them (*RV*, 7.49.4). All objects, movable or immovable owe their existence to the waters (*GB*, 1.129). They are the wives of the gods (*JB*, 1.140). They are the maidens of Soma (*RV*, 10.30.5).

The *āpaḥ*, indeed, are all this world (*TĀ*, 10.22). *ChUp*, 7.10.1 says that it is the waters who pervade everything, big or small: the earth, the atmosphere, the heaven, the mountains, gods, men, animals, birds, grass, plants, dogs, worms, insects, ants. All these (worldly manifestations) are waters indeed.

Waters are the foundations (*pratiṣṭhā*) of all in the universe (*ŚB*, 12.5.2.14). They are a place of abode (*āyatana*)¹¹ for all the gods (*ŚB*, 14.3.2.13). *ŚB*, 8.2.3.5; 6 regards the waters as food.

ŚB, 6.1.1.8ff mentions that Prajāpati created the waters from *vāk*.¹² Waters pervaded everything here; because they pervaded (*āp*) everything here, therefore they are called waters (*āpaḥ*) (*AV*, 3.13.2). A hymn is compared with the flowing water (*RV*, 10.89.4). About the pervasiveness of the waters, *ŚB*, 11.1.6.16 gives the following legend:

Parameṣṭhin,¹³ son of Prajāpati, desired, "Would I were everything here". He became the waters, for, the waters are everything here. Prajāpati, the highest lord, is the waters (*ŚB*, 8.2.4.14).¹⁴

Agni (Tejas)

Agni has permeated the entire universe by his effulgence. He is in the earth, in the herbs, in the waters, in the stones, in men, kine, and horses. It is he who sends down heat (*AV*, 12.1.19) from the sky; the firmament belongs to him, and mortals on earth kindle him as an oblation-bearer (*AV*, 12.1.20). *Agni* is indeed the existence, for, it is because of *Agni* that everything exists (*bhṛ*) here (*āB*, 8.1.1.4.). *Agni* is our spring of life (*ĪV*, 1.31.10). He is described as thousand-eyed and hundred-headed monster (*āB*, 9.1.1.6); he was created as hundred-headed Rudra (*āB*, 9.2.3.32).

Agni has been described as a begetter *par-excellence*. He places the germ in all beings (*ĪV*, 3.2.10), and engenders life on the earth and offspring in women (*ĪV*, 10.183.3). He has created all that flies, walks, stands, or moves (*ĪV*, 10.88.4). He is the bull (*ĪV*, 1.58.5) abounding in procreative seed (*ĪV*, 4.5.3). He is the generator of the two worlds (heaven and earth : *ĪV*, 1.94.4; 7.5.7). He stretched them out (*ĪV*, 3.6.5; 5.4) like one does two skins (*ĪV*, 6.8.3); he kept asunder the two worlds (*ĪV*, 6.8.3).¹⁵ But he is also the son of the heaven and earth (*ĪV*, 3.2.2; 25.1; 10.1.2; 2.7; 46.9). *ĪV*, 10.88.9 says that *Agni* heats the heaven and earth when an offering of fuel is made to him.

Agni is afterwards identified with the sun (*ÎV*, 3.2.14). He is born as the sun rising in the morning (*ÎV*, 10.88.6). *AB*, 8.28 remarks that the sun when setting enters into *Agni* and is produced from him; he unites with the light and rays of the sun (*ÎV*, 5.37.1; 7.2.2). He is the head and the summit of the sky (*ÎV*, 1.59.2; 6.7.1). He causes the sun to ascend the sky (*ÎV*, 10.156.4) who was lying hidden in the sea (*ÎV*, 10.72.7). *Agni*, kindled on the earth causes the sun to rise (*RV*, 5.6.4; *âB*, 2.3.1.5; *TS*, 4.7.13.3). The sun becomes visible when *Agni* is born (*ÎV*, 4.31.11). When men light *Agni* on the earth, the celestials light him in the heaven (*ÎV*, 6.2.3) where he shines (*ÎV*, 3.37.12).

Agni, in the form of the sun, is regarded as the soul, and, as such, he is compared with the *PuruÅa* (*ÎV*, 1.15.1; *âB*, 10.6.1.11). In the *MaitUp*, 6.35, he is regarded as the ruler and the preserver of the world. He is regarded as the *Brahman*, who has entered into all beings (*MaitUp*, 6.38). *Agni* is likened with a bird, he is a divine bird (*ÎV*, 1.164.52); he is the eagle of the sky (*ÎV*, 7.15.4); he has wings (*ÎV*, 1.58.5; 2.2.4). His abode is the highest in the heaven (*ÎV*, 8.11.7) whence he comes to the lower world (*ÎV*, 8.64.15). The third form of *Agni* is the highest (*ÎV*, 10.1.3). To the bright ocean, the sun has ascended (*ÎV*, 7.60.4). *SËrya* has mounted up in the shining ocean (*ÎV*, 5.45.10).

The celestial form of *Agni* is manifest in *ÎV*, 7.39.5 where *Agni* is asked to bring *Agni*. In *AV*, 4.39.9, it is stated that *Agni* moves having entered into the fire.

Agni is said to possess these forms, and much emphasis has been put on the tripartite form of *Agni*. Three forms of *Agni* - *Agni*, *Vjyu* (or *Indra*), and *SËrya* - have afterwards been mentioned in the *Îgveda* (*ÎV*, 1.164.44). He is regarded as the forehead of the sky, and as the earth's centre (*ÎV*, 1.59.2). *ÎV*, 10.56.1 says that there is one light here (for the dead man), another yonder, (and the dead man is asked to enter the third, the three fertilize the worlds with their genial moisture (*ÎV*, 7.33.7), - the three are *Agni*, *Vjyu*, and *SËrya*).

Heaven, air and earth are the triads regarded as the prototypes of the sun, wind, and fire (*JRV*, 8.18.19). *Agni*, *Vjyu*, and *Ëditya* are the hearts of the gods (*âB*, 9.1.1.23). They are the lights diffused all around (*âB*, 6.3.3.16). The sun, the lightning (in the mid-region), and the fire (*Agni* on the earth) have been regarded as three brothers (*ÎV*, 1.164.1). *ÎV*, 10.45.1 states that first *Agni* sprang to life from out of heaven (*dyaus*) as the sun, the second time from (us) mortals (in the form of sacrificial and domestic fire), and thirdly in the waters (in the mid-region) in the form of lightning. The tripartite nature of *Agni* has been explained through myths. In this connection, *âB*, 11.2.3.1; 3 gives the following myth:

In the beginning, this universe was *Brahman* (neut.). *Brahman* created gods, and having created the gods, it made them ascend these worlds: *Agni* this (terrestrial) world, *Vjyu*, the atmosphere, and *SËrya*, the sky. Then *Brahman* itself went up to the sphere beyond. *âB*, 12.4.1.3 compares three sacrificial fires with three worlds: the *Gjrhapatya* with earth, the *DakÅi, jgni* with atmosphere, and the *Ëhavançya* with heaven.

âB, 11.5.8.1-4 relates that: In the beginning *Prajapati* alone was here. He desired, "May I exist, may I be generated". He practised austerity, he wearied himself. From him thus wearied and

heated, three worlds were created, the earth, the air, and the sky. He heated these three worlds; from them thus heated, three lights issued forth: *Agni*, *Vjyu* (who blows here), and *S£rya*. He heated these three lights; from them thus heated were produced three *Vedas* - the *Ígveda* from *Agni*, the *Yajurveda* from *Vjyu*, and the *Sjmaveda* from *S£rya*. He heated these three *Vedas*, from them thus heated, three luminous essences were produced, namely, *bh£Á* from the *Ígveda*, *bhuvaÁ* from the *Yajurveda*, and *svaÁ* from the *Sjmaveda*.¹⁷

The tripartite character of *Agni* has been carried on to the *UpaniÁads* also. *TaitUp*, 1.5.1-3 says that *bh£r* is this world, *bhuvaÁ*, the mid-air, and *sva*, the yonder world. *Mahas* is the sun, because through the sun all the worlds prosper (*mah£yante*).¹⁸ *Mahas* is the fire, *bhuvaÁ*, the wind, *sva* the sun, *mahas* the *Brahman*, because through the *Brahman* all the *Vedas* prosper (*Tait Up*, 1.5.1-3).¹⁹

The Almighty primordial nature of *Agni* is found in the *ÍV*, 10.5.7, where *Agni* is regarded as both non-existent (*asat*), and existent (*sat*); that is, the first cause and the first effect.²⁰ *Agni* is the sap, *Agni* is the substance in this world (*ÓSB*, 6.7.3.3). It is *Agni* who generated food (*ÍV*, 6.52.16). *áB*, 9.3.4.17 describes *Agni* as a universal sovereign. He is compared with the All-Creator *Vi£vakarman* (*áB*, 9.2.2.6),²¹ "who combines in his person the characters of a primeval divine sacrificer and of a creator".²²

Agni is often compared with the *ved£*. The *ved£* is regarded as the navel of the earth (*ÍV*, 1.52.2), and thus, he is counted with the earth (*áB*, 6.2.1.29). Further, *Agni* has been identified with *Praj£pti*. *áB*, 6.1.1.1-5 deals with the birth of *Praj£pati* who is described as a combination of seven persons (*puruÁas*) into one person (*PuruÁa*: *Prj£pati*). And that *PuruÁa* is regarded as *Agni* (fire-altar) who is to be built. That *Praj£pati* desired, "May it multiply, may it be reproduced." By means of *Agni*, he (*Praj£pati*) entered into union with the earth. Thence an egg arose. He touched it and said, 'May it grow'. And the embryo which was inside was created as *Vjyu*. Likewise, by means of *Vjyu*, he entered into union with the mid-air (*antarikÁa*); thence an egg arose; from it, the yonder sun was created. By means of the sun, he entered into union with the sky (*dyu*); thence an egg arose; from it the moon was created, for the moon is the seed (*áB*, 6.1.2.1-4).

Almighty nature *Agni* has been brought forth in detail in the *UpaniÁads*. *Agni* permeates the entire universe. The universe has been compared with five great fires, Viz. (1) fire in the heaven, (2) fire in the clouds, (3) fire on the earth, (4) fire in man, and (5) fire in women. In this connection, *ChUp*, 5.4-9 says:

The yonder world (heaven) is the fire; the sun is its fuel, the rays its smoke, the day its flame, the moon its coal, the stars its sparks; into this fire the gods offer an offering of faith, out of this sacrificial offering arises Soma. *Parjanya* (rain-cloud) is the sacrificial fire; the wind is its fuel, the clouds its smoke, the lightning its flame, the thunderbolt its coals, the hailstorms its sparks, into this fire the gods sacrifice king Soma. Out of this sacrificial offering arises the rain. The earth is a sacrificial fire; the year is its fuel, the ether is its smoke, the might its flame, the points of heaven its coals, the intermediate points (of direction) the sparks; into this fire the gods sacrifice the rain; out of this sacrificial offering arises the food. Indeed

the man is the sacrificial fire; the speech its fuel, the breath is smoke, the tongue its flame, the eyes its coals, the ears, its sparks; into this fire, the gods sacrifice food; out of this offering arises the semen or sperm. Indeed the woman is the sacrificial fire; the lap or her sexual organ its fuel, when one appeals to her, it is the smoke, the vulva the flame, the insertion the coal, the sexual pleasure the sparks; into this fire the gods sacrifice the semen; out of this sacrificial offering, arises the foetus. Thus it occurs that during the fifth sacrificial offering the waters come to be called as *PuruĀa*. After the embryo, covered by the membrane, has lain in the interior for ten months or as long as it may be, he is born. After one is born, he lives so long as his life duration is. After he is dead, they carry him to his destination, the fire, from which he had come, out of which he had arisen.²³ *ĀB*, 12.5.2. It gives detailed rites for burning a dead body of a sacrificer. His dead body becomes the *vedç* and all implements of sacrifice are kept on him and then burnt. *ĀB*, 11.2.1.1 says that a man is born Three times; the three births are: biological, ritual and funerary.²⁴

On the basis of the above, a few salient features of *ĒpaĀ* and *Agni* may be put forth:

1. Both *ĒpaĀ* and *Agni* are said to possess procreative powers. The waters are the mothers *par-excellence*, and the fire is the prolific generator and begetter.
2. Both of them are said to have pervaded the entire universe.
3. There is a close nexus between the fire and the water. *Agni* is said to have been born from the waters.
4. The tripartite nature of *Agni* has been connected with the three forms of waters, celestial, atmospheric and terrestrial.

FIRE AND WATER

Fire and water are regarded as the most important elements (*ṚV*, 1.161.9). *ṚV*, 10.51; 52; 53; and 124 relate a legend about *Agni* hiding in the waters (*ṚV*, 10.51.1) and in the plants (*śamī*, *aśvattha*, *ṚV*, 10.51.3) and being formed by the gods. In this respect, *ŚB*, 7.4.1.8 gives the following legend:

Agni went away from the gods, and hid himself in the waters. The gods said to Prajāpati, "Go thou in search of him; to thee, his father, he will reveal himself". Prajāpati became a white horse, and went in search of *Agni*. He found him on a lotus leaf heaving forth from the waters (*ŚB*, 7.3.2.14).²⁵ Lotus means the waters and this earth is a leaf thereof, this earth is *Agni's* womb, for *Agni* (fire-altar) is this earth.

As dwelling in the waters, *Agni* resembled the aquatic bird *haṃsa* (*ṚV*, 1.56.9; 4.40.5; 10.124.9). He is regarded as the son of the waters (as lightning), as such he is known as *Apāṃ Napāt* (*ṚV*, 2.35; 10.30. 3; 4 etc.).²⁶ Another divinity, *Trita Āptya*, has been identified with *Agni*, as a god of lightning. He is regarded as the third or aerial form of fire (lightning), originally the middle member of the triad, *Agni*, *Vāyu*/Indra and *Sūrya*.²⁷ He is kindled in the waters (*ṚV*, 10.45.1; *AV*, 13.2.50). He is the bull who has grown in the lap of the waters (*ṚV*, 10.8.1).

Dyaus (Ākāśa)

The word ākāśa does not occur in the *Ṛgveda*. Its synonyms, *dyaus*, *nabhas*, *kham*, *antarikṣa*, etc. have been frequently used. Although all these words are generally understood as sky, space, mid-air, etc., one important point, regarding *antarikṣa* is that it is said to lie between the two worlds (*dyāvāpṛthivī*) (heaven and earth). However, the concepts of *dyaus* in the *Ṛgveda* is very similar to that of *ākāśa* in the *Upaniṣads*. In fact, *AV*, 10.7.3 mentions four worlds : *bhūmi*(earth), *antarikṣa* (mid-air), *dyaus* (heaven or sky, and the fourth world is beyond the heaven (*uttaram divaḥ*)).

In the *Ṛgveda*, the term *dyaus* designated the uppermost vault of the concrete sky.²⁸ The essential feature of *Dyaus* as a male divinity,²⁹ is his creative potentiality. He is regarded as a father (*ṚV*, 1.90.7; 164.33, 4.1.10). He is a great father (*ṚV*, 1.71.5; 159.2; 160.2 ; 185.1) rich in procreative seed (*suretāḥ*, *ṚV*, 4.17.4). Like a mighty bull (*ṚV*, 1.160.3; 5.36.5). He generated *Agni* (*ṚV*, 4. 72.1).

It may be pointed out that other than this feature of a begetter, *Dyaus* has nothing special in the *Ṛgveda*, until and unless he is combined with *Pṛthivī*. There is not a single whole hymn for *dyaus* in the *Ṛgveda*. In *ŚB*, 13.5.2.17, *ākāśa* is said to have been created first.

Pṛthivī

Besides other stray occurrences, *Pṛthivī* has been described in one short hymn in the *Ṛgveda* (5.84) and in a long and beautiful hymn in the *Atharvaveda* (12.1) In *ṚV*, 5.84.1, twofold nature of earth, as a divinity and as a gross element, is noticed. The mighty one makes mighty the earth with her might (*mahnā jinoṣi mahini*), and bears the hills and forests etc. She is a mother (*ṚV*, 10.18.10), an upholder of all (*ṚV*, 1.155.2). She protects all that is, and all that will be (*AV*, 12.1.1).

These are certain myths in the *Ṛgveda* and in the *Brāhmaṇas* regarding the birth of the earth. *ṚV*, 10.72.6 states that the gods stood in the deep abyss of waters closely clasping (*susanirabdhāḥ*) each other. Then from their feet, as if dancing, a cloud of dust arose which became earth. *ṚV*, 1.22.17 mentions that the earth has been formed from the dust raised by Viṣṇu when he measured the earth in three strides. *ŚB*, 6.1.1. 8-15 gives the following myth about the creation of the earth :

Prajāpati desired, "May I be more than one, may I be reproduced". He toiled and practised *tapas*. Being worn out and exhausted with toil and austerity, he created first of all the *Brahman* (neut.) in the form of *trayīvidyā*. It became to him a foundation, and the foundation of everything else in the world. He then created the waters out of *Vāk*. Prajāpati further desired, "May I be reproduced from these waters". He entered the waters with the *trayīvidyā*.³⁰ Hence an egg arose. The embryo which was inside was created as *Agni*. Prajāpati further desired, "May I generate this (earth) from these waters". He compressed it (that is, the earth) when as yet in the form of the egg-shell (*kapāḷa*) and threw it into the waters; the whole (earth) dissolved itself all over the waters. All this universe appeared as one form only, namely, waters. He desired, "May it become more than one, may it reproduce itself". He tried and practised austerities; worn out with toil and austerity, he created foam. He thought that this indeed looked different, it was becoming more than one, I must toil indeed. Worn out with toil and austerity, he created (1) clay (*mṛda*), (2) mud (*suṣkāpā*), (3) saline soil (*ūṣa*), (4) sand (*sikatā*), (5) pebble (*śarkarā*), (6) rock (*aśmāna*), (7) ore (*ayaḥ*), (8) gold (*hiranya*), and (9) plants and trees. Therewith he clothed this earth.³¹ This earth, then, was created as (consisting of) these same nine creations, "This earth has indeed become (*bhū*) a foundation",

he thought; hence he became the earth (*bhūmī*). He spread it out (*prath*) and it became the broad one (*pr̥thivī*). (Translation based on Eggeling's).

The creation of the earth out of the waters has given rise to a myth in the post-Vedic Purāṇic literature, which is known as the *Varāhāvatāra*. *ŚB*,14.1.2.11 enjoins that in the preparation of the *Mahāvīrapātra*, the earth dug up by a boar should be used (*VS*, 37.5). Giving the *arthavāda* (explanation) for this act, the *Brāhmaṇa* says that a boar called Emuṣa lifted the earth up from the water, and became her (earth's) lord Prajāpati.³² Further *TS*, 7.1.5.1 (= *PB*, 20.14-16) states that this world was in the beginning the water, the ocean. Prajāpati, becoming the wind, moved on it. He saw her (earth) and becoming a boar, he seized her, and becoming Viśvakarman, he wiped her. She extended, she became the earth, and hence the earth is called the earth (*pr̥thivī*). Further, in *TS*, 1.10.8, it is said that the earth was uplifted by a black boar with a thousand arms.³³

DYĀVĀPṚTHIVĪ (HEAVEN AND EARTH)

It is the combination of the two, *dyaus* and *pr̥thivī* (as *dyāvāpr̥thivī*),³⁴ which is most important in the mythology and in the cosmological speculations of the *Vedas*. *Dyaus* and *pr̥thivī* form the universal parents. The one, *dyaus*, is a prolific bull; the other, earth, is a variegated cow (*RV*, 1.160.1). They are both rich in [procretative seed (*RV*, 1.159.2; 6.70.1; 2). As a father and as a mother, they guard all beings (*RV*, 1.160.2).

As a father, *dyaus* is associated with *pr̥thivī* (earth), who is regarded as a mother. In this respect Macdonell says : "*Dyāvāpr̥thivī* appeared so indissolubly connected in nature that the myth of their conjugal union is found widely diffused among many primitive peoples.³⁵

AB, 4.27.5; 6 describes the marriage of *Dyaus* and *Pr̥thivī* :

These two worlds (heaven and earth) were (once) joined. (Subsequently) they separated. (After their separation) there was neither rain, nor sun-shine. The five classes of beings (gods, men, etc.) then did not keep peace with one another. (Thereupon), the gods brought about a reconciliation of both these worlds. Both contracted a marriage with one another. In the form of the *Rathantara-Sāman*, this earth is wedded to the heaven, and in the form of the *Br̥hat-Sāman*, the heaven is wedded to the earth . . .

- (Tr. M. Haug).

Words, such as, *pitārā* (dual),³⁶ *mātarā* (dual),³⁷ and *janitrī* (dual),³⁸ all meaning parents, have been used to designate their parenthood. *RV*, 1.191.6 says that *Dyaus* is men's father, and *Pr̥thivī*, mother. They are regarded as prolific parents (*RV*, 1.59.2). They are addressed as father and mother (*RV*, 1.159.1-3; 160.2). They are primeval parents (*RV*, 7. 53.2; 10.58.2). They, have created and they sustain all creatures (*RV*, 1.159.2; 160.2; 185.1). No one knows who produced them, or which of the two first came into being (*RV*, 1.185.1).

The most striking delineation of these two divinities is their procreative potentiality and generative power. The mythology behind the universal parenthood of *Dyāvāpr̥thivī* centres round each one's prolific procreative potency, and fecundity. *Dyaus* showers the procreative fluid in the form of rains which the earth absorbs in her womb, and fructifies herbs and plants to sustain all creatures. The fertility power of these two has been widely emphasized in the *Vedas*, and they have become a symbol of parenthood.³⁹ A very significant epithet, *retah̥sic*, has been used for them (*ŚB*, 8.2.3.5).⁴⁰

Vāyu

Two words *vāyu* and *vāta*, have been used in the *Ṛgveda* for wind. However, a distinction has been maintained between the two. *Vāyu* is chiefly the divinity, and *vāta*, the element.⁴¹ Both the words have been deified in the *Veda*. *Vāyu* has been celebrated in two, whole hymns (*ṚV*, 1.134; 4.48), and *vāta* too has two entire hymns to his credit (*ṚV*, 10.168;186).

The wind is the germ of the world and Ātman of all gods (*ṚV*, 10.168.4). *ŚB*, 13.3.8.6 says that *vāyu* is the transformer of seeds, for *vāyu* is the vital air, and vital air is the transformer of seeds. He is the breath of the gods (*ṚV*, 7.87.2; 10.92.13, *ŚB*, 9.3.1.5). He is immortal (*ṚV*, 10.186.3). He is the support of all beings (*ŚB*, 8.4.1.26). He exists in all three worlds (*ŚB*, 8.4.1.9). He is an abode of all beings (*ŚB*, 13.6.2.2). He is the breath of all (*ŚB*, 9.3.1.5). All beings pass over into the wind, and from out of the wind, they are again produced (*ŚB*, 11.5.3.11).

Vāyu is the 'combining force' in the universe. The yonder sun strings these worlds to himself on a thread; that thread is the same as the wind (*ŚB*, 8.7.3.10). *Vāyu* is said to have originated from the breath of the *Puruṣa* (*ṚV*, 10.90.11). Prajāpati is *Vāyu* (*ŚB*, 6.12.19; 2.2.11). *ŚB*, 6.1.2.1-2 mentions that Prajāpati by means of *Agni* entered into the union with the earth; hence an egg arose. The embryo which was inside was created as *Vāyu*. *ŚB*, 7.1.2.1 related a myth: Prajāpati having produced creatures relaxed. From him, when relaxed, the vital air went out. Now, the vital air which went out from within him is the wind that blows yonder. The gods heated him in the fire; and when the fire rose over him thus heated, that same vital air, which had gone out from within him, came back to him, and they put it into him. They raised him up; and, inasmuch as, they thus raised him upright, he is these worlds.

Vāyu is *Agni* (*ŚB*, 10.4.5.1). *Vāyu* is *prāṇa*. Like the spokes in the navel of a wheel everything is fixed fast in *Prāṇa*.⁴² In *AV*, 11.4.15, breath is called the wind, he is Prajāpati (vs.12); breath is the lord of all, both what breathes and what does not (vs. 10).⁴³

Significantly, *ŚB*, 8.1.1.7ff compares *vāyu* with Viśvakarman,⁴⁴ for it is he who makes everything here.

Vāyu has been associated with the waters. *ŚB*, 9.4.1.10 compares the wind with the *gandharva*; waters as his *apsarasas*. It says that as a *gandharva*, the wind went forth with the waters as the *apsarasas*, his mates. The waters are called *ūrjaḥ*, for the food is produced from the waters (*ibid*).

On the basis of the foregoing delineation of the five divinities, and the myths connected with them, one may draw a few conclusions which might have turned them into the five *bhūtas* in the post-Vedic Upaniṣadic and later philosophical speculations.

The foremost common feature of all the five is that they have been regarded as the all-pervasive and omnipresent elements. All this world has been pervaded by the waters. Waters are the foundations of the world. *Agni* is the very existence, and it is through *Agni* that everything exists. He permeates in every object that is seen in the universe. In this respect his tripartite character is very significant. As a terrestrial fire, he pervades the entire earth; as *vāyu*, he pervades the mid-region and causes rains, and as the sun, he pervades heaven. *Agni* is the five-fold sacrifice, from which the entire world emanates. *Dyaus* and *ṛṥthivī* are the universal parents. They are the *retaḥsic* (seed-shedders). *Vāyu* is a binding force in the universe.

The second most important characteristic of these divinities is that all of them are endowed with great creative potency. Waters received the primordial germ whence all the gods came into being. They are

the mothers of all beings; they are the mothers of *sūrya* and *Agni*. They are the wives of gods and maidens of Soma. Likewise, *Pr̥thivī* is the mother who upholds all beings. *Agni* has been described as a begetter *par-excellence*. He places the procreative germ in all beings. He is a bull abounding in seed. He generated the heaven and the earth. He is produced in the waters where he lives like a swan (*haṃsa*). *Dyaus* has been portrayed as a great progenitor and a universal father. He is a bull rich in seed (*suretāḥ*). *Vāyu* is the germ of the world and a transformer of seed. He is the breath of all.

These two common features of these five divinities, namely, all-pervasiveness and potent creative power may be regarded as conducive to regard them as individual members of the *Pañcabhūtas*. These five divinities may be regarded as having developed in two directions in the *Upaniṣads*: (1) as five gross elements (*pañcabhūtas*), and (2) as five subtle elements (*pañcatanmātras*), all the ten having their common source in the *Brahman*, or *Prajāpati*, or *Ātman*. It is this *Brahman*, or *Ātman* who endures inside (the human heart, *hṛdākāśa*)⁴⁵ and outside (the manifested universe that is). It is the *Brahman* who is microcosm, and it is the *Brahman* who (through the *pañcabhūtas*) becomes macrocosm.⁴⁶ *KaṭhUp*, 6.1 regards the *Brahman* as a three-footed entity, and compares it with a fig tree, the five elements, ether, water, etc., being its branches.⁴⁷ In this respect the *Īśopaniṣad* declares:

yo'sāvasau puruṣaḥ so'hamasmi |

(*ĪśaUp*, 16)

It is the *Brahman* from whom everything has emanated and it is the *Brahman* into which everything merges (*ŚvetUp*, 6.2; 3), and thus the *Brahmacakra* goes on revolving forever.

In mythological parlance, all the five elements are interlinked. Water and fire form one group, heaven (sky) and earth form a couple, and the wind is regarded as an all-pervasive binding force. And all of them are connected with *Prajāpati* who creates them by the power of *tapas*.

English Translation of

02 "Pañcabhūtatattvanirūpaṇam"

The best of holy cities - this city of Pune, is well-known in the world. Offering my prostrations to the learned people well-versed in various *śāstras* and assembled here, I would like to express my thoughts before them for their consideration on the chosen subject.

Prthivī, āpaḥ, tejaḥ, vāyuḥ and *ākāśaḥ* are five *mahābhūtas* that constitute this universe. In the creation, continuation and destruction of this universe - the above five *mahābhūtas* play a major role. These five *bhūtas* transform themselves into *prapañca* by the desire of *Īśvara* and by that very same desire of God they continue to exist up to a particular period; by the very same *saṅkalpa* of God these *bhūtas* disappear. In this process the main cause is the desire of God. To give them the experience destined for them, according to the various deeds (*karmas*) of all the *jivātmās* (souls), God creates this universe.

Thus created, it stands for some time and again disappears. This process of creation, existence and dissolution is described in the *śāstras* as the sport of Lord God. That is why this universe is called *Līlā Vibhūti*.

Apart from this universe, there is another part, which is not transformed like this universe. There is no change of any kind here. And this part is called *Nitya Vibhūti* and stands all the time without any change. To attain this place is what is called *mokṣa* or *Brahmānanda anubhava* attainable by only those who have overcome their *puṇya* and *pāpa*. This fact is vouchsafed in the *Vedas, Upaniṣads, Bhagavad-Gītā, Viṣṇu Purāṇa* etc. This is the philosophical position of *viśiṣṭādvaita* of Bhagavān Rāmānuja. The followers of *dvaita* and *advaita* systems also explain this very same philosophy with little variations here and there. Though the *advaita* borders on the philosophy of Buddhism it is not *vedabāhya*, out of Vedic-fold, nor is it *nāstika*.

Says Maḥarṣi Yājñavalkya -

This body made up of these five *mahābhūtas* due to *karma*, when disintegrated into the five *bhūtas*, where is the need for sorrow?.

How the *mahābhūtas* become instrumental in the formulation of this universe is described in detail in the *Vedas. Mūla Prakṛti* in its subtle state is called *tamas*; it transforms itself into *mahat, ahaṅkāra* etc. There are three states of *Mūla Prakṛti* called *tamas, akṣara* and *avyakta* all of which are very subtle. Even the other transformations following these four states, namely *mahat, ahaṅkāra* and *tanmātras* are also subtle and when they attain the state of *vikāsa* they get the name *bhūtas*. As the seeds kept in a storage do not sprout, but when combined with water and mud, gradually sprout, in the same manner the non-transformed state of the seeds represents *Mūla Prakṛti*, because, when it attains *vikāsa* it represents the sprout. This is how the universe takes shape. All the created things dissolve into their origin, the cause, and this can be seen in our daily experience.

Those who follow the tenets of the Buddhism or Jainism do not accept this process. They accept only the four visible *mahābhūtas*. They do not accept *ākāśa* which is not experienced by any sense-perception. Nor do they accept the principles like *kāla* (Time), *dik* (Direction) and "*ātmā*(Soul), because all these things are not experienced by the sense-perceptions, whereas in the case of other four *bhūtas* namely *bhūmi*, *jala*, *vāyu* and *agni*, there is no dispute, as experience cannot be denied. Thus, in the *nāstika* system of philosophy the only disputable point is about *ākāśa*.

If the non-existence of *ākāśa* is established by arguments and syllogism, on the same analogy the other unseen *tattvas* like *kāla* (Time) etc. can also be denied.

Dharmakīrti a well-known and erudite Buddhist scholar, in his work called *Pramāṇa Vārtika* discussed this aspect. It has also been dealt with in an exhaustive manner in the commentaries on that work. Let us consider some of those points :

1. There can be no destruction of an existence but only a transformation is possible.
2. When there is an absence of obstructing agent, then also that existence cannot be affected.
3. If there is absence of one *mahābhūta*, it means there is existence of another *bhūta* in its place.
4. Thus the absence of the other four *mahābhūtas* is to be construed as *ākāśa* and nothing else.
5. How come *ākāśa* does not support a piece of stone thrown in the space?
6. *Vāyu* which is moving all the time is not supported by *ākāśa*. Why is it so
7. If the reply is that *ākāśa* does not obstruct the movement of the Air, this is not the answer. Since the non-obstruction of the Air's movement is due to the absence of the obstructing agency.
8. Those who accept *ākāśa* say that it is all-pervasive and eternal. How is it that such a matter is not being supported by another? It comes to this that *ākāśa* does not need a support, but it is its own support that supports all the other things.
9. In that case we may ask, "why accept *ākāśa* alone as having no other support? Why not accept this in the case of others too"?
10. Direction (*dik*) is also all-pervading. Then why not accept this quality of *ākāśa* in direction itself?
11. There are several principles which are all-prevading, like *ātmā*, *kāla*, *vāyu*, *dik* etc. If these are all-pervading, how is it that all these do not become one?
12. The likely answer to this question is that there is no obstructing agency and thus they all have their own existence in all places. Simply saying that there is no obstruction from *ākāśa* amounts to building castles in the air. Thus, we may conclude that the absence of the four *mahābhūtas* is *ākāśa*. Other than this, accepting a matter separately and calling it *ākāśa* is not real.

The above arguments of Dharmakīrti are again discussed in detail in his other work called *Nyāya Bindu*. There are several annotations for *Pramāṇa Vārtika*, among which is the one called *vārtikālaṅkāra* by Prajñākara Gupta. In this *vyākhyā* the author recounts the arguments of those who accept *ākāśa* and gives counter-arguments very effectively.

When there is a wall in front, then the movement of objects is obstructed. These objects are not in a position to overcome the obstruction and go forward. But if there are no such obstructions then both living

and non-living things move ahead. This is seen in experience. Therefore, the acceptance of ākāśa is supported by the reason of non-obstruction. All objects remain in the space provided by ākāśa and ākāśa does not obstruct their movements.

This argument is countered below. What is meant by the phrase 'providing spaces'? The answer is "non-obstruction of existence". What is this existence? Is it being supported by something else or is it a non-hindrance? If it is meant as getting support from another source, then it is wrong. Because things like pots etc., are not supported by "ākāśa" but by the earth. If the answer is non-hindrance, that is also wrong, because it is due to the absence of an obstructing agency. Therefore, the statement that ākāśa does not obstruct the existence of other things is null and void. Therefore, ākāśa means the absence of the other four *mahābhūtas* such as *pṛthivī*, and there is no fifth matter called ākāśa.

The absence of obstructing agencies like walls makes movement possible, if there is an obstruction then it becomes impossible. Thus the wall is an obstructing agent of movement. This is called *pratibandhaka*. The absence of *pratibandhaka* is a general cause for all created things. This is accepted by all the philosophers. Therefore, construing an element as ākāśa and positing it as the giver of space has no basis. A person with eyes cannot see a thing which is obstructed by a wall or if the object is at a long distance, or if it is very small in size. If the obstruction is removed, if the distance is decreased or if the size of the object is big enough, one can see it. In the perception of this object the cause is only the eye and nothing else. The wall and other things are obstructing agencies for perception. Therefore, the absence of the obstructing agency becomes a cause for all creations. No other cause may be construed in this regard. Therefore, acceptance of the fifth *bhūta*, *ākāśa* on the basis of the argument that it provides space for all other things is untenable.

If ākāśa is providing space then where do the other *mahābhūtas* like *vāyu* stand, and where does ākāśa itself exist? If there is no need for a sixth *mahābhūta* and *ākāśa* is capable of providing space both for itself and for other *bhūtas*, then *vāyu* also can be construed as of that quality.

For the question, "What is *ākāśa*" the answer given by Prajñākara Gupta is this :

Ākāśa means an opening or hole and this is made possible by the absence of some matter occupying space. If it is the absence of a matter which occupies space, then, where was *ākāśa*? One cannot say that it tore away through the sides. In both cases of existence and non-existence of *ākāśa*, where the *ākāśa* did go cannot be answered. If it is said that *ākāśa* was destroyed, then well done of its eternity! if it is said that all the time ākāśa itself was there, then absence of space and existence of *ākāśa* cannot go hand in hand. The existence and non-existence of a thing cannot exist simultaneously.

Īśvara, *ātmā*, *ākāśa*, *dik*, *kāla* etc., are not existing things, because they do not create or contribute in the creation of another thing visible, that is, absence of *artha kriyā*. This is another reasoning. Earth causes burning, cooking etc., there is *artha kriyā*. *Kriyā* means coming into existence of a new object. Non-happenings of these movements or non-agreement of same is called the absence of *artha kriyā*. Wherever there is existence, one can see the coming into being of another object or transformation.

With the existing of a particular thing or its absence, if some knowledge is obtained by its absence, then that is called *svalakṣaṇa*. That is how Dharmakīrti defines *svalakṣaṇa* in his *Nyāya Bindu* and by the absence of this so-called *svalakṣaṇa* he establishes the absence of *ākāśa*. There he cites the example of the horns of a hare: whether the hare's horns exist or not, there is no change in the knowledge. This is called *tuccha*. Non-existence, in the same manner, such as, whether ākāśa exists or not, indicates that no change occurs in the perception. Therefore, *ākāśa* does not exist. We experience differences in taste when

there is more sugar or less, or salt or chillies in our food. This is what is called difference in perception. Known to all and sundry, this is also called *svalakṣaṇa*. If such definitions of *svalakṣaṇa* are known, only then the existence of an object can be accepted by all and without any controversy. In the case of the horns of a hare or *ākāśa* there is no such *svalakṣaṇa* and, therefore, there is no *ākāśa*.

The existence of a thing can be accepted only when there is *artha kriyā* and this is a correct proposition. Likewise, the existence of *svalakṣaṇa* also confirms the existence of a thing. *Ākāśa* does not possess either of the above two qualities as stated by the Buddhist. Only here the *vaidikas* differ. They say that both qualities do exist in *ākāśa*. Therefore, *ākāśa* is to be accepted as real and existing. But the difference is in the perception of laymen and thinkers. It cannot be convincingly proved to exist to the experience of laymen. Whereas for an analytical thinker, it can be proved. A thing that is obtained after climbing the hill cannot be called invisible before climbing. Both sides give all the possible reasonings, but the Buddhists use many false illustrations and syllogisms to attract the laymen.

Kumāriḷa Bhaṭṭa says this - the followers of Buddha all the time preach *dharma* but never without reasoning. According to the philosophy of the Bauddhas, all the things in their creation need definite causes but in their destruction they do not need any cause, because destruction is natural; not the creation. To teach this tenet to ordinary people they always use several examples. For example:

Taking a pebble from the ground they say that the pebble does not go up in the space by itself. If thrown up by us, up it goes. Therefore, the pebble's going up is dependent on some causes. In the same manner, the creations of all things depend on causes. But, once thrown up, the pebble does not stand in the space itself; it immediately comes down. What is the cause for this? There is nothing visible. Likewise, all created things without another agency, get destroyed naturally and by themselves.

In the example cited above, one can analyse how much reasoning is involved in it. Citing the example of a pebble's going up caused by an agency does not properly fit in for proving that all created things need an agency for their coming into being. Gullible people are led to believe anything by this sort of exposition. In the case of *ākāśa* also these logicians have adopted a similar method. The *Vaiśe. Sūtra* - (2-1-71) tells us that in those cases where knowledge cannot be gained through *pratyakṣa* or *anumāna* such subtle matters are to be known only by the authority of the *Vedas*: Ṛṣi Kaṇāda, who was content with only two *pramāṇas* - *pratyakṣa* and *anumāna*, takes recourse to *Vedas* in respect of all subtle matters as a source of knowledge. If that is the case with him, then what to say of people like us. This Ṛṣi Kaṇāda, after dislodging all the arguments of the opponents, establishes the existence of the fifth *bhūta*, that is *ākāśaḥ*, with the *hetu, śabda guṇa* in a long drawn discourse.

The quality which is grasped by the ears is called *śabda*. This *śabda* cannot be inherent in *vīṇā* or in bamboo. Therefore, there must be a substratum for this *śabda* and the substratum is what is called *ākāśa*. By several resonings, he has discarded the other matters as the *āśraya* (substratum) for the quality *śabda*. If sound resides in the *vīṇā* itself, then people sitting at a distance cannot hear this sound, because *vīṇā* does not travel from its place. Whereas if it is accepted that sound through the medium of *vīṇā* was generated in *ākāśa*, which in turn generated a series of sound waves till it reached the ear-drum of the people sitting in various directions, it is quite logical. Therefore, in the existence of *ākāśa*, *śabda* is the deciding factor. Getting out and entering in are other factors to prove that *ākāśa* is the cause for space.

Movement needs space and this is given by *ākāśa*. This is how the *Sāṃkhyas* argue. Ṛṣi Kaṇāda has effectively countered their arguments on this point. Even Bauddhas reject this argument "giving space" as the deciding factor for proving the existence of *ākāśa*. Wherever there is a quality in a thing created, it is seen that quality comes into being from the corresponding causes already existing, namely the colour of the

cloth is derived from the colour of the thread used for weaving the cloth. In the same manner if *śabda* is a *guṇa* inherent in *viñā* then that *guṇa* should be shown to exist in the causal elements of the *viñā* or its parts. It cannot be proved in this way. Therefore, *śabda* is not a *guṇa* of *prthivī* etc., but it must have its own substratum which is the fifth *mahābhūta* the *ākāśa*.

There was another argument by the Bauddhas - the absence of an obstructing agency, and that was called *ākāśa* and not a separate *bhūta*. Here, we can only say that Bauddhas are simply guided by their fanaticism and not by reasoning. Ordinary people can understand the absence of an obstruction like the wall. Simply with that much reasoning, they stop contented but accept or reject a substance like *ākāśa* which is very subtle and beyond the sense-perception; it is not sufficient. It needs sharp intellect and argumentative power but the ordinary people are not endowed with this quality and Bauddhas exploited this situation to their advantage.

In the sixth chapter of the *Chāndogya Upaniṣad* there is a dialogue between Śvetaketu and Uddālaka : "Bring the fruit of the *pīpa*/tree. Here, it is. Breaking the seeds, what you see? Very small seeds. Break one of these small seeds. Again it is broken. What you see in it? I do not see anything. Dear son, that which you are not able to see in this small space, from that very space this great *pīpa*/tree standing before you has arisen. Therefore, have belief that this *ātmā* also is so subtle that it cannot be seen or experienced but all the created things are having their *ātmā* as their soul and this is the truth, and you are that".

When Śvetaketu says that he is not able to see anything within that small seed when broken up and from that very same thing Uddālaka says that the great *pīpa* tree has arisen, he wants his son to believe that. Bauddhas also would like their *śiṣyas*/followers to stop arguing and believe their statements. But that is not the end of it.

In the *Yājñavalkya Smṛti*, *Yati Dharma Prakaraṇa*, the formation of a child within the womb is described, where it is said that the child gets parts of all the five *bhūtas* and gets its body formed. By accepting or rejecting this theory nobody is going to gain anything or lose anything. It is just the state of affairs, as it exists. Because the blind man is not able to see it and gets dashed against it, it is not the fault of the post (pillar) that it exists there.

From the *bhūta ākāśa* the child gets the quality of *lightness*, *subtleness*, *śabda*, *guṇa*, *śrotra indriya* and *bala*. Once the body of the child is formed all these qualities exist in its body. This has been explained by Mahārṣi Yājñavalkya and he goes on explaining the formation of the other qualities, too, in the body from the other *bhūtas*. Is it just to mislead the people?

A patient suffering from a disease gets medicine from the Doctor as per his diagnosis; the Doctor prescribes certain restrictions in regard to the intake of food etc. The transformation of different kinds of food within the body and how they are to be tackled are known to the Doctor and not to the patient. Does that mean that the patient should disbelieve the Doctor.

Artha kriyā goes to prove the existence of a thing; this was one of the reasonings but even though *artha kriyā* might be there in a body, it may be invisible. It does not mean that it is not there. This can be seen in the case of the patient. After consuming the medicine he becomes hale and hearty. These are things which are ascertained by proper reasoning. An obstructing object like a wall or its absence as *ākāśa* as propounded by the Bauddhas does not stand to reasoning. When you negate a thing, the use of a negative word is common. This negative word does not denote the absence of a covering agent. In that case people should say, "there is no covering agent here". In this sentence they will use the word **here** as the basis for the experience. And that difference is the proof for the existence of *ākāśa*. That is

the *ākāśa* intended by us and is denoted by the word **here**. "Here the Bird flies". In this sentence the *ādhāra* for the Bird to fly is *ākāśa*. It is a positive denotation and cannot be explained by the use of a negative word.

Let us consider another point. What are the meanings of these two words *ākāśa* and *śabda*? People dispute about this but they do accept that these two words have come to denote something. They are matters according to the *Mīmāṃsakas*. It is only a quality and not a matter according to *Naiyāyikas*. It is eternal according to the *Mīmāṃsakas* but it is **momentary** according to the *tārikikas*. In the first Chapter, first *Pada*, Sixth *Adhikaraṇa* of the *Pūrvamīmāṃsā* the quality of eternity of *śabda* is established. The qualities of sound, how they are transmitted and how they are received are all well-known to modern science today. All these are discussed in this chapter. It is further discussed there, whether the parts of the body like the **gullet, palate** etc., produce the sound or just help in making it audible. In this argument it was established that Air, which is still, at one point gets disturbed by the movement of the parts of the body, gets dislodged, and goes on generating waves travelling in all Directions. Because Air is not visible, we are not able to see their conjoint or disjoint functions.

In the *Yakṣa Praśna* of *Mahābhārata* there is a question - of the two things born simultaneously one is experienced first and the other later. Which are these two? The answer is lightning and the roaring of the clouds; from this one can understand that *śabda* is a matter which travels according to the *Mīmāṃsā*; it is eternal, all-pervading and a matter. We use the word *śabda* for those *dhvani* which make the *śabda* known by our ears. *Dhvani* gets transmitted in all directions because of the impact of *vāyu*. And thus, *śabda* is experienced by us. Therefore, subtleness is one cause for our not being able to prove or disprove a thing. Therefore, we cannot simply deny the existence of a thing by its mere non-experience. Therefore, in things known not directly, we cannot deny anything just like that. Therefore, *ākāśa* the fifth *bhūta* and its two prior evolutes like *ahaṅkāra* and *maḥat* are **Indisputable**. Non-visibility by ordinary people is not sufficient to deny their existence.

03 Bhūtas in Vedic Rituals and Literature

N. Dharmadhikari

According to the Vedic tradition, there are five elements (*bhūtas*) - *ṛthivī*, *āpaḥ*, *tejas*, *vāyu* and *ākāśa*. The *bhūtas* are inextricably linked to the Vedic concept of cosmology and ritual.

The *Aitareya Up.* (3.3)¹ gives a list of five *bhūtas* while *Taittirīya Up.* (2.1)² relates the order of their creation. The *Praśna Up.* (2.2; 4.8),³ *Chāndogya Up.* (1.1.2)⁴ etc. also enumerate them. *Sāṅkhyas*⁵ accord sanction to them.

Formation and frame of Vedic sacrifice were conceived by the master-minds, the *ṛṣis*, the seers, when they constantly observed and meditated upon the ever rotating disciplined cycles of the universe, which they understood as cosmos and not chaos. The ancient Vedic ritualistic texts rightly state that the sacrifice is a prototype⁶ or dramatisation of the game of universe, the creation of Prajāpati, and that the sacrifice is a royal⁷ road leading to *ṛta*, the cosmic law.

The five *bhūtas* are cosmic elements. If the cosmic prototypes are thought to be manipulated through sacrifice, the *bhūtas* must be found playing an important role in the frame and sacrifice.

Deep investigations into Vedic sacrifice reveals that the entire sacrificial procedure is scheduled round the *Loka*, i.e., space-encompassing *bhūtas* and round the *Kāla*, i.e., Time.

We are concerned here, with the *bhūtas. Loka* or its collateral dialectic form *u-loka*⁸ (*RV*, I.936, II. 30.6, III. 2.9. etc.) (which may be an abridged form of *uru-loka*) originally may mean - 'the wide open space'.

Further the three or seven worlds - i.e., *vyāḥṛtis* viz. *bhūḥ*, *bhuvah*, *svah*, *mahaḥ*, *janaḥ*, *tapaḥ* and *satyam*, covered by the wide space, are secondarily known as *Lokas*.

Ṛthivī

Bhūḥ represents the global planet, as well as the basic element - *ṛthivī* - earth. *Bhūḥ* or *ṛthivī* is seen in its physical, deified and metaphysical forms in Vedic rituals.

Mait. S., I.8.59 enjoins to recite three *vyāḥṛtis* viz., *bhūḥ*, *bhuvah*, *svah* before each offering in sacrifice, because, according to this *Sa=ṃhitā*, these three *vyāḥṛtis* are raised to the position of *Brahman*, the eternal Truth.

In *Ādhāna* rite (depositing fires), the materials viz., gravel, saline soil, the soil from mole-hill and ant-hill, the earth dug up by a boar (with his snout) are placed on the *vedī*-ground. These materials are called *pārthiva-sambhāras*.

In this context, the *Taittirīya Br.* (I.1.3) narrates a myth of the birth of *Ṛthivī*¹⁰ as follows: in the beginning this water was indeed a surge (*śarīram*). Prajāpati, practising penance (for further creation) became weary. Incidentally he saw a lotus-leaf floating on the surge. He thought - must there be some

substratum wherein the stalk of lotus, stands firm. He assumed a form of a boar and dived deep. He reached the earth below. He rammed into it and emerged. He spread it on the lotus leaf. Since it was spread it (*aprathaya*), it became known as *Pr̥thivī*.

Thus, in placing the earth dug by a boar, on the *Vedī*-ground, the *Adhvaryu* as if places the earth brought out by *Prajāpati*. In that he verily dramatises the role of *Prajāpati*.

This myth summarily reminds us of the myth of *varāha*-incarnation appearing in *Purāṇas*.

For the performance of sacrifices, *Pr̥thivī* is the very substratum, for it forms an altar for sacrifice. According to *TS*, the sacrifice is the navel of the world and the *vedī* - the altar¹¹ ground is the furthest end of *Pr̥thivī*. Since the sacrifice is performed on it, the *vedī* - the earth - is called *devakṣetra*.¹²

In *Agniciti*, a *svayam-ātṛṇṇā* - i.e., a self-perforated pebble is placed on the altar being piled. *TS*, 5.2.8 identifies this pebble with *Pr̥thivī*.¹³ The formula for placing this pebble (*TS*, 4.2.9) reveals that it is being placed by *Prajāpati*¹⁴ and that it is *Aditi* - all sustaining, a sustainer of all the world.

*Prajāpati*¹⁵ once desired to pile the fire-altar. *Pr̥thivī* said to him, "you shall not pile the fire-altar on me; you shall burn me excessively; and I getting burned, will shake you apart, you will fall into a sorrowful state". *Prajāpati* replied - "I shall so pile as it will not burn you excessively". He touched the earth, made it a brick and set it down to prevent excessive burning. This implies the role of the cosmic *Pr̥thivī* in the ritual of *Agni*.

In placing the *Retahsic iṣṭakās*,¹⁶ *TS*, 5.5.4 narrates a myth conveying that the *Pr̥thivī* and *dyuḥ* are born of the seed of fire. Thus the *virābri* represents the earth and the *svarāj*, the sky.

Thus *Pr̥thivī* and sky of cosmos are represented by the two bricks in the *Agni*-rite.

Idā is one of the important rites in *iṣṭi* and *paśu* sacrifices, wherein *Idā* is identified with *Pr̥thivī*.

Āgnidh priest partakes of a portion from *Idā*, addressing it with the term 'mother earth'¹⁷ (*VS*, II.10; *TBr.*, 3.7.6, *Kāt*, *ŚS*, 3.4.1).

Idā, i.e., *pr̥thivī* is sometimes personified as a *Pr̥śnī*;¹⁸ or *devahū*¹⁹ (heavenly cow).

In the famous *Pr̥thivī*²⁰ *sūkta* of *Atharva Veda*, (12.1.1-63), *Pr̥thivī* is frequently referred to as mother.

According to the *Nyāya*-system of Philosophy, the *Pr̥thivī* element is endowed with a specific characteristic, viz. *gandha* - smell. The *gandha*²¹ of *Pr̥thivī* is referred to in this *sūkta* (vide *AV*, 12.1.23-25).

Kausika Sūtra employs this *sūkta* in many rituals - e.g.²² *Āgrahāyaṇī* (24.24),²³ protection of town or city (38.12-16), pacifying²⁴ earth-quakes (98.1) etc. (Cf. also *Vaitāna ŚS*, 12.6, *Śāntikalpa*, 17.5, 18.8).

Idā, i.e., *Pr̥thivī* is associated with *dyauḥ* - the sky. In *Āgrayaṇa-iṣṭi*,²⁵ the cake baked on one potsherd, or clarified butter (*ājya*) is offered to *dyāvapr̥thivī* jointly (*ŚBr.*, 2.4.3, *Kāt ŚS*, 4.6.5,7). According to *ŚBr*, *eka-kapāla*, i.e., one pot-sherd represents *Pr̥thivī*.

In *Vaiśvadeva parvar*²⁶ of *Cāturmāsya* sacrifice also, a cake oblation is offered to *dyāvāpṛthivī* jointly. \Oblations are offered to *dyāvāpṛthivī* in certain *kāmyeṣṭis* and *kāmya paśu* sacrifices.²⁷

It is regarded by the *śrutis*, that the *dyāvāpṛthivī*²⁸ the earth and sky were close together - not separated in the beginning of creation. The oblations jointly offered to them may mark this mile-stone in the concept of the process of creation.

Śrutis further state that, while separating;²⁹ the earth and sky said to each other, due to excessive love and affection - (Sāyaṇa, *TBr*, 1.1.3 - *snehātīśayāt* that they should share together what is worthy of sacrifice. What of sky worthy of sacrifice was placed in this earth that became - *ūṣa* - the saline soil. What of this earth was worthy of sacrifice, was placed in the sky. That became the black spot on the moon. When the *adhvaryu* places the *ūṣa* in the *vedī* - he should also think of yonder black on the moon. By that he places on the *vedī*, what is worthy of both, i.e., of earth and of sky. In this connection it may be noted that the clay of ant-hill deposited on the *vedī*, is actually the *pṛthivī* element. It is identified with the earth by *ŚBr*:³⁰

It may also be noted that in Vedic rituals, *dyauḥ* and *pṛthivī* are constantly mentioned in the forms of father and mother.³¹ The joint oblation to *dyāvāpṛthivī* and their character of being united may have further formed a base for the concept of *Ardhanārīśvara* form of '*śvara*.

Pṛthivī is found identified with *citrā*³² sacrifice performed by one who desires cattle. It is also identified with the *Hotṛ*, priest,³³ with *Vāmabhr̥t*³⁴ brick placed on the *Uttaravedī* in *Agniciti*; with *Vāravantīya Sāman*,³⁵ with *nidhana*,³⁶ the last part of *sāman*, with *svayam-āṭṛṇṇā*³⁷ pebble, with *prātaḥ-savana*,³⁸ with *dakṣiṇa-havirdhāna*,³⁹ with *rathantara*,⁴⁰ *chandas*, with the first⁴¹ layer of *Agniciti*, with *prāyaṇīyā iṣṭ*⁴² and finally also with *prajāpati*.⁴³ These identifications, though sometimes formed *arthavāda*, indicate how *Pṛthivī* commanded high respect from ritualists.

Pṛthivī is more significantly identified with goddess Aditi.⁴⁴

A *caru* (oblation of cooked rice) is offered to Aditi for one who is about to engage in war.⁴⁵ Aditi is this very earth. The *yājyā* and *puronuvākyā*⁴⁶ verses, for this *caru* offering to Aditi, are very significant. Aditi, i.e., *pṛthivī* is, in these verses regarded as the mother of those who follow the holy cosmic law, since she is a protector of holy order. Aditi the *pṛthivī* is regarded as a divine-ship, full of good oars, giving good protection - the ship that leaks not, hence dependable to convey across.

T. Br. enjoins to offer *caru* to Aditi⁴⁷ and *Punarvasū* in the context of *Nakṣatreṣṭi*. In the *yājyānuvākyā* verses related to this oblation, the Aditi,⁴⁸ *Pṛthivī* is called a nourishing (mother) of beings and giving firm foundation to them. Bhaṭṭa Bhāskara here derives the word Aditi from *Ōaya* 'to go'.⁴⁹

The *Pṛthivī* is once called *Sarpa-rājñī*,⁵⁰ the queen of moving objects. Bhaṭṭa Bhāskara while commenting on *TS*, 7.3.1.3. derives this word from *Ōsrp*,⁵¹ to move, and states that 'the *Pṛthivī* is a queen amongst those who have assumed movement (*sarpasya gatimataḥ*).

Further *sarpa-rājñī* is a technical name of certain verses (*TS*, 1.5.3) *bhūmir bhūmnā* . . . etc.) utilised for depositing the fire in the mound of *gārhapatya*, in *Agnyādhāna* rite (*Āp ŚS*, 5.27.9-11). In this context, it

will be interesting to note that the *gārhapatya* is often identified with *bhūh*, i.e., *Ṛṥthivī*. *Śatapatha Br.* further states that the mound⁵² of the *gārhapatya* fire-place is circular, because this *Ṛṥthivī* is also circular.

*Praśna Up.*⁵³ refers to the deity presiding over *Ṛṥthivī*. The deity is responsible to pull down the *apāna* in a *puruṣa*. Śaṅkarācārya while commenting on this passage explains that the *Ṛṥthivī* favours a man by pulling down the *apāna* in his body. Otherwise he may either have faltered/become unsteady/hesitant in his movement or gone up in space. This may hint at the gravitational force of *Ṛṥthivī*.

The Vedic texts specifically hold the view that *Ṛṥthivī*⁵⁴ is a source of vegetation and food. Peace/happiness (*śāntiḥ*) is brought on earth due to vegetation and food.⁵⁵ If the god *Mahādeva* kills the cattle, it is due to polluted vegetation⁵⁶ (*Tāṇḍ Br.*, 6.9.9).

With these discussions, one may safely conclude that, *Ṛṥthivī*, besides its global shape, was known to Vedic ritualists and seers in the form of 'element' also. They deified it and visualised it in its essential form of *Brahman* also.

Āpaḥ

According to *Śrutis*, 'water' appears to be the first essential cosmic principle. *Ṛgveda*⁵⁷ states that 'All this was water in the beginning, not distinguished from darkness which wrapped it'. *TBr.*⁵⁸ corroborated this view, saying - 'in the beginning water was indeed a surge'.

Next to breath, water is an animating cosmic element, a primordial liquid, vivifying organism. After air, it is the first need of a living creature, a basic factor for existence. *ŚBr.*⁵⁹ therefore states 'As long as there is water in vital airs, so long man speaks with speech'. *TS*⁶⁰ also prays water for obtaining long life and lusture.

According to *TĀ*⁶¹ (7.3.2), *Agni* is an antecedent form and sun the later. Water is a compound and lightning is the joining element. *Mait* ⁶² further divides water in three places - in sky, earth and mid-region.

The Vedic seers possessed a deep awareness of the medicinal characteristics of waters.

Ṛ ⁶³ sheds sufficient light on medicinal quality of waters. The hymn considers water as the reservoir of all curative medicines and of nectar. It invokes waters which the cows drink and declares the intention to offer oblations to deities presiding over the flowing waters. *VS*⁶⁴ describes the medicinal use of waters in clear terms, saying - "O water, which we have drunk, become refreshing in our belly. May you be pleasant to us by driving away diseases and pains - O divine immortal waters". The verses are utilised for touching one's navel after drinking liquid in a sacrificial procedure.

This hydro-therapy finds its climax in *Atharva veda*. *AV*⁶⁵ hymns (6.23; 24 & 57) are exclusively devoted to medicinal use of waters.

AV prays waters to obtain cure from *kṣetriya*, i.e., incurable diseases.

AV describes the various sources of waters and addresses them as *ayaḥṣa=m-karaṇīḥ*, i.e., dispeller of diseases and as - *bhiṣagbhyobhiṣaktarāḥ* - more healing than any other healer.

None of the recipes except raw water⁶⁸ can quench the thirst. In this sense only, Yāska in his *Nirukta* referred to water as containing all tastes.

Like *Agni* and *Vāyu*, *Āpaḥ* (waters) also serve as a purifying agent. *KS.69* declared in clear terms, that waters are purifiers. In the rituals of *Ṛṣṭī*, *Prokṣaṇī*⁷⁰ waters are utilised for purification.

Arigirasas,⁷¹ leaving for heaven, placed in the waters, the *dīkṣā* and *tapas*. The sacrificer therefore takes bath in waters at *tīrtha* (ford). This is related by *TS*, 6.1.1. The formula for sprinkling on the sacrificer and for his bath (*TS*, 1.2.1)⁷² are prayers to waters for purifications.

After a bath at consecration, the sacrificer is required to sip the water. He thereby becomes pure within.⁷³

TS, 5.6.1. collects thirteen⁷⁴ formulae, all addressed to waters, in connection with the *kumbheṣṭhakās* in *Agni*-rite. One of the formulae compares the blissful savour of water with the mother's⁷⁵ milk. The related Brāhmaṇa (*TS*, 5.6.2), while commenting on the formulae, declare that,⁷⁶ the waters are ambrosia, therefore they sprinkle with water, him, who has fainted - (Cf. Bhaṭṭa Bhāskara here, - *avatāntam mūrchatam*).

In the *Tānūnaptra* offerings (in Soma sacrifice) the *ghee* and ladle come near the Soma, placed on *Āsandī*, near *Āhavanīya* fire place. Soma becomes afraid of them, for gods once made the *ghee* a weapon and ladle arms and had struck him. The *Ṛtviks* sprinkle the frightened *soma* with waters and make him swell. *Mait S77* here remarks that - 'All sprinkle him with water who has fainted'.

For preparation of *ukhā* pot (of clay), one has to dig the earth. In digging he acts harshly on earth. He therefore pours water on the pit and says⁷⁸ - 'the waters are for appeasing' - verily with waters be appeased, thus he calms her pains.

In a similar context *Mait S79* states that 'the waters are tranquilizer for the disturbed'.

Waters cause the plants to grow. *TS* states⁸⁰ - 'where there are waters, the plants take root (and where plants take root, cattle find support through them)'.

If the drops of milk fall down on earth, while milking a cow, one should pour water over the drops - for, as *Mait S81* states - waters avert pain, they are restoration/cure, they are medicine. Wherever the waters fall on earth, the excellent plants grow abundantly.

Impressed by the unique characteristics of water, Sāyaṇa, commenting on *ṚV*, 82 I.161.9 states - 'there exists no better element⁸³ other than water which is more beneficent to the living beings. Hence waters are supreme'.

In the context of placing *Nakṣatreṣṭhakās* in *Agniciti*, *TS84* and *Mait S* prescribe - 'waters are the deities, which preside over *Pūrvāṣādhā* constellation; and *Viśvedevāḥ* over *Uttarāṣādhā*'. *Mait S85* further states that waters themselves are *Viśvedevāḥ*.

Varuṇa⁸⁶ is also regarded to be a deity presiding over waters, and is associated with the *śatabhiṣak*⁸⁷ constellation. Here the name *śatabhiṣak* is self-explanatory.

Indra,88 desired to be sturdy and steady. He offered a *puroḍāśa* to (i)Varuṇa, (ii) the constellation *śatabhiṣaj*, and (iii) *bhiṣaj*. He became sturdy and steady. Thus Varuṇa, with the divinity and waters, is related to medicine and cures; even in ritualistic performances.

Every Soma-sacrifice concludes with *Avabhṛtha iṣṭi*, in which a cake is offered to Varu[ṇa. All the offerings in this *iṣṭi* are offered in waters, because according to *TS*,89 Varuṇa dwells in waters. In this *iṣṭi* the sacrificer beholds the waters and murmurs a verse, meaning - "O Varuṇa, the ruler, you possess hundreds90 or thousands of medicines." According to *ŚBr*, the *Avabhṛtha* bath is a whirlpool91 in the waters and that indeed is either Varuṇa's son or brother. That whirlpool in water is praised in the *Avabhṛtha*, with the verses prominently addressed to waters.92

In a Soma-sacrifice *Vasatīvarī* waters are drawn from a flowing stream and not from a stagnant pool. *TS* says that the stagnant waters are seized by Varuṇa.93 The flowing waters are therefore pure, the stagnant impure. Thus what is covered is also seized by Varuṇa.

A dreadful drop is also caused by the wrath of Varuṇa. A94 sacrifice is offered to him for atonement.

Thus the two aspects of Varuṇa - the cosmic ruler95 and a deity presiding over waters are interrelated with each other, due to their medicinal and curing qualities. The wrath of Varuṇa also works through (impure) waters.

Tejas

Out of five *bhūtas* *Tejas* may be regarded as a dominating *bhūta*. *Tejas*, the broader aspect of *Agni* is always seen rising from its physical, i.e., material state to divine height and from the divine height to the metaphysical **light**, which is its essential characteristic.

All the *Grhya Sa=mskāras*, from conception to cremation, and all the *śrauta* rites beginning from *Agnyādhāna* to *Antyeṣṭi* are performed in constant associ-ation with *Agni*, which is never missed.

In the rite of *Agnyādhāna*, the Fire is churned out, from the lower and upper enkindling logs called *araṇīs*, representing Urvaśī and Purūravas, the female and male forms. According to Vedic tradition, the seer Atharvan was held responsible for inventing the engendering of fire by the device of churning. All further sacrifices are performed with libations offered on this fire.

TS prescribes a cake (*puroḍāśa*) baked on twelve potsherds to be offered to Vaiśvānara.96 Yāska states that the *Agni* in mid-region and that in heaven is named as Vaiśvānara, and *Agni* on the earth is Vaiśvānara, which is born of the upper two fires.97 The fire of lightning, i.e., *vaidyuta* and the *Agni* of *Āditya*, the sun, are the fires of mid-region and heaven - respectively. These *Agnis* appear to be physical, but are deified, since the libation is offered to a deity Vaiśvānara *Agni*, born of upper two *Agnis*, who are also divine. According to Yāska, there are only three divinities. viz, (i) *Agni* - whose sphere is earth, (ii) *Vāyu* or Indra, whose sphere is mid-region, and (iii) *Sūrya* - whose sphere is heaven. It means that *Vāyu* or Indra is regarded by him, as a form creating *Agni* in mid-region. Yāska therefore repeatedly warns that one should not think that there is only one fire which is on the earth. There are fires in upper two regions98 also.

In the *Kārīrīṣṭi*, performed for rains; a cake is offered to *Agni*, *Maruts* and *Sūrya*; (the deities of three regions) because, as *TS* states - *Agni* thence causes the rains to arise, the *Maruts* lead it out when produced, when yonder Sun moves low with his rays, then it rains.99

This view is corroborated by *TĀ* which describes that - *Agni*100 (on earth) is a former form, *Āditya* - the Sun is a latter form; water in mid-region is a compound and the lightning is the uniting force.

In the mid-region, *Agni* assumes the speed of wind. This is described in *ṚV*:101

While commenting on this verse, Sāyaṇa explains that this fire is *Vaidyuta*. He further states, only *Agni* knows how to expel waters from the clouds.102 The three sacrificial fires viz. *Dakṣina*, *Gārhapatya* and *Āhavanīya*, therefore represent the three regions.103

In daily Agnihotra, therefore, a libation is offered to *Agni* in the evening and to *Sūrya* in the morning.104 Occasionally in *Parjanyaṣṭi*, it is offered to the deity of mid-region.

ṚV, X 88.6 states105 - the head of all, i.e., Sun becomes *Agni* during night, then at the rising, *Agni* is born as a Sun.

TBr. also concurs with this view when it states that *Agni*106 enters in sun in the morning and the sun into *Agni* in the evening. Thus the *Agni* on earth and the sun in the third region are identified with each other.

In Vedic ritual tradition, *Agniciti* is an important rite, which is generally augmented to Soma-sacrifices, wherein *Agni* is identified with Rudra, having two aspects, viz. benevolent and malevolent.107

Prayāja and *Anūyāja* oblations in *iṣṭi*, are offered to different forms of *Agni*. In *Paśu* sacrifice, the *Yājyā* verses, termed as *Āprīs*, are utilised in praise of the various forms of *Agni*. Thus *Agni* is deified in various forms.108

Now, while leaving his residence on journey, the sacrificer - the *yajamāna* requests *Agni* to exchange their names, until he returns, with the words109 - 'the name that first, O all knower (*Agni*), my father and mother bestowed upon me aforetime - do thou bear it, until I return. O *Agni*, may I bear thy name. My name and thine - O *Jātavedas*, which like men changing garments, we bear, let us exchange'.

Sacrificer's this prayer brings about his heart-felt feelings towards *Agni*. To him, *Agni* is not only a physical element but something beyond that, with whom he can communicate and establish with him, some sort of personal relations, nay identify his soul with *Agni*.

The Sacrificer wishing to pile an altar, first symbolically deposits his sacrificial fire in his own person with the words - 'In me I first take *Agni* - the immortal *Agni*, who has entered into mortals, within the hearts, may we enclose him in our *Ātman*. May he not abandon us and go afar'.110

After having thus deposited *Agni* in himself the sacrificer proceeds for piling the *Agniciti*. *ŚBr.* here remarks 'being111 about to construct fire altar, he takes *Agni*, in his own self. . . . when he constructs *Agniciti* after taking *Agni* into his ownself, he causes *Agni* to be born from *Agni*, the immortal from immortal'.

ŚBr., X.1.4.14 puts a question - what is done here in constructing an *Agniciti*, whereby the sacrificer wins over the re-birth? The answer is - well, he who builds an altar, becomes *Agni*. . . . *Agni* indeed is immortal, etc.112

Even with two *Agnihotra* offerings, to the two *Jyotis* - viz. *Agni* and *Sūrya*, the sacrificer is said to be relieved of cycles of births. This is promised by *ŚBr*, 2.3.3.9 - which says - 'This is the release from death in the *Agnihotra* and verily he who knows that release from death in the *Agnihotra* is freed from death.113

*ṚV*14 therefore rightly states that this flame is immortal in mortals.

Agni is therefore concerned here in the form of the Vedāntic immortal *Ātman*. That is why *Agni* at places is referred to as *Prajāpati*115 or *Brahman*.

Śāṅkhāyana Br. states - 'the *Puruṣa*, made known in *Āditya* is *Indra*. He is *Prajāpati*. He is *Brahman*.116

The epithets of *Agni* like *Jātavedas* - meaning all knower, or *kavikratuḥ* - having the intuition of a prophet - also aim at praising *Agni* in its Divine or Omniscient form.

Sun is the presiding deity of *svaḥ*; the yonder world, the Vedic heaven. In fact, the *sūrya* is the *ātmā* of moving and stable world.117 It is an inexhaustible source of energy. According to *ṚV*, the sun is a perpetual flame.118

While commenting on the formula119 of *TS*, 1.6.6, both the commentators viz., Bhaṭṭa Bhāskara120 and Sāyaṇa121 unanimously describe the inner *Puruṣa* in *sūrya* as an entrance to salvation.

Ṛgveda aims to point out that *Agni* is indicative of immortality - when it enjoins - 'Make122 the altar ready, set the *Agni* in blaze, let we two (i.e., the sacrificer and wife) perform a sacrifice, which is indicative of immortality'.

The altar here appears to be an inner one where Divine force is to be kept ablaze. It is there the sacrifice of awakening of the consciousness to immortality is performed.

Agni in Vedic tradition is not only a material physical element. It transcends its physical character. Even its physical state appears to be controlled by its metaphysical essential.

*Vāyu*123

Air or wind plays an important role in the environment. Accordingly, the Vedic *Ṛṣis* recognised air as a vital cosmic constituent and included it in five elements.124 *Vāyu* is referred to as a deity presiding over the mid-region.125

The concept of Vedic sacrifice is supposed to be an outcome of cosmological reflections of *Ṛṣis*. It is maintained that *Adhvaryu* sets the sacrifice in motion with *Vāta* and finally he bestows it again in *Vāta*.126

The *Vāta*-offerings are enjoined at least in *Pravargya*,127 *Agniciti*128 and *Kārīrī iṣṭi*.129

In *Pravargya* *Vāyu* is referred to as the soul of sacrifice.130 In the formulae for *vāta*-offerings in *Agniciti*, *vāta* is addressed as *Śa=mbhu*131 and *Mayobhū*, i.e., bringing welfare and happiness.

The formulae and *Brāhmaṇa* for *Vāta*-offerings in *kārīrī* and placing *vāyavyā* brick in *Agniciti* reveal the rain bringing character of *vāyu*.132

Incidentally it may be pointed out that Durgācārya on *Nirukta*, X.1 divided *Vāta* in four categories of which the last brings the rains.133

Thus the role of wind in bringing rains was observed by Vedic *Ṛṣis*. It is not at all necessary to dilate on the point of necessity of rains for the livelihood of all living organisms on earth.

That the pure, unpolluted air is a source of health, happiness and consequently of long life, was also observed by the Vedic *Ṛṣis*. Two small *Ṛgvedic sūktas*; X. 188,134 and X. 137,135 may be regarded important from this point of view.

In *ṚV*, X.186, *Vāta* is referred to as causing welfare and happiness. The *Ṛṣi* is also emotional to this element that he addresses *Vāta* as his father, brother and friend. *Vāta* is a store-house of ambrosia for him. He prays for it and requests it to blow with its medicinal qualities.

ṚV, X.137 divides the wind into two categories, the one bringing vigour and the other blowing away the evil. Since *vāta* is the Universal medicine, he prays the wind to blow with its medicinal qualities.

Further *TS* and *Maitt S* positively state that whatever smells ill, is spread out in a windy place, for *Vāyu* is its purifier.¹³⁶ This is seen in the context of drawing *aindravāyava-graha* of Soma. The myth¹³⁷ is as follows : The gods wished to slay Soma. They could not kill him, because *Vāyu* the breath had pervaded the Soma from within. The gods directed *vāyu* to leave Soma and take to the resort of the gods. *Vāyu* did so. The gods then killed Soma. The Soma so killed became foul. The gods were disgusted due to the foul smell. *Vāyu* then said - I shall make him palatable and delicious. *Vāyu* entered Soma from within. He thus made Soma delicious. Hence they spread the fermentation Soma in a windy place *Sāyaṇa* commenting on this passage is more explicit.

On account of this purifying nature, *Vāyu*, i.e., wind appears to be identified with *Yajña* - the sacrifice. This is the view of *Ch. Up.*¹³⁸ The wind acquires this quality of purifying the ill-smelled things through its ever-moving and constantly active character.¹³⁹

Any material over which the wind does not blow belongs to *Varuṇa*.¹⁴⁰ *Varuṇa* is a deity which covers and consequently does not allow fresh air to enter.

A knot of bag containing paddy for *Puroḍāśa* is therefore loosened with a formula¹⁴¹ - *Uru-vātāya (TS, 1.1.4)* - 'be widely open to wind'. *TBr.* further states - 'one who enters a covered or enclosed place, enters darkness'.¹⁴² This suggests that the wind purifies the material which has become foul due to storage.

Thus according to Vedic *Ṛṣis*, Air inherits the intrinsic quality of neutralising pollution.

Prāṇa the breath may be regarded as one of the vital forms of air.

¹⁴³Once, the breath and sense-organs, disputed about their superiority. They went to *Brahma* who said - one of you is the most excellent, after whose departure the body is thought to be worse off. *Vāk*, *Caṅkuṣ*, *Śrotram* and even *Manas* departed from the body by turn. Still the body persisted. Then as the breath was about to depart, even as a mighty horse of *Sindu* land, might pull up the pegs to which his feet are tied, even so did it pull out those organs together. They said, "Venerable Sir, do not you go out. We shall not be able to live without you". They confirmed that their firm basis lies in *Prāṇa*,¹⁴⁴ i.e., vital Air.

This allegorical discourse appears in *Bṛ. Up.*, 6.17.13 and also in *Ch. Up.*, 5.1.1.15.

Br. Up., 3.7.2145 corroborates this view when it states that - By air, as by thread, this world, the other world, and all beings are held together. . . therefore, when a person dies, his limbs are loosened. For they were held together by air before his death.

Thus the Vedic *Ṛṣis* were so fully aware of the medicinal qualities and the intrinsic essentiality of this environmental element, that they eulogized it to the extent that it forms an integral part of *Prajāpati*.¹⁴⁶

They also prayed that the wind¹⁴⁷ should blow sweet for one who wishes to offer sacrifice.
Ākāśa

While delineating *pr̥thivī*, I have already portrayed few characteristics of *dyauḥ* - i.e., sky. The word *loka* (as stated earlier) originally means the space and secondarily the worlds. The word *Ākāśa* denotes space.

In *Agniciti* the *lokam̐ṛṇā* the space-filler-bricks - are placed on the fire altar - with the formula¹⁴⁸ 'fill the space, fill the holes' etc.

¹⁴⁹The *cātvāla*, i. e., a pit, dug in earth, towards the north-east of the *vedī*, in sacrifices is identified with *Ākāśa* by *JU*, 1.5.5.

Sadasya is regarded as a seventeenth *Ṛtvij* in the Soma-sacrifices and is related to *Ākāśa* by]*Saḍvi=msā Br.*

Thus *Ākāśa*, according to]*Saḍ Br.* is placed in the midst of *bhūtas*. Therefore, they give a seat to *sadasya* in the midst of *sadas-paṇḍāl*.¹⁵⁰

A sacrificer in all the three pressings of Soma-sacrifice seeks permission of the priests for partaking Soma from *camasas*.

While seeking permission from *Sadasya*-priest he identifies him with *Ākāśa* in the morning pressing, with the *Ākāśa* in eye in the midday pressing and with *Ākāśa* in the body, in the third pressing.¹⁵¹

Sacrificer, while requesting the priests to accord sanction to the sacrificial ground (*devayajñam*), identifies *sadasya* with *Ākāśa*.¹⁵²

When the sacrificer offers (*dakṣiṇā*) to *Sadasya*, he should say - 'O *sadasya*, I offer myself (*ātmānam*) to you'. Verily *Ākāśa* is *ātmā*, he therefore gives *Ākāśa* to *Sadasya*. As long as *Ākāśa* does not decrease, his gifts also do not wane. This is stated by *Jbr*.¹⁵³

Thus the identification of *sadasya* and the gift, with *Ākāśa* points out the unwaning characteristic of widely spread *Ākāśa*.

In the context of *Vaiśvānara-vidyā*, as propounded in *ŚBr*, Mahāśāla Jābāla identifies *Vaiśvānara*¹⁵⁴ with *Ākāśa* which is plenteous. Sāyaṇa, commenting on this passage states - *bahutvam ākāśasya, sarvagatatvāt*. Thus plenteousness, the special characteristic of *Ākāśa*, has been noted here by *ŚBr*.

Further *JBr.* identifies *Ākāśa* with *puruṣa*¹⁵⁵ and finally *Puruṣa* with *Prajāpati*.

It is well-known that *kham*, i.e., *Ākāśa*, according to the *Upaniṣads*, at a particular stage of *upāsana*, is identified with *Brahman*.¹⁵⁶

Thus, all the *bhūtas* in ritual tradition are not regarded only as material or physical elements, they really transcend their physical character. They are deified and raised to the status of *Prajāpati* or *Brahman*.

This is corroborated by the *Upaniṣads* when they state that all the *bhūtas* are controlled by their metaphysical essential character.

*Kena Up.*157 describes that *vāyu* could not blow and *Agni* could not burn, even a blade of grass, when the immortal element withdrew from them. Thus the *bhūtas* according to this *Upaniṣad* are activated only because the immortal element pervades them. It means that matter, the *Prakṛti*, can work only if an essential element has entered into it.

Yājñavalkya¹⁵⁸ in his *Bṛhadāraṇyaka Up.* has further elaborated this point, when he states that the *Ātman* dwells in the elements, is within them, whom the elements do not know, whose body is elements, who controls them from within. He is the inner controller, the immortal.

This may explain why electrons, protons and neutrons in atoms of the so-called physical elements move and rotate, and thereby show the characteristic of the sentient.

04 Water Element in Vedic Cosmogony

Usha R. Bhise

Speculations about the origin of the Universe have occupied considerable space in the primitive religions. Cosmogony may be defined as "attempts at finding out the common origin of the diverse phenomena of nature, in nature itself". Such speculations started - not from unknown principle - but from the tangible and knowable concrete.

Turning to the Vedic literature, we find that no single uniform cosmogonic theory had been formulated. The oldest monument of Indian literature, viz. the *Ṛgveda* has various theories which are not mutually exclusive. Probing through Vedic literature, one comes across a process in the evolution of ideas. The various theories of cosmogony fall into three categories :

1. The most primitive ones begin with material principles like water, earth, fire, ether etc.
2. Next come the abstract principles like chaos, time, night, desire, non-being etc. (However, *asat* only meant primordial non-differentiation).
3. In the latest stage of development we come across divine principles like Prajāpati, *Brahman*, Viśvakarman etc.

A few more features of Vedic cosmogony may deserve mention here. According to *Ṛgveda*, Creation is not a single definite act as it is ever-proceeding. Creation out of nothingness is practically unknown. Further, it does not have teleological significance. The Creator was not moved by any idea of executing a deliberate plan. Considering the theories of the first category mentioned above, one finds that only the material cause of the Universe is stated. They are silent about deities being the efficient cause. Out of the Five Great Elements, *pṛthivī* and *ap* are the most tangible elements, *tejas* gets the next place. Even there, two concrete forms of it viz. the Sun and the fire get the privilege of being frequently mentioned in cosmogonical deliberations.

In the early Vedic cosmogony, the *ap-tattva* receives a good deal of attention. This was prompted, probably, by the historical background of the period. Frequent floods in the Indus Valley have influenced the thought-process of Vedic Āryans when they stated that water was the primordial substance out of which the Universe came into being (*ambhaḥ kimāsīd gahanaṃ gabhīram - ṚV, 10.129.1*).

The Indus Valley appears to be a target of frequent floods. So also its extension viz. Lothal, Rangpur-Koth in Saurashtra. The accumulation of flood-debris at various sites is an evidence for the inundation of Mohen-jo-daro. The 12 meter-high hill of silt at Budh Takkar is the result of a great flood of long duration, almost a deluge, which must have turned the lower Indus Valley into a vast lake. The Carbon-14 dates for the two great floods at Lothal are 2015 + 115 BC and 1900 + 115 BC. The flood debris of the latest level of HR mound at Mohen-jo-daro is assigned to 2000 BC. The flood in *circa* 1900 BC assumed such fierce proportion and was so prolonged and devastating that all the Harappan settlements in Saurāṣṭra, Kutch and S. Gujarat were wiped out.

Speaking about creation from primal matter, we find that *ap-tattva* plays a prominent role. To the *Ṛgvedic* thinker, affected severely by frequent floods, water appeared to be the earliest element. In his

thought-process what was prior temporally, must have worked like the cause of the Universe. No question is asked about the origin of waters. Even Viśvakarman was preceded by them. In the *Brāhmaṇas* water is described as co-eval with Prajāpati. The *Śat. Br.* (XI.1.6) states that it is preceded Prajāpati. It was reasonable to Vedic people who saw land growing out of accumulations of river-torn silt that water was the primary element and source of all that existed.

A striking feature of Vedic Cosmology is the distinction made between *āp* and *salila*, i.e., 'waters' and 'creative waters' respectively. The following pair of quotations will drive home this point :

samudraṣṭhāḥ salilasya madhyāt punānā yantyaniviśamānāḥ |

RV, 7.49.1

The divine waters, "*āpaḥ* having ocean as their chief lord, go forth purifying (themselves, others) without encamping, from the middle of *salila*.

āpo ha vā idamagre salilamevāsa |

Śat. Br., XI.1.6.

Before creation (*agre*) the waters (*āpaḥ*) were *salila*.

The same text proceeds to say *tā'kāmayanta* "Entertaining a desire (to create)" they practised *tapas*, as a result of which *hiranyaya aṇḍa*, was born. From it *puruṣa* was produced and thereafter, Prajāpati was created.

It also states - VI.1.1.8 *saḥ (prajaptiḥ) apo'srjata*. Thus *āp* came at a late stage in the hierarchy of Creation. It was ordinary water created along with other diversities of the world, whereas, *salila*, preceded Prajāpati who gets fifth place in the creative process as could be seen from the above passage.

The distinction between *āp* and *salila* lies in the fact that *salila* contains something in it which was beyond the ken of ordinary knowledge and which, later, was going to manifest itself as the world. This fact has been made clear by the Nāsadīya hymn of the *R̥gveda* (10.129):

1. *ambhaḥ kimāsīd gahanaṃ gabhīram*

Was it water, deep and fathomless (i.e., beyond the limits of knowledge).

2. *tucchyena abhvapihitam yadāsīt*

The emergent principle lay concealed by the worthless (water).

ābhu is that which is about to come into existence, the implication being that it has the energy necessary for coming into being. The same idea has been presented by the *Bāṣkalamantropaniṣat* (V.14) as

(sarasaḥ parasya) sarirasya madhye eti iva A

That which moves about, as it were, in the *sarira*, which is beyond the lake of the mid-regions.

Here the lake of mid-regions is the place of origin of rain showers, and thus, represents ordinary waters. *Sarira* exists beyond that. It contains something which is described as *eti iva* which is a sure reference to the principle which is capable of moving, i.e., endowed with energy that is necessary for movement. The words *salila/sarira* are derived from *sr* 'to move'. The energy itself is called *tapas* 'heat'

or *kāma* 'desire'. The ability to know all this is possessed by *kavis* 'men of vision', through a process of knowledge which is not usual but may be described as intuitive (*hṛdi pratiṣyā kavayo manīṣā*)

The following statements strengthen the proposition set up in the earlier paragraph:

1. *yaddevā adaḥ salile susaṃrabdhā atiṣṭhata A*

ṚV, 10.72.6

When the gods were firmly established in this *salila*.

The hymn in which this occurs is a cosmogonical hymn which describes the genesis of gods and mortals from Aditi. The concept of Aditi stands for infinity, eternity, immensity, unbondage. She is all that is born and all that will be born (*ṚV*, 1.89.10). In the present quotation *salila* stands for the womb of mother Aditi. The *AV* equates her with primal waters.

2. *salile eko draṣṭā dvaito bhavati A*

Br. Up., 4.3.32

There is one seer (i.e., a sentient principle) who is without a second in the *salila*.

3. *sa evāgniḥ salile saṃniviṣṭaḥ*

Śvet. Up., 6.15

Saḥ is the swan, *Brahman* who resides in *salila* as *Agni*. *Agni* may be equated to *tapas* 'heat'.

4. Verily this world was *salila*. There, Prajāpati was born alone on a lotus-leaf. In his mind desire (*kāma*) arose.

Nṛ. Pūrva. Up., 1.1

5. *prśniḥ salilameva ca*

Cūlikā Up., 13

The idea of the presence of energy/heat in primal waters, later gave rise to the conception of *vaḍavānala* being present in waters. *Apām Napāt*, according to Oldenberg, was originally a water-dragon. He, later on, got identified with *Agni* because of latter's relation to the cloud-water in the form of lightning. The presence of lightning in the water-laden cloud gave rise to the concept of fire being a child who resides in the watery womb of cloud before its birth.

Thus, *salila* is the primordial substance containing the emergent world together with the energy necessary for emerging activity. However, the idea of water being the carrier of important entities continues to hold good even though there is no clear evidence that they are primal waters. To quote

sa eṣa apsu pratiṣṭhitaḥ A

Br. Up., 1.2.1

apsu puruṣaḥ etaṃ brahmopāse A

Bṛh. Up., 2.1.8

apsu amṛtamayaḥ puruṣaḥ A

Bṛh. Up., 2.5.2

The word *āp* is sought to be explained as:

āpo' pyāyanāt A

Mait. Up., 6.7.

Even at the stage of *āp*, energy in some form or the other is said to reside in it. *Tejas* in particular is intimately linked with water in this way. (*Kauś. Up., 4.2*)

The Upaniṣadic philosophy which is quite advanced in its speculations regards only one entity as real and that is *Brahman/Ātman*. The *Kauś. Up.* (4.10) presents an interesting dialogue between Bālāki and King Ajātaśatru. Therein Bālāki tries to establish that the *Puruṣa*, i.e., the sentient principle underlying various entities like the Sun, the Moon etc. is *Brahman*. Ajātaśatru refutes, one after the other, the statements of Bālāki which take the form like *ya evaiṣa āditye puruṣastamevāhamupāse iti* A Ajātaśatru denies all such statements made about moon, lightning, thunder, sky, wind, fire, water, mirror, echo, sound, shadow, bodily *puruṣa*, *prājña ātman*, *puruṣa* in the right eye and the one in the left eye. After silencing Bālāki, Ajātaśatru takes him to a sleeping royal personage and, there, addresses him as "O *prāṇa* clad in waters". But he does not wake up, since he, the *jīvātmā* was different from *prāṇa*. The lesson which Ajātaśatru tries to teach is that *prāṇa* is clad in waters but is not the ultimate reality.

The idea of water being the clothing of *prāṇa* is also found in the *Chā. Up.* (5.2.2) in the famous dialogue between the sense-organs and vital breath. It is also called the body of *prāṇa*. (*Bṛ. Up., 1.5.13: prāṇasya āpaḥ śarīram-*)

There is an interesting piece of conversation between King Satyayajña and Buḍiḷa, the son of Aśvatarāśva. Herein (*Chā. Up., 5.16.1*) the king asks Buḍiḷa as to the *Ātman* which is meditated upon by him. He replies that it is *āpaḥ*. Thereupon, the King remarks that this *ātman* is known as *Rayi Ātmā Vaiśvānara*. Hence, Buḍiḷa is wealthy and strong. This remark is important for two reasons. The first one is that it implies the identity between *āpaḥ* and *Vaiśvānara* "the fire which resides in all the human beings". The idea of water getting transformed into *Vaiśvānara* lies at the basis of the identity. The second reason why it is important is the relation between *rayi* 'wealth' and waters, *rayi* is, in fact, the outcome of the *upāsana* of *āp*. This is a case of the object of *upāsana* being identified with its fruit. For the sake of *upāsana*, waters are also found to be identified with *Brahman* (*Chā. Up., 7.10.1*).

Upaniṣadic philosophers were aware of "matter being indestructible". The so-called disappearance of matter was only its transformation into something else. Thus, the drying up of water meant its transformation into *vāyu*, (*yad āpa ucchuṣyati vāyumeva apiyanti - Chā. Up., 4.3.2*).

Water gets transformed into *puruṣa* 'human being' through five successive stages. This truth has been expressed through the metaphor of a sacrifice : *pañcamyām āhutāv āpaḥ puruṣavacaso bhavanti* (*Chā. Up.,*

5.3.3). Sacrifice was a salient feature of the Vedic culture; hence, the cosmic activity itself was viewed as a great sacrifice. The five oblations (*āhuti*) offered into five fires may be stated in a tabular form as:

Fire (Agni)	Oblation (<i>āhuti</i>)	Product/Fruit
Dyuloka	Śraddhā	King Soma
Parjanya	Soma	Varṣā (showers)
Ṁrthivī	Vārṣa	Anna
Puruṣa	Anna	Retah
Yoṣā	Retah	Garbha

Herein, the product of the earlier *āhuti* becomes the *āhuti* of the next stage. After the fifth oblation waters get the designation of *puruṣa*.

The transformation of water which is drunk by a person is threefold. (*Chā. Up.*, 6.5.2) The gross part of water is turned into wine, the medium part into blood and the subtle part into *prāṇa*. The subtle part (*aṇiman*) of water rises up and becomes *prāṇa* (*Chā. Up.*, 6.6.3). In support of the transformation of water into *prāṇa*, it is said that if a person does not eat for a fortnight but drinks water to his heart's content, his *prāṇa* does not get cut off (*vicchinna*) (*Chā. Up.*, 6.7.1). The moon is the brilliant form of water (*Bṛ. Up.*, 1.5.13). The *śara* 'scum', of water formed itself into the earth. (*Bṛ. Up.*, 1.2.2).

Resorting to the metaphor of a tree (*Chā. Up.*, 6.8.3,4,6) it is said that *sat* 'existence' is the root of which *tejas* is the sprout (*śuriga*). *Tejas* in its turn becomes the root of which *āp* (water) is the sprout, *āp* in its turn becomes the root of which *anna* is the sprout. *Taitt. Up.*, 3.8.1. identified *Agni* with *āp*.

This very fact is presented in a slightly different mode in which *sat*, *tejas* and *āp* are conceived as sentient beings capable of thinking and entertaining desires (*Chā. Up.*, 6.2.3). The *sat* thought that it should be manifold; it created *tejas*. Then, *tejas* thought that it should be manifold; it created water. Then water thought that it should be manifold; it created food. *Taitt. Up.*, 2.1.1 states that water was produced from fire and the earth was produced from water. Yet another passage in *Chā. Up.* (6.4.1) states that *tejas*, *āp* and *anna* are but three forms of *Agni* having three colours red, white and black respectively.

Keeping in view the principle of transformation the waters are called *oṣadhis* and *vanaspatis*. (*Taitt. Up.*, 1.3.2)

Once *āpah* are conceived to be sentient beings who can think, entertain desires and resolve (i.e., have *saṅkalpa*) (*Chā. Up.*, 7.4.2), it is only a step forward to regard them as *devatās*. *Āp* is deified as early as the most ancient strata of the *Ṛgveda* (7.49). They are invoked as purifiers (*punānāḥ* V.1; *śucayah*, V.2.3; *pāvakaḥ* V.3) with a request to favour the poet-seer. The favour consists of purifying the supplicant both physically and metaphorically by getting rid of the sin. Since they purify themselves as well as others Varuṇa, the moral governor, is said to reside in them (1.25.10). *Agni Vaiśvānara* is also said to have entered them. As a corollary to the rivers in general and *Sarasvati* in particular they are regarded as holy and divine.

Water thus plays a prominent role in Vedic cosmogony. The genesis of the Universe takes place in the primeval water. Once the chaotic condition existing before the genesis is overcome through creative

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process, the emergent one *abhu* emerges into an orderly cosmos. Thereafter, water-element *ap-tattva* appears as one of the products of creative process. It has a role to play in the further development of the Universe through its transformations

05 Gist of Cosmological Ideas in Vedas

Srinivas Madabhushi

Cosmology is an important aspect of ancient Indian thinking and wisdom. *Vedas*, the towering monuments of human race contain some important ideas on cosmology. Before attempting to examine the cosmological insights revealed in the *Vedas*, let us examine some of the modern scientific theories on the origin of the universe.

The modern views of cosmogony are summarised by Richard J. Ordway (1971) in his book *Earth Science*. Kuiper's '*protoplanet* hypothesis' in a way is a modification of the 'nebular hypothesis' of Kant and Laplace. The latter presupposes a great cloud of slowly rotating hot gaseous material as the starting point of the universe. As this cloud cooled, it shrank and rotated more rapidly. The cloud got gradually compressed at polar regions into a lens-shaped disc which gradually left off masses of gases which cooled down first to a liquid state and then to solid state, giving rise to planets. If this hypothesis were to be valid, the gases should disperse instead of collecting into planets; the sun should be rapidly spinning and all satellites should be revolving in the west-to-east direction. This and a number of other theories like the 'binary star hypothesis' unsuccessfully attempted to explain cosmogony. According to Kuiper's '*protoplanet* hypothesis', the solar system originated from a hot gaseous cloud or nebula, perhaps one-tenth as massive as the sun, that surrounds a large dark central mass that would subsequently form into a star. As the nebula contracted, and flattened, it becomes unstable, and divided into a number of separate clouds of 'protoplanets'. Solid particles accumulated into a central core in each protoplanet and became surrounded by a very large gaseous envelope. The composition of the nebula was chiefly hydrogen, with some helium, and 1 to 2 per cent of heavier elements. The protoplanets were of different sizes, but all were far larger and more massive than the present planets. The satellites were also formed in a similar manner, but they were relatively closer. The rotation of the protosatellites was slowed down by tidal friction until they rotated and revolved at the same rate and in the same direction. Thus they remained spherical and did not subdivide further. The original nebula rotated in a counter-clockwise direction. The tidal attraction of the sun on the protoplanets stretched them into elongated shapes and kept their long axes always pointed towards the sun. This made the direction of rotation the same as the direction of revolution, with periods of rotation and revolution once equal.

By this time the central mass had contracted enough to become a star. As the sun's temperature rose, its radiations and ejected particles ionized the gases around it. These gases interacted with the sun's rotation and transferred most of its angular momentum to the particles in the nebula; they moved faster as a result of the transfer. This solar wind of radiations and ejected particles gradually swept off into space the remaining portion of the nebula and most of the lighter gases of the protoplanets. A comet's tail is directed away from the sun for the same reason. Only a small fraction of the original nebula remains as the masses of the present planets.

Thus the most modern theory on cosmology assumes the pre-existence of a rotating, hot gaseous nebula, but is silent on how this came into being, and which motivated such rotation. With this background let us examine the cosmological ideas and cosmogony in *Vedas*.

Fig Veda

The Hymn of Creation (X.129) explains the origin of the world as the evolution of existent from non-existent. Water came into being first; from it was evolved intelligence by heat.

nāsadāsīnno sadāsīttadānīṃ A

There was not the non-existent nor the existent then.

tama āsīttamasā gūlhamagre 'praketaṃ salilaṃ sarvamā idam A

Darkness was in the beginning hidden by darkness. This all was water.

The *Aitareya Upaniṣad* states:

ātmā vā idameka evāgra āsīt A nānyat kiñcana miṣat A

(I. 1.1)

In the beginning this was but the absolute self alone. There was nothing else whatsoever.

sa imāṃṣallokānasrjata A ambhomarīcirmaramāpo . . .

(I. 1.2)

He created these worlds, viz., *ambhas*; *marīci*; *mara* and *āpaḥ*.
Yajurveda

ŚUKLA YAJURVEDA

Śatapatha Brāhmaṇa

prajāpatirvā idamagra āsīt A . . . tasmātpuruṣāttaptadāpo jāyante A . . . apāṃ taptānāṃ pheno jāyante A (V1.1.3)

In the beginning there was only the Creator. From him the 'water' was formed; from the water heated, the 'foam' was formed.

The *Bṛhadāraṇyakopaniṣad* says

naiveha kiñcanāgra āsīt A mṛtyunaivedamāvṛtamāsīt A

tanmano'kuruta so'rcannacarat A tasyārcata āpo'jāyanta A

(I. 2.1)

In the beginning there was nothing. The universe was enveloped by death alone. He produced mind. He moved about worshipping himself. As he was worshipping himself, water was produced.

vkiks ok vdZ% rn~;nika 'kj vkhTkegU;rA lk ifFkO;Hkor~A

āpo vā arkaḥ tadyadapāṃ śara āsīttamahanyata A sā
prthivyabhavatA (I.2.2)

Water verily is *arka*. What was there as froth of water hardened and it became earth (the cosmic egg, embryonic state of the Universe).

KṛṣṇA YAJURVEDA

The *Taittirīyopaniṣad* says:

asadvā idamagra āsīt A tato vai sadajāyata A

tadātmānaṃ svayamakuruta A tasmāttatsukṛtamucyata iti AA

(II.vii.1)

In the beginning all this was unmanifested. From that emerged the manifested. The *Brahman* created Itself by Itself. Therefore it is called the self-creator.

The *Kaṭhōpaniṣad* says:

na tatra sūryo bhāti na candratārakaṃ nemā vidyuto bhānti

kuto'yamagniḥ A

tamevabhāntamanubhāti sarvaṃ tasyabhāsā sarvamidaṃ vibhāti AA

(II. ii.15)

There the sun does not shine, neither do the moon and the stars; nor do these flashes of lightning shine. How can fire? He shining all these shine; through his lustre all these are variously illuminated.

Atharva Veda

yārṇave'dhiṃ salilamagra āsīt A

(*Kāṇḍa*, XII. 8)

Earth was formerly water upon the ocean of space.

rohito dyāvā jajāna A aja ekapādo' hahaddyāvā pṛthivī

balena

(XIII. 6)

Rohita produced heaven and earth. The one footed goat, the sun made firm the heavens and earth with his strength.

The *Muṇḍaka Upaniṣad* (II.ii.10) reiterates the words of *Kaṭhōpaniṣad* (II.ii.15)

etasmājjāyate prāṇo manaḥ sarvendriyāṇi ca A

*khaṃ
dhāriṇī AA*

vāyurjyotirāpaḥ

pṛthivī

viśvasya

(II.1.3)

From him originate - vital force, mind, all senses, space, air, fire, water and earth that support everything.

tasmādagniḥ samidhayo yasya sūryaḥ A

(II.1.5).

From him emerges the fire (heaven) of which the sun is the fuel.

The *Māṇḍūkya Kārikās* say:

svapnamāye yathā dṛṣṭe gandharvanagaraṃ yathā A

tathā viśvamidaṃ dṛṣṭaṃ vedānteṣu vicakṣanaiḥ AA

(II. 3.1)

Just as dream and magic are seen to be unreal, or as is a city in the sky, the whole universe is known to be unreal.

The *Praśna Upaniṣad* (III.8) equates the Sun with *prāṇa*, Earth with *apāna*, Space with *samāna*, Air with *vyāna* and Luminosity with *udāna*.

prāṇācchradhāṃ khaṃ vāyurijyotirāpaḥpṛthivīndriyaṃ manaḥ A

(VI.4.)

From *prāṇa*, Space, Air, Fire, Water, Earth were created.

In addition to these traditional four *Vedas*, the *Pañcama Veda Mahābhārata* also has important observations on cosmogony:

ākāśādabhavadvāri salilādagnimārutau A

agnimārutasaṃyogātata sambhavanmahī AA

(*Śāntiparvan*, 180.16)

Water was formed from the space; from water, fire and wind, and from their reaction the earth was formed.

agnipavana saṃyukta khāt samukṣipate jalam A

so'gnimāruta saṃyogāt ghanatvamupapadyate AA

tasyākāśānnipātaḥ snehāttiṣṭhati yo'paraḥ A

sa saṃghatvāmāpātto bhūmitvamanugacchati AA

(*Śāntiparvan*, 180.15)

The water produced in the sky by fire and wind attains solid state owing to the reaction of fire and wind. The oily quality of the water produced from the sky takes the form of the earth.

The *Sāṃkhya* system of *Darśana* considers the origin of the *pañcamahābhūtas* in the atomic form by means of combinations of the *tanmātrās*:

kṛṣṇapādācārya (tattvatrayavivaraṇam)atrāyaṃ kramaḥ - bhūtadeḥ śabdatanmātraṃ jāyate, śabdatanmātraṃ bhūtādirāvṛṇoti, tata ākāśo jāyate, tato'smāt śabdatanmātrāt sparśa tanmātraṃ jāyate, sparśatanmātraṃ śabdatanmātramāvṛṇoti, evaṃ śabdatanmātravṛtād ākāśasahāyakāt sparśatanmātrād vāyurjāyate, tato'smāt sparśatan-mātrāt rūpatanmātraṃ jāyate, rūpatanmātraṃ

sparśatanmātra-māvṛṇoti, evaṃ sparśatanmātrāvṛtād vāyusahāyakāt rūpatanmātrād tejo jāyate A evamādi A

The *śabdatanmātra* produced the Space and also the *sparśatanmātra* and the combination of the Space with the *sparśatanmātra* produces the Atmosphere (*Vāyu*). The *rūpatanmātra* is produced from the *sparśatanmātra* and envelopes the *sparśatanmātra*. From the enveloped *sparśatanmātra*, the *rūpatanmātra* with the help of the *Vāyu* produces the fire etc.

The cosmological ideas in *Vedas* can thus be summarised as:

1. In the beginning there was neither the non-existent nor the existent.
2. The Supreme cosmogonic force by the sheer Will to produce the universe first in the form of darkness enveloped in darkness.
3. The cosmological waters *ambhas* got manifested next in the form of undifferentiated fluid in darkness where there was no light whatsoever.
4. From the cosmic waters, combined with the motivation to move and probably as a consequence of the friction, fire called *arka* got generated.
5. Due to the action of the fire and water, wind was produced and the combination of wind, fire and water produced a froth which got solidified subsequently to form the earth.
6. The Supreme *Brahman* who is like an uplifted thunderbolt, makes the entire universe to emerge and to move. Thus the cosmic fluid originates due to the motion induced by the Will of the Supreme Soul moves the undifferentiated atoms into an undifferentiated cloud of dark fluid which because of the friction of motion attains heat and gives rise to the cosmic earth (the cosmic egg or the embryonic state of the universe), which is the **protostar** of the modern concept of cosmogony. The further motion of the cosmic fluid along with the cosmic earth produced the *ekapada aja*, the sun. The sun is the *Prāṇa* and from this *Prāṇa* the *Pañcabhūtas* originated.

The specific contributions by *Vedas* to the cosmogony, in superiority to the most modern cosmological concepts, thus include: (a) The concept of non-existent and non-non-existent state simultaneously; (b) The Supreme Will which motivated the non-differentiated atoms to combine to get differentiated into various forms like the nebula - *ambhas*; the frictional fire - *arka*; the protostar - **cosmic earth**(*brahmāṇḍa*) and finally the sun which is the *prāṇa* which differentiated the *pañcamahābhūtas*.

In spite of the unprecedented advancements in the science and technology, we are still as enlightened as the Vedic seers and their philosophical idea -

iyam viśṣṭiryata ābabhūva yadi vā dadhe yadi vā na A

yo'syādhyakṣaḥ parame vyoman so aṅga veda yadi vā na veda AA

(RV, X.129)

Where from has this cosmogony come; who is its chief architect? whether he knows or not - is still as valid and as beautiful as when it was composed.

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06 Cosmogony and Cosmology in Major Upanisads

K. V. Mande

The *Upaniṣads* represent the epitome of philosophical insights provided by ancient India. They have tried to search into the purpose behind the cosmos, and provided a philosophical interpretation regarding the theory of creation. At the same time they are not mere esoteric ideology, but have a practical legitimisation in term of life as lived here and now.

Upaniṣads contain philosophical discussions on different issues relating to man, nature and cosmos. Upaniṣadic seers generally explain these ideas on three levels - ādhidaivika *ādhībhautika* and *ādhyātmika* or waking state, dream state and deep sleep state. According to philosophical point of view the universe originates from Supreme Being. Materialistic (*bhautika*) viewpoint holds that the five elements are the root cause of the world. The third way of interpretation takes help of similes and explains the origin of the world. Now let us take a closer look at these three interpretations regarding the origin of the universe.

Philosophical Interpretation

Just as a physicist would explain the nature of the world with the help of physics, the *Upaniṣads*, give a philosophical interpretation. *Upaniṣad* means the secret knowledge which has all the while philosophical bearing. Therefore, the philosophical interpretation is taken first. As it is observed in *Taittirīya*, the Supreme Being is that from which all the beings come forth, in which they sustain and in which they merge at the time of dissolution.¹ The major *Upaniṣads* have mainly accepted the lord in an unmanifested form, still the superimposition of emotions takes place. Regarding the creation, *Upaniṣads* have accepted two processes, viz. mental and physical. At some places the thinking process is introduced before the actual creation starts. Such as, in *Aitareya* it is said that He foresaw, I should create the worlds,² or in *Chāndogya*, He foresaw, I should be many and then He created the lustre,³ etc. The verb used *aikṣata* is very significant. One can guess that the Lord might have drawn a picture of the whole world before his mind, and then the creation might have started. On the other hand, in *Praśna*, III.3 and in *Taittirīya*, II.1, respectively the direct process is mentioned as 'from that Supreme Being the vital breath is originated'⁴ and 'from that *Ātman* the ether is manifested'.⁵ Perhaps this may be cosmic creation which ultimately turns into the visible world. It means from that Highest Soul the space is produced. Space creates wind, which means some sort of movement starts. Then the heat which naturally comes out of any sort of action. The water indicates sort of flow, and ultimately the result is earth as a gross element. By keeping in mind the Upaniṣadic device of describing a thing from a subtle point of view to gross, this passage is interpreted in this manner. *Muṇḍaka* also believes that the whole manifestation is due to that Highest Being.⁶

Material Interpretation

Though it is a fact that the whole world is created by the Supreme Being, still, it does not come out at once, but has a certain sequence. This is *Upaniṣad's* scientific method. *Taittirīya* describes this order which is already mentioned above. It starts from the space to the human being.⁷ Human being is at the centre. Really speaking it is a human intellect which has discovered the theory of cosmogony and cosmology. Therefore how a human being comes in this world is a basic thought. In this regard *Upaniṣad's* scientific reason is very remarkable. *Bṛ* declares that the pair was produced from the self and the human beings came into existence.⁸ *Aitareya* gives a detailed description of the birth of a human being.⁹ *Chāndogya* correlates

cosmos with human beings in the famous *Pañcāgni vidyā*.¹⁰ Another note worthy point is that from the symbolic sacrifice a human being is born. *Upaniṣads* think of the inanimate world also, but in terms of animate things, e.g. *sat* and *asat* unite with each other. Then the egg comes forth. After one year it breaks into two. One is silver that is earth and the other is gold that is ether. The outer skin of embryo constitutes the mountains. The clotted portion is cloud. The tubes of human body are rivers. The abdominal water is the sea. From that the Sun is born. After it the melodious noise, all the beings and all desires are born.¹¹ Theory of threefoldness is Upaniṣadic device (*trivṛtkaraṇa*) which is the source of the theory of fivefoldness of *Advaita Vedānta*. The three entities are lustre, water and food.¹² The conclusion thus made is that there are three categories of beings, viz. those born out of egg, out of embryo and by breaking the earth.¹³ *Aitareya* adds one more, viz. those who are born from sweat.¹⁴

In *Praśna* cosmological viewpoint is very skilfully introduced - Bhāradvāja asked Pippalāda about *Ṣoḍaśakala Puruṣa*. Pippalāda answered that the originator of the sixteen digits dwells in the body. He (the Puruṣa) started thinking, "by whom should I be uplifted and established?" For that reason he created the vital breath. From it *śṛaddhā*, five gross elements, sense-organs, mind, food, semen, penance, spell, deed, worlds and name manifested. That person has no digit.¹⁵ According to *Upaniṣads*, the presiding deity entered the sense-organ, with a specific task, e.g. in *Aitareya* it is mentioned that fire being speech, entered the mouth; wind being breath, entered the nose¹⁶ and so on.

Literary Interpretation

In spite of deep philosophical insights, the *Upaniṣads* are also important because of their literary significance, being a record of an ancient civilization and culture. As literary pieces, they have great poetic flavour, marked by a curious mixture of classicism and lyricism. Therefore a literary interpretation of cosmology is possible by resorting to the use of similes in the *Upaniṣads*. There are many similes in the *Upaniṣads* but three of them are useful in this regard. Out of them one helps to explain cosmological aspect, while the other two exhort themselves in explaining cosmogonical aspect. The whole universe is originated from that imperishable entity. *Muṇḍaka* interprets this fact with the help of three similes viz. spider, earth and person.¹⁷

In the case of the earth and person respectively, they are the causes of herbs, plants and hair. But in respect of the spider, the seer points out two types of deeds, viz. origination and dissolution.

Again in the same *Upaniṣad* the seer declares that just as thousands of fire particles come out of the well-kindled fire, in the same manner from that imperishable entity all sorts of beings come forth and again merge into it.¹⁸ The simile in this case should be understood properly. In the case of the fire he uses the term "particles of the same forms", but not in the case of the imperishable entity, for the very reason that the forms differ, their essence does not. Further, the fire particles come out of the fire but nevertheless do not enter again. With regard to the Supreme Being, all beings come out of it and again at the end enter the same entity. So in both these similes, the similarity lies in their difference.

The third simile highlights the cosmological aspect. It is said in *Praśna* that all universe establishes itself in that Highest Soul, just as all birds find stability on the tree where they dwell.¹⁹ The simile is clear and needs no explanation.

Mahābhūta as Deity

The scope of this concept of the *Mahābhūta* is wide. As it is divided above on three planes, it can be further divided. There is a unanimous opinion that all these five gross elements come out of that imperishable soul.²⁰ In *Praśna* it is stated that these are the gods holding the living beings.²¹ Neither the

word *adhi* precedes there, nor any other explanation of the word *deva* is given. It is an example of *Mahābhūtas* being mentioned as *devas*.

Connection with Symbolic Ritual and Meditation

It can be said about this concept that it is rather a popular one. In *Praśna* the deities of the four gross elements are connected with the four vital breaths.²² It is a basic principle of the *Upaniṣads* that the one which lies in the body can be visualised well in the world. This may be the reason for the equation of vital breaths with the gross elements. Like *Bṛhadāraṇyaka Chāndogya* is well-known for its symbolic ritual. In the latter regarding *Udgītha*, the earth and the fire are connected with *tha* and the wind with *gī*.²³ Again in *Pañcavidha Sāman* the earth is related with *hiṅkāra* and *nidhana*, the fire with *pratihāra* and *hiṅkāra* and the wind with *prastāva*.²⁴ In *Bṛhadāraṇyaka*, except the earth, remaining four elements are included in the symbolic meditation. ²⁵ In the same *Upaniṣad* all the live gross elements are present in the famous *madhuvidyā*.²⁶ Further in that very *Upaniṣad* these five gross elements are declared as embodiments of the highest reality.²⁷ Symbolic ritual and symbolic meditation are two branches of the *Upaniṣadic* system, the one leading to religion and the other catering to philosophy. It also shows the gradual development of the *Upaniṣads* from the *Brāhmaṇas*, where the ritual had a primary role to play.

Victory Over *Mahābhūtas*

In *Bṛhadāraṇyaka* the gross elements are stated as the symbols of the Highest reality. *Śvetāśvatara* goes a step further and declares that for one who conquers these five elements there is no disease, no ageing and no death.²⁸ Further the *Upaniṣad* points out that the omniscient one rules over action which comes into effect including five gross elements.²⁹

To sum up, two ways of interpreting the concept of *Mahābhūta* have been highlighted here. The previous interpretation involves philosophical, material and literary viewpoints. They hold that the Supreme Being is the creator, sustainer and the destroyer of the universe. Some other sources hold the view that there is a gradual development (as it is in the evolution theory) and in that sequence the world is manifested. Both these views are supported by theories and views pertaining to cosmological and cosmogonic ideas.

In the second interpretation again there are three levels. In the first one, the *Mahābhūta* are treated as the principal agent or the deity, as it is in the *Praśna*, II.2. At the second level, they are regarded as the embodiment of that Highest Reality, which can be found in *Bṛhadāraṇyaka*, III.7.3,4,7,12 and 14. At the third level they are considered the creator of the world. A specific mention of this can be seen in the *Taitt*, II. 1. Keeping in mind all these references it can be said that these gross elements have a foremost position in the major *Upaniṣads*.

Abbreviations

Ait : *Aitareya*

Chāndo : *Chāndogya*

Taitt : *Taittirīya*

Praśna : *Praśna*

Br : *Bṛhadāraṇyaka*

Muṇḍ : *Muṇḍaka*

Śve : *Śvetāśvatara*

Notes

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07 The Five *Mahābhūtas*

A Semantic Analysis

A. M. Ghatage

By the word *mahābhūta* we usually understand the elements out of which all the material things in the world are formed or to which all the material things can be reduced. In this sense, these can be considered as the basic physical elements, the building blocks of the material world. The history of Indian Philosophy has given rise to two distinct trends of thought : One of them, which can be described as materialistic, in which the existence of these elements, is admitted as real, is the view of Cārvāka School (also called *Lokāyata*). The other, which is traditionally traced to Bṛhaspati whose postulates are often quoted for corroboration, admits the existence of mental or psychological entities as being equally real, and can be described as idealistic philosophy. These non-material entities may be either considered as having a fleeting existence, as is done by the Buddhist philosophers or they may be considered as permanent, as is done by the majority of Indian philosophical schools. A further trend of thought was developed later in which the mental or spiritual entity alone was regarded as really existing, thereby implying the non-existence of the material things, giving rise to a kind of monism. But the majority of the philosophical schools in India admitted the existence of both the mental and material elements and drew a sharp distinction between the two, and hence may be designated as realistic in nature. Among them a further distinction can be made between those who regarded the psychic element as being inactive, the activity being confined to the material elements as is done by the *Sāṃkhya*s, and those who assigned all the activity to the psychic element only, thinking the material elements as being inactive because of being insentient. The concept of the *mahābhūtas* and their proto-types called the *tanmātras* play a vital role in all philosophical systems of India.

Though these are generally admitted as real elements, the systems differ among themselves as regards their exact number and nature. Five of these are most frequently named, probably under the influence of the analysis to which the microcosm is subjected and wherein the number five plays an important part. Sometimes only four of them are given on the basis of everyday experience and insistence on their concrete form as is done by the Cārvāka, Jain and Buddhist Schools. There are however some indications of an earlier list of only three elements as can be seen from the *Vedānta* doctrine of *trivṛtkaraṇas* against the later *pañcīkaraṇa*.

Both these views are based upon the supposition that each element has something of the others in its composition. The Ionian Greek philosophers also refer to only three such elements, water, air and fire as the source of all things (Gr. *arkhē*), unless we choose to interpret *ēpeiron* of Anaximandros as standing for space which is endless. We may choose to consider only two - earth and waters - if we interpret the passage from *Bṛhadāraṇyaka Upaniṣad*, V. 5.1 *āpaevedamagra āsuḥ A itā āpaḥ satyamasrjanta satyaṃ brahma brahma prajāpatim prajāpatirdevān* as giving the whole list in this concept of cosmogony.

This paper attempts to concentrate on the words *mahābhūta* and *bhūta* and assess their nature from three different points of view, which are generally used in the study of ancient literature. As Bruno Snell points out, the study of early Greek philosophy, usually called pre-Socratic, is to be based on the interpretation of the Greek texts with a view to understand them from a mythological point of view, both as literary works and as showing aesthetic values. Another is a semantic analysis, by looking at the development of the meanings of the important words, leading to the history of ideas or concepts; or from a philosophical viewpoint by fixing

the context of the complex system of thought which they reveal. Here we can attempt only one of these approaches, viz., the historical development of the concepts associated with words *bhūta* or *mahābhūta* with the hope that we would be able to clarify them a little better. Here the key-words are studied not in the way in which a linguist or a lexicographer studies them, an approach in which emphasis is laid on the form of the words and their usage, but to concentrate on the **idea itself**, trace its origin and follow its development and ramifications.

The method which can be effectively used for this purpose would be to try to ascertain as accurately as possible the etymology of the words pertaining to the ideas in general, then to fix the scope by considering the contexts in which these words are used. Their places in the context of similar words in the same language or a group of closely related languages are also ascertained, so as to build a broad semantic field, and assign a function to the given word. Thus taking up the basic concept one tries to classify it along different scales, which are known as the semantic co-ordinates like concrete or abstract, an individual or a generic type, etc., and build up the history of the meaning of that word. Each of these steps has its own limitations and hence for arriving at a reasonably acceptable conclusion, it is necessary to supplement it with material obtained from what can be tentatively called a comparative study of word-meanings, which attempts to build up a prototype for its use as does the historical linguistics for the form of the word. Our attempt will be confined to the semantics of the given word. For the present, only one aspect or two of *mahābhūta*, namely, its predominant use in the field of cosmogony and cosmology and its numerical scope are taken up.

Let us translate the word *mahābhūta* as 'basic element'. Its use is most conspicuous in speculations on the early cosmogonies and cosmologies in the Indian and Greek traditions. These material elements seem to have grown in number from three to four and then to five and their primitive meanings are preserved in the two well-developed systems of Buddhism and Jainism, the two so-called heterodox systems. In other words, they mark an earlier stage of the concept of the *mahābhūtas* as compared to the other systems of Indian thought, and their primary meaning is better revealed in the growth of these concepts in the early Greek Philosophy.

The traditional list enumerates them as *pṛthivī* (earth); *āpaḥ* (waters); *agni* (fire); *vāyu* (air); and *ākāśa* (sky). In its reverse order we find them at *Taittirīya* (2.1): "*tasmād vā etasmād ātmana ākāśas sambhūtaḥ A ākāśāt vāyuḥ A vāyoragniḥ A agnerāpaḥ A adbhyaḥ pṛthivī*". Originally they were called merely as *bhūtas*. The earliest occurrence of the word *mahābhūta* is found in the *Aitareya Āraṇyaka* (3.4): *imāni ca pañca mahābhūtāni pṛthivī, vāyuḥ ākāśaḥ āpo jyotiṃṣi*. It is again found in the apocryphal 14th chapter of *Nirukta* the meaning of which is not at all clear. Another relatively early use is found in Charaka's *Śarīrasthāna* (1.27.28): *mahābhūtāni khaṃ vāyuragnirāpaḥ kṣitistathā*. In the Pāli literature it is found in the *Sāmaññaphalasuttaṃ* of the *Dīghanikāya*: *ayaṃ kho me kāyo rūpī cātumahābhūtiko mātāpettikasambhavo odanakummāsūpacayo . . . idaṃ ca paṇ me viññāṇaṃ ettha sitaṃ ettha paḍibaddhaṃ*; in the *Samyuttanikāya*, 22.82 : *cattāro kho bhikkhū mahābhūtā hetu cattāro mahābhūtā pañcayo rūpakkhandhassa pañcāpanāya*; in the *PañcaskandhaPrakaraṇa* of Vasubandhu (as rendered in Sanskrit) *yat kincit rūpaṃ sarvaṃ tat catvāri mahābhūtāni catvāri ca mahābhūtāni upādāya*. Most of the earlier *Upaniṣads* and Jain and Buddhist works use the simpler word *bhūtāni* as in *Taittirīya* 3.1: *yato vā imāni bhūtāni jāyante yena jātāni jīvanti yat prayanti*; *Chandogya*, 1.9.1: *sarvāṇi ha vā imāni bhūtānyākāśadeva samutpadyante ākāśaṃ pratyastaṃ yānti*. (We should note particularly the words *sarvāṇi* and *ākāśas* the source); *Bṛhadāraṇyaka*, 2.4.2 : *etebhyo bhūtebhyaḥ samutthāya tānyeva amvinaśyati* (referring to *idaṃ mahābhūtāni*), 4.5.13, *Śvetāśvatara*, 1.2 : *kālaḥ svabhāvo niyatiryadṛcchā bhūtāni yoniḥ puruṣa iti cintyam* A

In all other cases where the word *bhūta* is used in the eighteen *Upaniṣads* it means a creature or a being and not the material element. In the Pāli works, the word, usually used for the material element is

not *bhūta* but *dhātu*. It is highly instructive to read Buddhaghoṣa's commentary *Papañcasūdanī* on *Majjhimanikāya* which says : *tatthāyaṃ bhūtasaddo pañcakkhaṃdha-amanussa-dhātu-vijjamāna-khīṇāsava-satta-rukkhādisu dīssati*. These seven meanings are explained by him with passages from the Pāli canon as (1)(*pañcasu khaṃdhesu*); (2) 'goblin' (*yānīdha bhūtāni samāgatāni*); (3) the four material elements (*catusu dhātusū*); (4) any inanimate object (*bhūtasmiṃ pācittiyaṃ*); (5) as the predicative use of the verb (*bhū kāladhaso bhūto*); (6) all beings (*sabbe va nikkhipiṃsaṃti bhūtāloke samussayaṃ*); and (7) the vegetable kingdom, particularly the trees or plants (*bhūtagāmapātavyatāyā*).

The conclusion from this evidence can be easily drawn. *Mahābhūta* is the latest term to be used for the physical elements, which are taken collectively and hence mostly used in plural. This should be distinguished from its other use, where it is found without forming a *samāsa* and means the 'great being' *evaṃ vā ar/e idaṃ mahad bhūtam anantam apāraṃ vijñānaghana eva - Brhadāranyaka*, 2.4.12, immediately followed by the other use of *bhūta* in *Aitareya: bhūtebhyaḥ samutthāya*. It thus replaces the earlier word *bhūta* in the same sense. The Buddhists found the word *bhūta* in the sense of the material element confusing, because the primary and usual sense of the word was 'living being'. Hence they replaced it with the word *dhātu* which has the required meaning of a material substance. In its turn the word *bhūta* had the meaning of an embodied being, a living creature and incidentally 'A tree' when it is thought to possess life. It may be noted that the use of the word *bhūta* in this sense does not make a distinction between the material body and the animating soul, and thus represents a stage where both were inextricably mixed up, a stage in which these two aspects were not separated.

In the Jain philosophical writings both in Sanskrit and Prākṛt, the word *mahābhūta* is used while referring to the non-Jain systems of philosophy. Thus in the *Sūyagada*, 1.1.1 called the *samayajihayaṇa* a reference to the *Lokāyata* system is found in the following two verses: *santi pañca mahabbhūyā ihamegesimāhiyā ete pañca mahabbhūyā. . . āyachaddā pujegātu* A all of which refer to the Cārvāka system and again at 2.1.654 : *iha khalu pañca mahabbhūyā jehiṃ no kijaī kiriyā* A It also uses the word *pañchamahabbhūyā* to refer to an adherent of this system. In all other cases the word *bhūyā* or *bhūyāiṃ* is used to refer to all kinds of living beings, *mettiṃ bhū/eṣu kappa/e bhū/eḥiṃ na virujjhejjhā* and to groups of various grades of living beings *ḥhāṇaṃga* 3.359: *devāṇāgā jakkhā bhūyā* and the word *bhūyagāma* is used as a collective term. In fact, the phrase *sabb/e pāṇā, sabb/e bhūyā sabbe jīvā sabbe sattā* occurs hundreds of times in the *Ardhamāgadhī* canon. In the later philosophical writings exemplified by the *Gaṇadharavāda* of the *Vīśeṣāvaśyakabhāṣya* of Jinabhadra the words *pañcabhūyā* or *bhūyā* are used to remove the doubts of the fourth, *Gaṇadharaṃ Viyatta: kim maṇṇe pañcabhūyā atthi va nathitti sansao tujja (1649); pañcakkhesu ṇa jutte tuha bhūmijaḷāṇalesu saṇdeho A aṇilāgāsesu bhava so viṇa kajjoṇumāṇāo (1748)*. We may note in passing that Jinabhadra appears to believe that while the earth, water and fire are directly observable, wind and sky are only to be inferred being not perceptible. What he means can only be clarified in the context of the atomic theory of the Jain philosophers.

The usually accepted five material elements are rubricated in the classical philosophy of the Jains and are elaborated in the famous authoritative work, the *Tattvārthasūtra* of Umāswāti in a peculiar way thus differing from all other philosophical systems. Four of them are included in the concept of *pudgala* which stands for matter in general and the last one called *ākāśa* gets its place along with two other elements called *dharma* and *adhama* as non-sentient entities and coupled with the sentient living beings, *jīvas*, they form the group of five *astikāyas*. This group is then opposed to *kāla* (time) which is regarded as an immaterial non-living thing. Altogether they make up the six *dravyas* and constitute the whole universe called *loka tattvārtha, tatra lokaḥ kaḥ katividho vā kiṃ saṃstho vā A atrocyate pañcāstikāyasamudayo lokaḥ (3-6)*. The space beyond the *loka* is called *alokākāśa* which is said to be completely void, which makes the place of *ākāśa* incompatible with the other four material elements. The latter forms a group by themselves to be contrasted with the living elements on the basis of their atomic structure. The current word

used for them is *astikāya* 'having body'. Kundakunda, in his *Pañcāstikāya* points out that the *aṇu* or *paramāṇu* is the cause of the four *dhātus* (another term for the four material elements) and explains that they are constituted by the molecular units formed of the atoms. Each atom is supposed to possess one of the tastes *tikta*, *kaṭuka*, *kaṣāya*, *āmla* and *madhura*, one of the five colours *śveta*, *pīta*, *harita*, *aruṇa* and *kṛṣṇa*, one of the two smells *sugandha* and *durgandha* and at least two pairs of touch, *karkaśa*, *mṛdu*, *guru*, *laghu*, *śītoṣṇa*, *snigdharūkṣa* the last two pairs being compatible with each other, which means that a *paramāṇu* can be either cold or hot, wet or dry. It is also credited with various shapes like *parimaṇḍala*, *trikoṇa*, *caturasra*, *āyata* etc. This description of the atom appears to have a close resemblance with the description given by Leukippos and elaborated by Demokritos. In their view an atom is round and warm, white and rough, black and smooth, sour and angular, and sweet and large, round. This can hardly be an accident. This stage of thought is nearer the concept of animatism than animism, the first and second stages of the semantic development.

This complex theory of the atoms was not known to the earlier Jain writings, and they used the material elements as a part of their doctrine of *Chajjīvani-kāya* the standard description of which is found in the 4th chapter of *Dasaveyāliya*, a *mūlasūtra*. The text says these six are *puḍhvikāiyā*, *āḍakāiyā*, *teḍakāiyā*, *vaṇassaikāiyā* and *tasakāiyā*. This view is completely animistic in nature. The elements are conceived as animated beings and only as an afterthought the body is thought to be made of the various elements. The *Vaiśeṣika* theory that all the elements have a threefold form viz. *śarīra-indriya-viśaya-bhedāt* and the view that the earth-body is what we find here, while the bodies of other elements are located in the *Varuṇaloka*, the *Ādityaloka* and the *Vāyuloka* is a result of this secondary interpretation. *Ākāśa* being incorporeal is excluded from this scheme. The interrelation between the views of the Cārvākas, Buddhists, the Jains and the Vaiśeṣikas is not yet fully worked out in detail.

Before we are able to decide the exact stage of semantic development of these elements called *bhūtas* it is necessary to fix the earliest meaning of this word. It occurs in all Indian philosophical systems and in the so-called scientific cosmogonies of the pre-Socratic philosophers in Greece. It may be pointed out that there is no common word found in Greek to cover all the elements together and they are considered as having their own *phlūsis*. The surest example of the reconstruction of a root in IE period is supplied by the equation Gr. *phlūsis* and Skt. *bhūta* and a number of verbal and adjectival forms derived from this root. These can be listed as follows:

Skt. *abhūta*, Gr. *lephū* aorist 3rd sg., Skt. *Bhūyāt*, Gr. *phui*"e benedictive, Skt. *babhūvān*, Gr. *pephu*"os perfect part., and its fem. Skt. *babhūv|uṣī*, Gr. *pephun*"ea. From these forms it is easy to set up the equation IE *bhe t* - Skt *bhū*, Gr. *ph|u*"o. There is a minor point of sound change in this, because the vowel is long in Sanskrit but short in Greek. The most likely explanation for it is to consider the root as having a dissyllabic structure. The root vowel was originally short, which has been set up as a long *ū* in Skt., for purely technical reasons that the root is to be given in the form in which it occurs in the past passive participle. That the vowel was originally short is reflected in the *sūtra* of Pāṇini *bhūvādayo dhātavaḥ*, 1.3.1. where, in spite of Patañjali, the V-sound was a mere glide between *bhū* and *ādi*.

The main purpose of this comparison is to find out the original meaning of this root. Without going into details I am inclined to think that the suppletion between the two Indo-European roots *bhe t* and *es* tell us their semantic relationship. While *as* - has the meaning of a verb of existence, the root *bhe t* - expresses the idea of growth, development, change. This is reflected in the Pāṇini's *Sūtra* 2.4.52 *asterbhūḥ* by which the root *bhū* replaces the root *as* in all non-conjugational tenses, which can be explained only on the assumption that *as* has a stative aspect, confirming the fact as it is, while *bhe t* has a progressive aspect, stating what the thing is growing or developing into. The first is static while the second is dynamic. This is quite clear in Sanskrit where *bhavati* means 'it grows', while *asti* means 'it exists'. Prof. Burnel appears to think that the

corresponding root in Greek and its noun form *ph/Usis* means 'the stuff out of which a thing is made', thus having nearly the same meaning which *arkh"e* has. Most linguists however believe that the root means 'to grow', and the noun means 'growth'. The meaning of *ph/Usis* as 'nature of a thing' is a later development due to its contrast with the other word *th/esis* which means what is attributed or assigned to a thing, in fact, the association of a word with its meaning which corresponds to the Sanskrit concept of *vr̥tti* or *saṃketa*. Its exact Skt. correspondence is *bhūti* which never has the meaning of existence but that of growth and hence prosperity. On the other hand, the passive participle of the root *bhe* † gives us in Sanskrit *bhūta* which has been all along used to refer to living beings. Only on this suffixation can we explain the meaning 'a tree' of this word as attested by Buddhaghosa in Pāli and the meaning of the Greek word *ph/uton* to mean a plant or tree as can be seen from its use in words like *zoophyte* - 'a plant resembling an animal' and *phyto*-graphy which means descriptive botany. This original meaning plays an important role in the context of cosmogony both in India and Greece where we are told that one thing gives birth to another or one thing merges into another, which are the basic concepts of the cosmogony of the elements.

The speculations of a cosmological nature which are found scattered in the major *Upaniṣads* have been clearly summarised by Prof. R.D. Ranade in his well-known work, *A Constructive Survey of Upanisadic Philosophy*, in which he has also drawn attention to similar ideas found in early Ionian philosophers from the seventh century onwards. Thales the earliest among them considered that all things came out of water. Anaximenes thought that air is the primary substance out of which arose all others by the process of *man/osis* 'thinning' and *p/ullnosis* 'the process of thickening'. Anaximander considered the primary substance to be infinite or indeterminate, calling it *a-peiron* 'endless', which was intermediate between earth and water on the one side and air and fire on the other, from which developed all these four elements.

Heracleitos of Ephesos championed the claim of fire as the source of the other elements by saying that fire first transformed itself into sea and this changed partly into earth and partly into air (*pr"est"/e*) as can be seen from his fragments 20 to 26. With these can be compared *Bṛhadāraṇyaka*, V.5.1: *āpevedamagre āsuḥ A tā āpaḥ satyamasrjanta. Chāndogya*, IV.3.1: *vāyurvāva saṃvargo A yadā vā agnirudvāyati vāyumeva apyeti A yadā āpaḥ ucchuṣyanti vāyumeva apiyanti. We find in Chāndogya*, VI. 8.4 the suggestion that the first evolve was fire from which came water and food (which stands for the earth) on the analogy of the root and the shoot of a tree: *evameva khalu somya annena śuṅgena āpomūlamanviccha, adbhiḥ somya śuṅgena tejomūlamanviccha tejasā somya śuṅgena sanmūlamanviccha*. There are a couple of passages where *ākāśa* (is it sky? heaven, or space?) is considered as the source of all the other elements. *Chāndogya* 1.9.1: *sarvāṇi ha vā imāni bhūtāni ākāśādeva samutpadyante ākāśaṃ pratyastam yanti*. As thought progressed, the *Upaniṣads* suggested some abstract or psychological objects as the real source of all these elements. Like Anaximander's *la-peiron ākāśa* is taken as the source of all. Similarly *asat* (Gr. *m"e /on*), *sat* (Gr. */on*), *prāṇa*, *ātman* and still later a creator was taken as the original point of departure. All these speculations suggest some further progress of thought, but do not explain or clarify the older ideas of taking the elements as basic, which certainly was the earlier stage.

To understand the conceptual background of these earlier cosmogonies, we have to look at the history of the meanings of the words used for the elements. In other words, we have to fix the original meanings of the names of these elements. A few facts about them may be stated without much discussion. The words *pr̥thivī*, *ap*, *tejas*, *vāyu* and *ākāśa* appear to be their original designations. Only at a later stage, when these words lost their cosmological affiliations are they replaced by other words having the same meaning. From being of specific connotations, they acquired more generalised meaning and then it became unimportant which word could be used for them. One can compare the original words with the words used in a text like *Caraka Saṃhitā*: *kha*, *ap*, *vāyu*, *agni*, *kṣiti*, *mahī* and *bhūmi* are used only in the *Jaiminīyopaniṣad*, 1.10.10, while *kṣiti* is found in the older *Upaniṣads*. *Maitrāyaṇī* has the list in the form *ākāśa vāyuvagnyudaka bhūmyādayaḥ* 6.4; *vāta* is not used in this context, as also *udaka*. In *Muṇḍaka*, 2.1.3 we read: *etasmāt (puruṣāt) jāyate prāṇo manaḥ sarvendriyāṇi ca Akhaṃ vāyurijotirāpaḥ pr̥thivī viśvasya*

dhāriṇī A which is a very late form of cosmogony and these things never play the role of a source. Long ago Meillet showed that while *udaka* means water in a secular sense, *āpaḥ* has religious and cosmological associations. Of the two IE words for fire, *agni* (IE *ognis*) and *p₁ur*, the first is the older being found in the marginal areas while *pur* (e.g. fire) is an innovation.

The situation is very similar to this in Greek as well. For earth both *gē* and *khthōn* are used but the first gets a place in the cosmology as one member of the primeval pair, and is used as an element. *khthōn* cognate with Skt. *ḥṣmā* mostly refers to the surface of the earth, as a place of habitation. In the *Iliad*, XIX-259 it is associated with the seen and the Erinyes and occurs in the utterance of an imprecation (*gē te Kāi hēlios Kāi Evineies*). For wind *laveimos* (root - *ave-* to blow) is used which suggests its origin in breathing, while Sanskrit *vāyu* corresponds to *a^{er}* and originally meant mist, or lower atmosphere, as against the upper vault or firmament, which corresponds to Sanskrit *ākāśa* 'the shining one'. The word used in the building up of the Greek mythology is however *Ouranos* 'heaven'. *Aith₁er* is used as a feminine noun to refer to the upper air or heaven. Thus air and sky did not occur as different elements in Greek cosmogony. Here either one or other element is taken as the original substance which in the Greek mythology is concerned as a living thing, and in no way different from the anthropomorphic gods.

The situation is slightly different in the Upaniṣadic cosmogonies. While commenting upon *Chāndogya*, III.14.1: *tajjalāniti śānta upāsīta* the cryptic word *tajjalān* is explained by Śaṅkara with the words, *kathaṃ sarvasya brahmatvam-ityata āha tajjalāniti A tasmād brahmaṇo jātaṃ tejo'bannādikrameṇa sarvam A atastajjam A tathā tenaiva jananakrameṇa pratilomatayā tasminneva brahmaṇi līyate tadātmatayā śliṣyate iti tallam A tathā tasminneva sthitikāle'niti prāṇiti ceṣṭate iti A*

Whatever the value of such an explanation, taking the word-element *ja* from *jāta*, *la* from *līyate* and *an* from *aniti*, it is obvious that the cosmogonies use two methods of evolution and involution to describe the process of creation or dissolution, which is only partly true of the Greek cosmogonies. Obviously the process is built on the model of the birth, existence, and death of a man or a living being. A close scrutiny of the wording of the cosmogonies reveals the fact that in all of them, the process of birth and also that of absorption or end on the part of these basic elements is used in the active sense, as something which they do. This means they are animate things acting on their own. In this context we should consider expressions like: *tā āpaḥ satyamasrjanta tadaikṣata bahu syāṃ prajāyeyeti, tattejo'srjata* while creating and *apyeti, prayanti, abhisamviśanti* while merging, which attribute to them conscious acts of origination and dissolution.

Let us summarise the semantic development discussed so far. The four elements or *mahābhūtas* were originally considered as living objects like men and animals, and hence could do all the activities which were expected of them as living beings. This stage of thought is given the name of animatism by the anthropologists while dealing with the origins of religion. At this stage no distinction was drawn between the living and lifeless. This was the stage at which these four or five *mahābhūtas* were conceived.

In the next stage occurred a differentiation between those who were endowed with the power of conscious activity which gave rise to anthropomorphism and there emerged mythological stories when these elements, particularly the earth, water, air and sky were personified to produce the stories of creation. This marked the second stage of thought where a distinction was drawn between the sentient element and the non-sentient part which was conceived as the bodies of these elements. This gave rise to what are known as the scientific cosmogonies of the early Greek thinkers, and also some of the early cosmogonies found in the *Upaniṣads*.

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The third stage of development further emphasized the part played by the psychic element in creation and the cosmologies were so adjusted as to give to these elements the real activity of production, while their bodies were regarded as inanimate by nature. This completed the distinction between living and lifeless things. Further growth of thought centred round the ephemeral or permanent nature of the psychic element called the soul. The semantic history of the Greek word *psūkhē* epitomises this development in its three successive meanings breath, life and soul, while others like *gē*, *herdior*, *pjur*, *anemos*, *aithēr* or *ouranos* became fixed in their meanings at the end of the second stage of development.

08 The Mahābhūtas

The Buddhist Approach

Pratibha Pingle

While considering the concept of *mahābhūtas* in the Buddhist context, normally attention is drawn to Pāli commentaries, but the present discussion is based not on the Pāli sources,¹ but on Sanskrit sources and to be very precise, on a later work, the *Abhidharmakośa* of Vasubandhu. This is because of the fact that although late (i.e. fourth century AD) the *Abhidharmakośa* is a systematized exposition of a much earlier work, the *Abhidharma-Vibhāṣā Śāstra*, which is a commentary on the *Abhidharma* of the *Sarvāstivāda* school. And this school is one of the earliest of the Buddhist sects. The age of Vasubandhu is about the same as that of the Pāli commentaries. Moreover, the *Abhidharmakośa* is accepted as an authority by all the schools of Buddhism, though it is written from the standpoint of the *Sarvāstivāda*. And that is why *Abhidharmakośa* will be the main source for this discussion about the *bhūtas*.

The terms *mahābhūta* (the gross elements of matter) and *aṇu* are not specifically Buddhist, though the terms *pṛthivī* etc., have lost their original meaning completely in the Buddhist context. This is the characteristic example of the Buddhist terms, which in the beginning were definitely a physical phenomenon, and acquired psychological character subsequently. In the field of the Buddhist theory of the *dhammas*, which explains the existence of consciousness-stream, it is not easy to explain the terms like *bhūta* and *aṇu* which have obviously a material meaning. To the Buddhist, the universal elements of Matter are more energies than the substances. And this is indicated by the fact that air (*vāyu*), the fourth gross element is characterised by motion.

Now let us see the place of the *mahābhūtas* in the context of Buddhist philosophy. The simplest classification of all the elements of existence is represented by a division into five groups of elements. The first of them is matter - *Rūpaskandha*. The physical elements of personality, including its outer world, i.e., the external objects, are represented by this one item - matter. If we use the old pre-Buddhistic term *nāma-rūpa*, this matter, the first of the five *skandhas* - is *rūpa* and the rest of the four *skandhas* - *vedanā* (feelings), *samjñā* (ideas), *Saṃskāra* (volition) and *vijñāna* (pure sensation) come under the category of *nāma*. *Abhidharmakośa* explains this *rūpa* -

rupaṃ pañcendriyāṅyarthāḥ pañcāvijñāptireva ca A

Abhi. 1.9.

The *rūpa-skandha* consists of five senseorgans (*indriyas*), their five objects (*arthas*) and the unmanifested Act (*avijñapti*).

Thus it is eleven fold. The five sense -organs are the eye, the ear, the nose, the tongue and the tactile organ. And the five objects are the objects of these very sense-organs, namely the visible, the sound, the odour, the taste and the tangible. It is further said -

tadvijñānāśrayā rūpaprasādāścakṣurādayaḥ A

Abhi., 1.9

The subtle material elements (*rūpaprasāda*) (conveying visual and other sensations), which are the points of support (*āśraya*) for the respective consciousness of the visual etc. (or the eye etc.) are the five sense-organs the eye etc.

Vasubandhu quotes from the *Prakaraṇa-grantha* -

caḅᅓuᅓ katamat A caḅᅓurvijñānāśrayo rūpaprasādaᅓ

What is *caḅᅓu*. It is subtle material element (*rūpaprasāda*) which is a point of support for the eye consciousness etc.

Similar is the case with the rest of the sense-organs. And this *rūpaprasāda* or the subtle material element is derived (*upādāya*) from *mahābhūta*, the gross elements. "O Monk, the eye is the internal base of cognition of the subtle element of matter, which is derived from the four gross elements. This is the explanation". Thus the five sense-organs and their five external objects (and of course *avijñapti*) is the Matter. In other words matter is nothing but sense-data. It is broadly divided into two categories. Objective sense-data (*artha* or *viᅓaya*) constituting external objects and the sense-organs conceived as a kind of translucent subtle matter (*rūpaprasāda*) which is "like the shining of the jewel, it cannot be cut into two. And it disappears without a residue at death". It covers the body when it is living. This division is similar to the *Sāmkhya* view that matter developed along two different lines, the one with predominance of the translucent intelligence-stuff (*sattva*) resulting in sense-organs, the other with predominance of dead matter (*tamas*) resulting in sense-objects in their subtle (*tanmātra*) and gross (*mahābhūta*) forms. The concept of *tanmātra* comes very near to the Buddhist conception of an element of matter. But the fundamental difference between the two conceptions is that in the *Sāmkhya* system these elements are modifications of an eternal substance. In Buddhism they are mere sense-data without any substance in them.

After explaining the nature of these sense-organs the *Koᅓa* describes the external objects.

The visible is two-fold and twentyfold.

The sound is eightfold.

The taste is sixfold.

The odour is fourfold.

The tangibles are elevenfold.

(For details please see the Appendix)

When we say that *rūpa* consists of the sense-organs and their external object, we have to see what the term *rūpa* means : *rūpyate bādhyate iti rūpam*. Matter is what materializes. According to Prof. Th. Stcherbatsky, matter is what materializes. Different meanings are given of this materializing - as pressure, pain, disappearance or change. Thus matter is something that disappears. The real meaning is impenetrability (*sapratighatva*) which is further expressed variously. The impenetrability is defined as the fact that space occupied by one of them cannot at the same time be occupied by another. This *rūpa* or matter is atomic.

When it is said that both the types of matter is derived from the *mahābhūtas*, which are these *bhūtas* -

bhūtāni pᅓthivīdhāturaptejovāyudhātavaᅓᅓ . . mahattvameᅓām

sarvānyarūpāśrayatvenaudārikatvat A

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The gross material elements (*bhūtas*) are the primary substances (*dhātu*) of earth, water, fire and air. Their grossness is because of their greatness and because of their being the support of all other forms.²

And again in which these primary substances - (*dhātus*) are established. What is their nature?

te punarete dhātavaḥ kasmin karmaṇi saṃsiddhā A

kim svabhāvāścetyāha dhṛtyādikarmasaṃsiddhā AA

Abhi, 1.12.

They are established through their (respective) functions like supporting etc.

These primary substances - the earth, water, fire and air - are established through their respective functions as follows :

earth	-	<i>dhṛti</i> or holding together,			
water	-	<i>saṃgraha</i> or cohesion or striking.			
fire	-	<i>pakti</i> ,	ripening,	maturing	or
transformation			and		
air	-	<i>vyūhana</i> movement.			

Vyūhana should be understood as expansion, *vṛddhi* or *prasarpaṇa*.

Their natures are respectively

kharasnehoṣṇateraṇāḥ A kharah pṛthivīdhātuḥ A sneho'bdhātuḥ A

uṣṇatā tejodhātuḥ A īraṇā vāyudhātuḥ A

Hardness is the earth element.

Adhesion is the water element

Heat is the fire element.

Motion is the air element.

The *Abhidharmakośa* also explains the different meaning of the word *pṛthivī* in the sense of a *bhūta* and in the common usage. This peculiarity of the Buddhist terms is already mentioned in the beginning.

The *Kośa* says -

kaḥ punaḥ pṛthivyādīnām pṛthivīdhātvādīnām ca viśeṣaḥ ?

What is the distinction between the earth and the earth element.

ṛṥhivī varṇasaṃsthānamucyate lokasaṃjñayā A

In common parlance what is designated as earth is colour (*varṇa*) and shape (*saṃsthāna*).

Now what is *ṛṥhivīdhātu*? We have already seen that the matter is atomic. These are simple atoms (*dravyaparamāṇu*) and combined atoms (*saṅghātaparamāṇu*). The *dravyaparamāṇus* do not appear separately. The combined ones include four atoms of 'universal elements' (*mahābhūtas*) conventionally termed as earth, water, fire, air. But it is expressly stated that these are only conventional names, they denote respectively a hard stuff, a coagulating stuff, heat and motion. They are called universal because they are present everywhere, in every piece of matter, always in the same proportion; but in some combinations one or the other energy may get greater intensity and we accordingly get hard and liquid stuffs, warm and moving bodies. There is as much element of heat in a blazing flame as there is in wood or in water and *vice versa*. The difference is only in their intensity, e.g. the tactile sensation may have a different degree of intensity as the touch by the bunch of steel needles is more intensely felt than the touch of a painter's brush although the quantity may be the same. It is also said that the existence of cohesion, i.e., of the element water in a flame is proved by its keeping a shape. The pressure of repulsion of hardness, i.e., of the element of earth, in water is proved by the fact of its supporting a ship etc. Yaśomitra's *Sphuṭārthā* - the *Adhidharmakośabhāṣya* - explains many such examples in II. 22.3 The *Kośa* says:

rūpyate bādhyate ityarthaḥ

Rūpa is that which obstructs.

What is that obstruction

rūpasya punaḥ kā bādhanā? vipariṇāmotpādanā

What is the nature of that impress or obstruction created by *rūpa*. It brings about some change, creation of transformation.

na vai paramāṇurūpaṃ ekaṃ ṛthag bhūtamasti A

saṅghātasthaṃ tu tad rūpyata eva A

The separate atom does not have any form. But in collected form it impresses or obstructs.⁴ Every combined atom includes four atoms of the four *mahābhūtas* or universal elements and at least four secondary atoms, what may be termed as atoms or quality (*bhautikā*) - of colour, of smell, of taste and of touch, one of each. Consequently a combined atom consists at least of eight simple atoms in *Kāmadhātu*. When matter resounds, an atom of sound becomes present in every combined atom, it then consists of nine parts. The number increases in organic matter, the organs of sense being also a special atomic matter. Each secondary atom always has as its support a combination of four universal ones. According to other authorities the number of primary atoms supporting each atom of quality must be eight, two of each element. So (in reality) a combined atom has many more parts, but it is usually spoken of as consisting of eight kinds of matter at least. And this only is the sphere of defiled matter (*kāmadhātu*). In the higher regions of pure matter (*rūpadhātu*) smells and tastes are absent and the combined atom changes accordingly.

We have already seen that the subtle or translucent organic matter is also atomic. It is represented by five different kinds of atoms. The *Kośa* gives the description and the arrangement of these atoms.⁵

The atoms of the eye the organ of sight (*caṅsurindriya*) cover in concentric circles the pupil of the eye; these look like the small jar flowing. The atoms of the ear are arranged inside the conch or the outer ear. The atoms of the nose, the olfactory organ - are located inside the nostrils. These look like cone-shaped and remain arranged like the garland in the same way as the atoms of the eye and ear are arranged. The atoms of the organ of taste, or precisely, that matter which is supposed to convey the sensation of taste or the gestatory organ are like a half moon. They are scarcely spread over the centre of the tongue. The atoms of the tactile organ are pervasive in character as the organ itself. It is said that all the atoms of the organ of sight and the tactile organ are not *sabhāga* (or function only in their own field). Some of them are *tatsambhāga* (not confined to their own field). The atoms of other organs are *sabhāga* only. The atoms of *pumindriya* (the faculty of masculinity) look like the thumb (*aṅguṣṭha*) and of *strīndriya* (faculty of femininity) are like the horn (*bherī*) or vessel (*kaṭāha*). These two organs are placed in some parts of *kāyendriya* but these are distinctly different both in structure and function. That is why their atoms are separately mentioned.

The Buddhists explain their atom-theory as parallel to the *kṣaṇavāda*. Atom is the smallest unit of so-called matter.⁶ Moment is the smallest unit of so-called time. And all atoms are momentary existences having no duration.

So far we have discussed the ten aspects of the elevenfold Buddhist matter. The subtle, internal fivefold organic matter and the five external objects. Now let us come to the eleventh aspect - *avijñapti*, which is not discussed in Pāli Commentaries so elaborately.

The *Kośa* says :

vikṣiptācittakasyāpi yo'nubandhaḥ śubhāśubhaḥ A

mahābhūtānyupādāya sa hyavijñaptirucyate A

Abhi., 1.11

Avijñapti is that stream of actions which being morally either good or bad, is present even in the mind of a distracted or unconscious person and which is essentially a product of material element.

The term *avijñapti* implies that this particular kind of physical element cannot be revealed to others. Unlike the other ten elements of *rūpaskandha*, it is unmanifested and undiscoverable. When we promise to do something and then fulfil the promise after some time, the interval between the promise and the overt action of its fulfilment represent the period, when the physical action remains unexpressed as *avijñaptirūpa*. The folding of one's hands in prayer and an accidental, unintentional folding of the hands are two different kinds of actions, the former being accompanied by concealed form of moral activity - *avijñaptirūpa*. Obviously *avijñaptirūpa* has a twofold character. It is not merely a *rūpa* like the visible etc., because unmanifested as it is, it always implies some kind of activity (*kriyā*); nor is it mere activity, because, it is essentially a product of the material elements and therefore shares the nature of *rūpa*.

This idea of *avijñapti* is a special concept recognised by only the *Sarvāstivādins*.⁷

In Indian tradition the *mahābhūtas* are counted as five, the fifth being *ākāśa*. In the *Kośa*, *ākāśa* is included in the *asa=mskṛta dharmas* :

anāsravā mārgasatyam trividham cāpyasaṅskṛtam A

ākāśam dvau nirodhau ca tatrākāśamanāvṛtiḥ AA

Abhi., 1.5

Undefined *dharmas* (*anāsravā*) consist of truth of the path of salvation and the threefold unconditioned *dharmas* - space and two types of cessation. Space means absence of covering (where matter can penetrate).

Thus contrary to the matter, it is of the nature of non-obstruction. It is *arūpī, anidarśana, apratigha, anāsrava* and *asa=mskṛta*. But when *ākāśa* is counted in the list of *dhātus* or the elements of existence it is exactly the opposite, i.e., *rūpī, sanidarśana, sapratigha, sāsrava* and *sa=mskṛta*. *Abhidharma* defines local space as a hole or cavity in which there are no material objects but which like a mouth or gate is near them and can be perceived. It is described as the gaps or holes which occur between visible objects. This local space is described to be two-fold. The cavities in doors and windows etc. is external *ākāśadhātu*. And the cavities in the mouth or nose is internal *ākāśadhātu*.

Thus according to *Kośa*, *ākāśa* is not included in the list of the *mahābhūtas*.

Generally speaking the Buddhists do not show much interest in what the *bhūtas* are and what they do. This absence could be because of two reasons :

1. Keeping in mind the goal of the Buddhists there was no incentive to do any serious thinking about the non-human and non-moral universe.
2. Secondly, the Buddhists attributed moral function to the law of cause and effect. They did not accept cosmic activity as impersonal and inevitable but explained it in the light of their belief in the *karma* theory. However, the concept of the *mahābhūtas* is discussed in detail in the *Abhidharma* texts.

APPENDIX

I. The Visible (*Rūpa*) is twofold - colour and form.

The colour is fourfold - blue, yellow, red, white, other colours are the varieties of these four. The form is eightfold - odd etc.

(In other words) the same *Rūpāyatana* is twentyfold:

- | | | |
|-------------------|---|---------------|
| 1. <i>nīla</i> | - | <i>blue</i> |
| 2. <i>pīta</i> | - | <i>yellow</i> |
| 3. <i>lohita</i> | - | <i>red</i> |
| 4. <i>avadāta</i> | - | <i>white</i> |
| 5. <i>dīrgha</i> | - | <i>long</i> |
| 6. <i>hrasva</i> | - | <i>short</i> |

- | | | | |
|-----|--------------------|---|--------------------------------------|
| 7. | <i>ṛtta</i> | - | <i>round</i> |
| 8. | <i>parimaṇḍala</i> | - | <i>circle</i> |
| 9. | <i>unnata</i> | - | <i>high</i> |
| 10. | <i>avanata</i> | - | <i>low</i> |
| 11. | <i>sāta</i> | - | <i>even</i> |
| 12. | <i>visata</i> | - | <i>odd</i> |
| 13. | <i>abhra</i> | - | <i>of the colour of the cloud</i> |
| 14. | <i>dhūma</i> | - | <i>of the colour of the smoke</i> |
| 15. | <i>rajas</i> | - | <i>of the colour of the dust</i> |
| 16. | <i>mahika</i> | - | <i>of the colour of the mist</i> |
| 17. | <i>chāyā</i> | - | <i>of the colour of the shadow</i> |
| 18. | <i>ātapa</i> | - | <i>of the colour of the sun</i> |
| 19. | <i>āloka</i> | - | <i>of the colour of the moon</i> |
| 20. | <i>andhakāra</i> | - | <i>of the colour of the darkness</i> |

II. The audible is eightfold:

1. *upāttamahābhūta* - produced artificially by four gross elements.
2. *anupāttamahābhūta* - produced non-artificially by four gross elements.
3. *sattvākhya* - produced by living beings.
4. *asattvākhya* - produced by non-living being. Each of these forms is further divided into harmonious (*manojñā*) and discordant (*amanojñā*).

III. The taste is sixfold:

1. *madhura* - sweet
2. *āmla* - sour
3. *lavaṇa* - salty
4. *kaṭuka* - bitter
5. *tikta* - pungent
6. *kaṣāya* - astringent

IV. The odour is fourfold.

mild and strong smell of good and bad odour.

sugandhadurgandhayoḥ samaviśama-gandhatvāt

V. The tangibles are elevenfold:

Four gross elements, smoothness

(*ślakṣṇatva*), harshness (*karkaśatva*),

heaviness (*gurutva*), lightness

(*laghutva*), coldness (*śītam*)

hunger (*jighatsā*), thirst (*pipāsā*)

Notes

1. The concept of the *mahābhūtas* is discussed in detail in the Pāli commentaries - the *Dhammasaṃgaṇī*, the *Aṭṭhasālīnī* etc.
2. The Pāli commentaries discuss in detail why the elements of existence are called *mahā* (gross).
- 3.

4. For more explanation, see *The Buddhist Nirvāṇa* by Th. Stcherbatsky.
5. *Bhāṣya* on 1.44.
- 6.
7. 'What is Avijñaptirūpa' by Prof. V.V. Gokhale, In *New Indian Antiquary*, Vol. 1.

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09 Concept of Bhūta in Early Buddhist Philosophy

Mahesh Tiwary

Early Buddhist Philosophy, generally understood as *Abhidhamma* philosophy, is a well-integrated system of thought which accepts the existence of thirtyone world-systems, situated in vacuum in an ascending order. They are broadly divided in three main spheres, namely *kāma-dhātu*, *rūpa-dhātu*, and *arūpa-dhātu*. There are eleven world-systems in the *kāma-dhātu*, sixteen in *rūpa-dhātu*, and four in *arūpa-dhātu*, making the total number thirtyone. According to Buddhist thought, the beings of the *kāma-dhātu* and *rūpa-dhātu* are the psycho-physical manifestations and those of the *arūpa-dhātu* are in possession of the psychic personality alone.

The structural exposition of the beings has been made with two reals, namely, *nāma* and *rūpa*. The term *nāma* stands for the inner personality, expressing itself through the *citta* (consciousness) and *cetasika* (psychic factors). *Rūpa* refers to the physical personality, within and without, gross in nature and material in character with all its varieties of manifestations. The concept of *bhūtas* in *Abhidhamma* philosophy is thus closely related to the notion of *rūpa*, for it is the generic name for material elements.

Many insights have been thrown on both the *nāma* and *rūpa* in canonical (*Piṭaka*), non-canonical (*Aṅu-piṭaka*), commentarial (*Aṭṭhakathā*), sub-commentarial (*ṭīkā*) and miscellaneous (*Pakīna*) Pāli literature in general, and in all the seven texts of the *Abhidhamma-Piṭaka* in particular. The issue has further been taken up in the philosophical treatises, appearing as independent texts, commentaries and manuals like *Visuddhimagga*, *Aṭṭhasālinī*, *Sammoha-vinodini*, *Pañcapakaraṇa-Aṭṭhakathā*, *Abhidhammāvātāra*, *Abhidhammatthasaṅgaha*, *Nāmarūpa-pariccheda*, *Paramattha-vinicchaya* etc.

There is detailed discussion on the concept of *rūpa* in the second chapter of the *Dhammasaṅgani*, the first book of the *Abhidhamma-piṭaka*, in a catechetical way. The question has been raised such as - "What is that which is called *rūpa* in totality?"¹ The answer follows that "The four *mahābhūtas* (basic material elements) and the *upādā-rūpas* (generated material elements) constitute the *rūpa* in totality."

According to early Buddhist thought, *mahābhūtas* are four in number. They are: *paṭhavī-dhātu* (earth-element), *āpo-dhātu* (water-element), *tejo-dhātu* (fire element) and *vāyo-dhātu* (air-element). They form the basic material elements or the primary non-psychic Real (*paramattha*). The material creations related to beings, internal (*ajjhatika*) and external (*bahira*), and the surroundings all around them in both the spheres of *kāma-dhātu* and *rūpa-dhātu* are their creations and manifestations. They take variegated forms in the process of evolution and play a vital role in smooth functioning of the universal psycho-physical order. They are vital components in creation in the *kāma-dhātu* and *rūpa-dhātu*. It is for this reason that they are called *mahābhūta*.

Early Buddhist heritage attributes five basic reasons for referring to the basic material elements as *mahābhūtas*. These reasons, which also provide a broad understanding of the concept of *bhūtas* are enumerated as follows:

***Mahantapātubhāvato* (Manifestation of Greatness)**

They are called *mahābhūta* because of manifestation of greatness. It means they manifest with immense vastness with respect to phenomena 'grasped at' (*upādinnasantatī*) and to those of un-grasped at (*ana-upādinna-santatī*). In case of the former, they appear as the material forms, as the bodies of various kinds of beings like men, gods, demons, animals, birds, etc. In latter case, they appear into a world system, tremendously vast, traditionally calculated as 1203450 *yojanas* in circumference containing big waters, mountains (like Sineru, Isadhara, Karavīka, Sudassana, Nemidhara, Vinataka, Himavā etc.), as well as the grandeurous trees like *jambu*-tree in the Jambu-dīpa, *citta-pātalī*- tree (trumpet flower) in the kingdom of demon; *simbalī*-tree (silk-cotton) in the land of Garulas, *kadambas*-tree in Aparagoyāna, *<kappa*-tree in Uttarakura, and *sirisa*-tree (acacis) in *pubba-vidēha* and the *paricchattaka*-tree (coral) in the divine kingdom of Tāvati]msa etc.2

***Mahābhūta-sāmaññato* (Showing illusory Resemblances in Phenomena)**

They are called *mahābhūta* because of their appearance as illusory resemblances in variegated forms of deceitful manifestations. They are not in their being, possessing any colour but they manifest as blue, yellow, red, white, black etc. They are illusory objects appearing as real and continuing to develop the impression of being real, just like the juggler showing water which is not water, a gem, stone or gold which is not real. Marking their such illusory resemblances to the juggler's counterfeiting, they are called *mahābhūtas*.

They are again explained with the simile of ogresses. As ogresses seductively transform their external appearances, and hide their own terrible forms, so the *mahābhūtas* conceal their true nature and present an illusion to the people. This characteristic of concealing the true identity being a similar trait they share with ogresses, they are called *mahābhūtas*.

***Mahā-pariharato* (Immensity of their Maintenance)**

They are called *mahābhūta* because of immensity of their maintenance. It has its reference to the moment to moment generational changes in material structure of the beings due to fourfold food (*āhāra*) and factors like *kamma*, *citta*, *utu* and *āhāra*. Thus, it is said that - "these material forms, being daily maintained occur as essentials through abundance of food, covering etc., hence there is the name *mahābhūta*".

***Maha-vikārato* (Immensity of Metamorphoses)**

Again they are called *mahābhūta* because of the immensity of their metamorphoses. It refers to the tremendous changes undergone by the elements in material forms, both in derived and 'un-derived' phenomena. Of these, the vastness of changes in the 'underived' is manifested on the occasion of the destruction of the world-cycle. Similar changes are manifested with respect to 'derived ones', when there is the disturbance of the elements within.

At the time of the destruction of the world-cycle, all the four basic material elements become furious and manifest in their devastating forms. The Fire-element turns into blazing flames embracing the world system up to the *Brahmaloka*, consuming the entire phenomena and turning the universe as the heap of ash. The water-element, on such occasions, also take the form of over-whelming watery uproar and the world of ten myriad *koṭis* is made overpowered and reduced to nothing within it. Similar becomes the form of air-element which blows away the entire phenomena and reduce them to the dust particles.

Vast changes are brought when there is the disturbance of the element in the 'derived phenomena'. When there is disturbance in the earth-element, the bodies become stiff as if they enter the mouth of *kaṭṭhamuka*. Due to the disturbance in the water-element, the bodies go putrid and become rotten as if entered into the mouth of *pūtimukha*. The bodies become hot and turn into wax as entered in the mouth of *aggimukha* due to disturbance in the fire-element. Further, when there is the disturbance in the air-element, the bodies are turned into pieces as if they have entered the mouth of the *satthamukha*. Such mighty and devastating changes take place in the basic material elements with reference to 'underived' and 'derived' phenomena and as such they are called *mahā-bhūta*.³

***Mahanta-bhūtata* (Vast elementality)**

They are called *mahābhūta* because of their vast elementality. It means that they exist as very powerful force and do not come under the process of *dassana* or *bhāvanā* for their elimination. Mighty efforts are required to cope with them. Specially in *kāma-dhātu*, where there is the existence of a being, there is the existence of the *mahābhūtas*. One cannot have even the idea of the beings without them.

In this way, a set of five reasons are seen in the tradition to explain the name *mahābhūta*.

Depending on these four basic material elements, there arise the *upādā-rūpa*. *Upādā* means generated, derived, dependent etc. The material elements which come into being depending upon the four *mahābhūtas* are called *upādā-rūpa*. This may be understood with the simile of the earth and tree. Like the earth are the *mahābhūtas*, and the *upādā-rūpas* are just like trees which spring therefrom. It is for this reason they are called 'derived material elements'. They have been stated to be twenty-three in earlier texts. Later on, their number becomes twenty-four with the inclusion of the *hadaya-vatthu*.

A number of attributes have been introduced to unfold the intrinsic nature of the material elements as a whole. Firstly, they are unconscious. They are neither the consciousness (*citta*) nor the psychic factors (*cetasikā*), nor the roots (*hetu*). They are devoid of both the moral (*kusala-hetu*) and immoral (*akusala-hetu*) roots. They are *abyākata*, neither moral or immoral in character. They come into being depending upon some causes of conditions (*sapaccaya*), and stand as composite (*sankhata*), made of other elements. Thus, they themselves are not the defiling forces but become the object of pollution (*sāsava*). They are knowable by the six types of consciousness, namely, eye-consciousness (*cakhu-viññāṇa*), ear-consciousness (*sata-viññāṇa*), nose-consciousness (*ghāna-viññāṇa*), tongue-consciousness (*jihvā-viññāṇa*), body-consciousness (*kāya-viññāṇa*) and Mind-consciousness (*mano-viññāṇa*). They, by nature, are impermanent (*anicca*) and subject of destruction (*jarābhibhūta*).

The material elements are grasped in the form of **Qualities** or the **Qualitative energies**. A piece of stone in our hand is heavy, hard, rough, brown and of triangular shape. Apart from these qualities like - heaviness, hardness, roughness, brownness and triangularness, there is nothing like stone. Analysis of other similar material object also reveal the same truth. In this background the term *rūpa* may correctly be rendered into English as Material qualities and not the matter or material elements.

Reaching this stage, it seems desirable to append a brief note on each of the twenty-eight types of material qualities. For the sake of their easy communication, they are studied under eleven heads in later Abhidhammic texts. The same is being followed here too.⁴

Bhūta-rūpa

They are the *paṭhavi-dhātu* (earth-element), *āpo-dhātu* (water element), *tejo-dhātu* (fire-element) and *vāyo-dhātu* (air-element).

PAṬHAVI-DHĀTU

The term *paṭhavi* is derived from the root *puttha* which means 'to expand' to 'extend', to 'grant support' etc. *Dhātu* means that which bears its own characteristic marks - (*attano sabhāva]m dhāretiti dhātu*). Thus the literal as well as nearer meaning of the term is - "the element of Extension".

Intrinsically, the earth-element is that - "which is hard (*kakkhala]m*), rough (*khara-gata]m*), hardness (*kakkhalatta]m*), rigidity (*kakkhal abhāvo*) both internal and external.

It has the characteristic of hardness; its function is to become the base of co-existing elements; and receiving them is its manifestation. In this way, it is understood by touch, appearing as a tangible object of the body-sense-organ (*kāya*). It provides base for the existence of co-existing material elements and it is due to that are received as such and such. The various objects occupy space for existence due to presence of this element. Finally, it is the material energy of extension, manifesting as amalgam of a number of qualities.

ĀPO-DHĀTU

The derivation of the term *āpo* is traced from the root *apa*, which means 'to arrive' or from *paya* means to grow, to increase, to hold, to bind together etc. In this sense, it is called 'the element of cohesion'. It makes the different material particles cohere and prevents them from being scattered. It acts as a binding force of the material elements. The *Dhammasangani* explains it as fluid (*āpo*) belonging to fluid (*āpogata]m*), viscid (*sineho*) belonging to what is viscid (*sinehagata]m*) and the cohesiveness of matter (*bandhanatta]m rūpassā*). It is further analysed in the commentary as - "the water-element has trickling as its characteristic (*paggharaṇa-lakkhaṇa*), breeding of co-existing states as function (*brūhaṇa-rasā*) and gathering them together as manifestation (*saṅgahapaccupaṭṭhāna*). In short, it is a material energy which manifest in binding the things together. The formations of any kind is possible by its association.

TEJO-DHĀTU

It is generally rendered as the element of heat or 'Fire element'. Literally, it is derived from the root *tija* which means to sharpen, to 'mature'. From it, vivacity and maturity are understood due to its presence. In reality it is the 'heat' itself or the material energy of heat or **Fruition**. Or it may be said that the fire-element is that which is flame (*tejo*) belonging to flame (*tejogata]m*), heat (*usmā*) belonging to heat (*usmagata]m*) hot (*usuma]m*), belonging to what is hot (*usumagata]m*).

Further, the fire-element has the characteristic of heat, maturing as function, and the gift of softening of co-existing states as manifestation. Both heat and cold are its properties. It means the intense *tejo* is heat and the mild *tejo* is cold. It helps the maturity and fruition of the things within and without.

VĀYO-DHĀTU

It is understood as the air-element or the element of motion. The word *vāyo* is formed from the root *vāya* which means to move, to vibrate. In this word, it is understood as motion, vibration, oscillation and pressure. It is a material energy to keep the things in a particular position by generating pressure all around.

It is defined as the air (*vāya*), that which belongs to air (*vāyogatajm*), fluctuation; and the inflation of form (*thambhitatta]m rūpassa*). Its characteristic is strengthening (*vitthambana*), impelling as function (*samudīraṇa*) and bringing near and over as manifestations (*abhinihāra*).⁵ The things get motion because of its presence. It is the universal carrier of the subtle material elements.

These four basic material elements are studied separately simply for the sake of understanding. Really speaking they are inseparable. One cannot identify and exhibit in individually as earth, water, fire and air. They exist depending upon each other by the force created by the relation known as *Aññamaññapaccaya*. They serve as the originating ground of the generated material qualities.

Pasāda-rūpa

It is the name of sensitive material qualities, generated by the four basic material elements. It refers to the five sense-organs, namely; *Cakkhu* (eye), *Sota* (ear), *Ghāṇa* (nose), *Jivhā* (tongue) and *Kāya* (body). Each one of them is a sensitive material quality, functioning as reflecting the object which appear in their respective ranges (*apātha*). They also serve as the base (*vatthu*) of the five *viññāṇas*.

It should be clarified here the five sense-organs, as referred to above, do not signify the perceptible organs. They refer to the sensitive part of each of them. It means that each sense-organ should be understood in its two forms; the perceptible form (*Sasambhāra-rūpa*) and sensitive form (*pasāda-rūpa*). The external form is the manifested mode of appearance (*santthāna*) and within it, there is the sensitive part, known as the *Pasāda-rūpa*. Such *Pasāda-rūpa* are the six senses.

For instance, the perceptible eye-ball, eye-brow, etc. are not the eye but the sensitive part which is within, in the centre of the retina, which enables one to see the visible objects, is the *cakkhu-pasāda*, the real eye. It is a type of sensitive material energy which has the capacity of reflecting the object, may meaningfully be called *Dassana-samatthatā*. Similarly the ear is the *sota-pasāda*, having potentiality to hear the audible objects (*savana-samatthatā*); nose is the *ghāṇa-pasāda*, to smell the odorous objects; (*ghāyana-samatthatā*); tongue is the *jivhā-pasāda* to relish the sapid objects (*sāyana-samatthatā*), and the body is the *kāya-pasāda* to touch the tangible objects (*phusana-samatthatā*). Each of them serves as the base of respective consciousness (*viññāṇa*) in maintaining the **thought-processes** (*citta-vīthi*) at different doors.

Gocara-Rūpa

Literally, the word *gocara* means a place where there is the smooth way-faring of the senses. Technically, it stands for the object. The material qualities which function as the object of the senses are called *Gocara-rūpa*. They are four in number namely; *Rūpa* (visible object), *Sadda* (audible object), *Gandha* (odorous object) and *Rasa* (sapid object). The object of *Kāya* (*phatabha*) has been included in *paṭhavī*, *tejo* and *vāyo* and, therefore, with a view to avoid duplications, not included here in the present context:

- (a) *Rūpa*, the object of the eye, stands for the colour and shape. It manifests as red, blue, white, black, etc. in colour, and triangular, rectangular, square, circular etc. in shape. It is visible (*sannidassana*) and impinging (*sapaṭigha*).
- (b) *Sadda* means sound. The sounds of the drum (*bheri-sadda*), conches (*saṅkha*), song (*gīta*), cymbals, clapping hands, of the people, of the non-human beings, of splitting bamboos, tearing of the clothes etc. are included here. Each of them is audible and impinging (*sapaṭigha*).
- (c) *Gandha* refers to odour. It includes the odours of roots, barks, vegetables, fish, shell fish, stale butter, flowers, fruits etc. It appears as desirable smell (*sugandha*) or undesirable smell (*dugandha*). All the odours have the characteristic of striking the sense of smell.
- (d) *Rasa* is the taste. It includes all the various types of tastes like sour, sweet, bitter, pungent, alkaline, acid etc. They have the characteristics of striking the tongue.

Bhāva-rūpa

It expresses the sense of the material qualities of sex. It is of two types, namely; femininity (*itthindriya*) and masculinity (*purisindriya*). It is due to these two types of material qualities, the distinction between the physical structure of a male and that of a female is marked. With the presence of *itthindriya*, there is a different type of development in the body of a woman. She is markedly different from a man in respect of her appearance, occupation, deportment and other feminine conditions. She is in possession of different types of physical properties which distinguish her from those of a man. It is not the object of visual cognition alone but can be understood by mind-cognition also. It has the characteristic of knowing the state of a woman, the function of showing 'this is woman', and the manifestation is the cause of femininity in feature, mark, occupation as well as deportment.

Again the *purisindriya* (masculinity) is a material quality due to which there is a different type of physical development of the body of a man. In generic sense, masculine features, mark, occupation, deportment etc. should be understood as the opposite of the feminine. The shape of the hands, feet, neck, breast etc. of a man is unlike the shape of those of a woman. It is also not the object of mere vision. It can be understood through mind alone. Expressing the state of a man, is its characteristic, and showing 'this is a man' is its function. Its manifestation is the cause of masculinity in features, mark, occupation, deportment etc.

Hadaya-rūpa

It is the name of the base of consciousness, technically called *hadaya-vatthu*. Like the base of functioning of other senses, the base of mind has also been indicated through it. It is said that at the time of *Paṭisandhi* (birth) of a human being, the *viññāṇa* enters into the womb of a mother. Simultaneously, there is the appearance of the *hadaya-vatthu* as a material base, on which the conscious stream rests. It is very small in size, perhaps, the subtlest particle of material qualities.

Jīvita-rūpa

It is the name of vitality or the life-force of material qualities, *Jīvitindriya* by its name. A material form remains sound, compact, solid etc., due to its presence. A thing becomes old because of relative loss of *jīvitindriya*. The body of a man receives expressions like young, adult, old, extremely broken due to relative appearance

and disappearance of this force. Here the term *jīvita* is qualified by *indriya* because it exercises dominating influence over other co-existing material qualities in vivifying them from the moment of *patisandhi*.

Ahāra-rūpa

It literally means the food material qualities. In technical sense, it refers to the nourishing quality or the nutritive essence which sustains the body. In generic sense, it is the name of the *Kabalīkāra-āhāra* or the gross food that one takes morsel by morsel. They are the rice (*odana*), curry (*kummāsa*), fish (*maccha*), meat (*mansa*), gram powder (*sattu*) etc.

Pariccheda-rūpa

It is the name of *Ākāsa-dhātu* or space-material quality. Here it should be understood that *āvāsa* has been included in the *mahābhūtas* in some of the systems of Indian philosophy. They are commonly known as *pañca mahābhūta*. In the Buddhist system, it is a generated material quality, basically dependent on the four *mahābhūtas*. The reason is obvious that it has relative existence.

Ākāsa means space which provides place for existence of other material qualities. Thus the space-element is that which is not 'scratched', 'not scratched off', not possible to break or cut. At the same time, it takes shape according to the existence of the material qualities. It has the characteristic of delimiting material objects. Its function is the showing of their boundaries and the manifestation is marked as showing their limits.

Viññatti-rūpa

It is the name of intimating material qualities. It is through this medium that an idea is intimated, conveyed and understood by others. It is done by actions and speech. Accordingly, the intimation through the physical actions is *kāya-viññatti* and that through the speech is *vacī-viññatti*. To be more clear, it may be said that each physical as well as the vocal action has the peculiarity of its own, and such peculiarity, distinguishes one action from the other. For instance, sitting has its own peculiarity due to which it is sitting and it is not understood, as standing, running, etc. Similarly, standing, running, lying down have their own peculiarities existing with each of them and due to which one is distinguished from the other. Such peculiarities, associated with physical actions are collectively called *kāya-viññatti* or physical intimation. As regards the vocal actions, it is marked in day-to-day life, like teaching, singing, rebuking, crying etc. which are distinct from one another. These distinct actions associated with vocal action are *vācī-viññatti*. Thus it may be stated that the "intimating material quality is that due to which an idea related to a particular action is rightly communicated and understood by others with full background of awareness of various types of physical and vocal actions".

Vikāra-rūpa

It means the material qualities of changing modes in material elements. They are of three types, namely; lightness (*lahutā*), mildness (*mudutā*) and adaptability (*kammaññatā*) associated with material qualities. On experiential base, the lightness existing with the physical body is *lahutā*, mildness existing with it is *mudutā*,

and the adaptability of the body towards the action in the moment is *kammaññatā*. In absence of *lahutā*, one feels heaviness in discharging the physical performances. In absence of *mudutā* there is disinterestedness and in the state of non-presence of *kammaññatā*, there is no lively leaning towards the activities to be performed in a particular unit of time. The three material qualities are experienced with body within and also may be understood with reference to the material surroundings.

Lakkhana-rūpa

It is material quality or rather the natural characteristics of material elements in general, manifesting in four ways as *upacaya* (coming into being), *santati* (continuity), *jaratā* (decay) and *aniccatā* (destruction). It is seen that a thing comes to exist, it continues, gradually starts growing old and in the end suffers destruction. A seed comes to be a sprout, continues to exist as a plant, gradually starts decaying and in one fine moment turns into the dust particles. The coming into being, existing, decaying and finally destroying are the natural characteristics of things existing within and without. Because of their such a nature, they are called *lakkhana-rūpa*.

In this way, the four *mahābhūtas* and the twenty-four types of the *upādā-rūpas* have briefly been presented. Collectively they are called *rūpa* or the *bhūta* in early Buddhist tradition.

The Buddhist philosophy does not believe in a **Creating Agency** as the first in the beginning of creation. It proceeds with the statement that the beginning of the *sansāra* is not known. It is not known whether it started during the reign of such and such a king, in the *sāsana* of such and such a Buddha - *anamataggo, aya]m saṃsāro, purimākoṭi assa na paññāyati*. Nevertheless the processes of *sansāra* is an ongoing one. If it is so, then there should be some **Law** governing it. As answer to this, it may be said that there is **Law of Dependent Origination** (*Paticca-samuppāda*) taking care of the systematic revolving of the *Sa]msāra* with the help of twelve links, known as *nidānas*. The coming into existence of *nāma* and *rūpa* has meaningfully been illustrated therein.

In the process of explaining the generation of the material elements, a set of four factors are systematically at work. They are *kamma*, *citta*, *utu* and *āhāra*.

The first factor is *kamma*. It refers to the resultants of the moral and immoral actions done in the past. Here the action should be understood in the sense of consciousness. There are the twenty-five types of consciousness of the *kāmāvacāra* and *rūpāvacāra* spheres. They are the twelve types of *kamavacara* - immoral consciousness, eight types of *kāmāvacāra* - moral consciousness and five types of *rūpāvacāra* - moral consciousness. They arise in different units of time in our practical life and we express as performance of moral and immoral actions. These twenty-five types of consciousness yield their resultants. Such resultants are technically called *kamma*. It has its bearing in generating the material elements. The process of generation starts from the moment of the beginning of life known as *paṭisandhi*.

The second factor is *citta* or consciousness. It refers to the seventy-five types of consciousness as - *kāmāvacāra-akusala-citta* (12), *ahetuka-citta* (8), *kāmāvacara-sahehana-citta* (24), *rūpāvacāra-sobhana-citta* (15), *arūpāvacāra-sobhana citta* (8), *lokuttara-sobhana-citta* (8). They start generating material elements from the moment of beginning of the life process of the life of the being. The moment of starting the process is called *bhavaṅga*.

Utu is the third generating factor. It means weather. It manifests as hot or cold - and effects the material elements accordingly. Its heating or cooling effect starts from the moment the being comes into existence and being experienced accordingly in the process of life.

The fourth factor in this context is *āhāra*. The literal meaning of the term is food. In a generic sense, it refers to the food taken by one in morsels. But it also signifies of the nutritive quality of food. It has its effect on the body, internally and externally, from the moment one starts taking food.

Those four factors are the four types of generating forces acting continuously with the life of beings as well as with the things associated with the life-process remaining within or without. They function individually or in association. Some material elements are generated by one particular factor and some are generated with their collective efforts. It may be illustrated firstly as which types of material elements are generated by which types of generating forces and secondly as which type of generating factor individually or collectively generates which types of material elements.

In the former case, it is stated as below:

- (a) The eight types of *indriya-rūpas* and the *hadaya-vatthu* are directly generated by *kamma*. Here the five types of sensitive material elements (*cakkhu*, *sota*, *ghāna*, *jīhvā*, and *kāyā*), the two types of sex material elements (*itthindriya* and *purisindriya*) and one type of life-force material element (*jīvitindriya*) are the eight *indriya-rūpas*, while *hadaya-vatthu* is the seat of consciousness. These nine material elements are the products of the *kamma* as an individual force. It also functions in association with other forces and produce nine more material elements. They are the eight types of inseparable material elements (*abbinbhoga-rūpa*) and one space-material elements (*ākāsa-dhātu*). *Paṭhavi*, *apo*, *tejo*, *vāyo*, *yaṇṇa*, *gandha*, *rasa*, and *oja* are always available as one inseparable unit and, therefore, they are called 'Inseparable material element'. These nine are the collective products.
- (b) The two type of *viññatti-rūpas*, namely, *kāya-viññatti* (physical intimation) and *vacī-viññatti* (vocal intimation) are produced by *citta* (consciousness).
- (c) *Sadda* (sound) is produced by the joint effort of *citta* and *utu*.
- (d) The three material elements, namely, *lahutā*, *mudutā* and *kammaññatā* are produced by the three factors, namely, *citta*, *utu* and *āhāra*.
- (e) The eight types of *abbinbhoga-rūpas* and *ākāsa-dhātus* are produced by the combined efforts of all the four factors: *kamma*, *citta*, *utu* and *āhāra*.
- (f) The four types of *lakkhaṇa-rūpas*, namely, *upasaya*, *santati*, *jaratā* and *aniccatā* are not produced by any factors. The reason is obvious that they are the nature of material elements.

In this way, the twenty-eight types of material elements are produced by the four generating factors.

Further, analysing the generation of material elements as stated above, the role of each generating factor may be illustrated as below:

- (i) *Kamma* generates nine material elements individually and nine in association with the other factors. It makes a total of eighteen material elements which are understood as *kamma*-products.
- (ii) *Citta* generates two material elements individually and thirteen in association with others. In this way, there are fifteen material elements which are regarded as *citta*-products.
- (iii) *Utu* has no independent generation of material elements. It functions in association with others and generates thirteen material elements. They are the *utu*-products.

- (iv) Āhāra has also its collective but important role in generating the material elements which are thirteen in number. It is in this way, that the four generating factors are seen at work in producing the natural elements in the process of existence in the fluxional nature of existence.⁶

Coming to this stage, now, it seems desirable to state how the different material elements come to be in the process of life and how they disappear when the life-continuum comes to an end in the present state.

The first moment in the present state of existence is called *paṭisandhi*. It is rather the rising of a *paṭisandhi-citta* or the birth consciousness. From the moment of its existence there starts the function of *kamma*, and with this, *kammaja-rūpas* appear.

The second moment in this process is called *bhavaṅga*. It is also the rising of a consciousness which functions as preparing a base of the present state of existence with the accumulation of the resultants of all the past activities done by a particular being. With the rising of this consciousness there starts the generation of material elements by the *citta*.

Gradually the being has its initial physio-psychic amalgam which in common parlance is stated as "coming into existence". From this moment there is the generation of material elements produced by *utu*.

Further, *āhāraja-rūpas* start coming into being from the moment one starts taking food and it is assimilated. The process continues till the being exists.

There is also a process of degeneration or disappearance of the material elements when the life-process has a state of conventional cessation which we name **death**. It is the rising of a *cuti-citta* or death consciousness. From the moment of its rising the process of the material elements produced by *kamma* has a stop. Thereafter, there is the cutting off between the *cittaja* and *āhāraja-rūpas*. The *utuja-rūpas*, in some form or other, continues till the dead body exists. With gradual disappearance of the dead body they also disappear.

Notes

1. katama]m sabbam rūpa]m iti? cattāro ca mahābhūtā, catunnam ca mahābhūtānam upādāya rūpa]m, ida]m vuccati sabba]m rūpam.

- D.S., 147.

2. pāṭalī-simbali-jambu, devāna]m pāricchattako.
kadambo kapparukkhoca, sirisena bhavati sattamo.

- A.S., 242.

3. bhūmi to vitthitā yāva, brahma-lokā vidhavati,
acci, accimato loke, dayhamanamhi tejaso.
kotisatsahassekam, cakkhvala]m vityeuti,
kupitena yadā loko, salilena vinassati.
koṭṭisatasahassekam, cakkavala]m vikirati,
vāyodhātuppakopena, yadāloko vinassati.

patthaddho bhavati kāyo, daṭṭho kaṭṭhamukhene va,
paṭṭhavidhatukopena, hoti kaṭṭhamukhe va so.
putiko bhavati kāyo, daṭṭho putimukhene vā,

apodhātuppakopena, hoti putimukhe va so.
santatto bhavati kāyo. dattho aggimukhena vā.
tejo-dhātuppakopena, hoti aggimukhe va so.
sanchinnobhavati kāyo, dattho saṭṭhamukhena vā.
vāyo-dhatuppakopena, hoti satthamukhe vaso.

- A.S., 243

4. bhūtappasādavisayā, bhāvo hadayamiccapi,
jīvitahārarūpehi, aṭṭhārasavidha]m tathā,
paricchedo ca viññatti, vikāro lakhaṇamti ca,
anipphanna desa cuti, aṭṭhavisā vidham bhava.

- A. San., 286.

5. D.S., 256; A.S., 267.

6. atthāvasa pannarasa, terasa dvadasāti ca,
kammacittotukāharā]m honti yathakkama]m.

- A. San., 174.

10 The Concept of Great Elements in Jain Cosmology

Mangala Mirasdar

All philosophical systems aim at a quest for Supreme Truth or Reality, based upon the concept of Universe. All of them try to explain the creation and existence of the Universe from their own points of view.

According to Umāswāti, the author of the renowned Jain philosophical text *Tattvārthādhigama-sūtra*, the definition of Reality is *sat*, i.e., existence. He uses the word *dravya* or substance for Reality. In the process of the creation of the world, various philosophies mention the role of the well-known five great elements viz. *prthivī*, *ap*, *tejas*, *vāyu* and *ākāśa*. Jain philosophy also mentions these elements but in different contexts. The first four, except *ākāśa* are included by them in the *pudgala dravya*. *Ākāśa* is considered to be a different *dravya* in Jain thought. To point out this difference of substances from the five great elements in other systems, it is necessary to see in brief the *JSaḍdravyas* in Jainism. Jain system has divided the universe in two main categories, *jīva* and *ajīva*, which comprise of six substances (*dravyas*). This *ajīva* category is a positive variety standing opposed to *jīva*. It is not merely of the form of negation. *Ajīva* consists of five substances - *ākāśa* (space); *dharmā*, i.e., medium of motion; *adharma* (medium of rest), *kāla* (Time) and *pudgala* (matter). Excluding *kāla*, all other substances are of the nature of *astikāyas*. *Astikāya* means a combination or collection of areas or aspects. Because they exist, they are called *asti* and because they have many *pradeśas* like bodies, they are called *kāyas*. These *astikāyas* or extensive substances are *jīvāstikāya*, *ākāśāstikāya*, *dharmāstikāya*, *adharmaastikāya* and *pudgalāstikāya*. *Jīva* also is called *astikāya* because, according to Jainism each *jīva* has innumerable *pradeśas*. By contraction and expansion of its *pradeśas*, the *jīva* occupies different proportions. It is just like the flame of a lamp whose light can fill a small room as well a big hall.¹ So a *jīva* can occupy a smallest body of a bacterium or the biggest body of a great fish.

These five fundamental substances in the form of five *astikāyas* are eternal (*nityā*); immutable (*avasthita*) and devoid of form (*arūpin*). They are not externally created, but are evident by their own nature.

The *pudgalas* are possessed of *rūpa*. The properties are capable of being grasped through the sense-organs. So they are *mūrta* or *rūpin*. Though the atoms on account of being supra-sensuous, are not grasped through the sense-organs, but under some specific transformation they do develop the capacity to be grasped through the sense-organs. Generally it is defined that *ajīva* is that which has no consciousness, but which can be touched, tasted, seen and smelt; but according to Jainism, these four characteristics belong to *pudgala* or matter which can be touched, tasted, seen and smelt because matter has gross forms. It shows that the scope of the *ajīva* category of Jainism comprises not only *pudgala* or matter but something more, that is, *dharmā*, *adharma*, *ākāśa* and *kāla*.

According to the Jain system, *ākāśa* is not included among the well-known five great elements, i.e., *prthivī*, *ap*, *tejas*, *vāyu* and *ākāśa*. *Ākāśa* is a substance which allows *dharmā*, *adharma*, *kāla*, *pudgala* and *jīva* to remain within itself and which allows them to enter itself. It means that *ākāśa* acts as a support for the remaining substances which act as occupants. It is self-supporting. The Jain concept of space is unique in its originality, for it holds space as positional quality of the world of material objects and space as the container of material objects and other substances.

The seed of the Jain concept of space is embodied in the Jain *āgamas* like the *Bhagavati Sūtra* etc. In the post-*āgama* age, Umāswatī had sown the seed of its metaphysical aspects on the basis of its *āgamic* conception. The Jain thinkers retained the substantial existence of space as conceived by the *Nyāya Vaiśeṣikas*;² but they had discarded the elemental concept of space of the *Sāṃkhya*s. *Sāṃkhya*s in their *Prakṛtivāda*, i.e., the doctrine of the fundamental cause of the material universe, mention *ākāśa* as produced from *tanmātras*. It is also stated to have originated out of the Mass or Inertia (*tamas*) in the *Prakṛti* as a result of its transformation, when the original equilibrium comes to an end. So in *Sāṃkhya*, *ākāśa* is *janyapadārtha* of an evolved entity or element; but not an independent absolute substance. The *Nyāya-Vaiśeṣikas* conceive *ākāśa* as one of the categories of *dravya* and the fundamental principle of creation. The *Vedāntin* also maintains the view that *ākāśa* is *Brahman* as the characteristic marks are mentioned.³ As all the prominent characteristics of *Brahman* are ascribed to *ākāśa* it cannot be the ethereal *ākāśa* but *Brahman*. But according to Jainism, in the purest form, this objectively real entity *ākāśa* does one function only, i.e., to accommodate other substances of the universe. The function of the other *dravyas* is to attain room and the function of the space is to give room to them.⁴ The aphorism in *Tattvārthadhigamasūtra (lokākāśe avagāhah)* (V.12) implies the division of space into *lokākāśa* and *alokākāśa*. The five fundamental substances are accommodated in *lokākāśa*. So the differentiation of space is to accommodate other substances.

Another substance *pudgalāstikāya*, goes under the *ajīva* category. This term *pudgala* is used in Buddhist literature also, but there it is used in the sense of soul. In Jainism *jīva* and *pudgala* are totally different categories. *Pudgala* generally means Matter. It has two parts *pud* and *gala*. The first part means 'to combine' and second part *gala* means 'to dissociate'. So the etymological meaning of *pudgala* is that substance which undergoes modifications by combination and dissolutions. The definition is significant because this process of combination and dissolution does not occur in other substances.

Pudgala is of two types - *aṇu* and *skandha* or atoms and aggregates or molecules. An indivisible material particle is called atom. It is the smallest possible form of *pudgala*. *Skandha* means an aggregate or something tied together. It is significant that each and every atom possesses touch, taste, smell and colour and is potentially capable of forming earth, water, fire and air. These are no distinct and different kinds of atoms of earth etc., i.e., the atoms are ultimately not different. For example, airy atoms can be converted into water, watery atoms can be converted into fire and so on. Ultimately all the atoms belong to one and the same class of *pudgala*. Sometimes they form earth, sometimes they form water and so on. Thus according to Jainism, earth, water, fire and air are not ultimately separate and independent entities but only different forms of *pudgala*. There are no qualitative difference among them. The school of *Nyāya-Vaiśeṣika* does not agree to this view of Jain as seen before that regards earth, water, fire and air as absolutely different and independent substances and so their atoms are also ultimately distinct and different.

The function of *pudgala* is to form the basis of the body and organs of speech, mind and respiration. Pleasure, pain, life, death also are the benefits due to *pudgala*.

Though we call *pudgala* as synonymous with matter, *pudgala* is not pure matter untouched from consciousness like the insentient matter of the *Sāṃkhya*. The *pudgala skandha* has also an element of consciousness. The *jīva* and *ajīva* categories of Jainism are not empirical abstractions of consciousness and non-consciousness. In the following characteristics of the conception of the gross elements in Jainism this point will be very clear.

The gross elements excluding *ākāśa* are included in *pudgala*. It is interesting to know that unlike the gross elements in *Sāṃkhya* and *Vedānta*, the gross elements contained in *pudgala* are not totally insentient. But they are sentient as well as insentient also. Among the twofold classification

of *jīvas* as *trasa* and *sthāvara* the *sthāvara jīvas* are of five kinds - *ṛthivīkāya*, *apkāya*, *tejaskāya*, *vāyukāya* and *vanaspatikāya*. Thus *jīvas* whose body consists of *ṛthivī* is called *ṛthivīkāya*, the *jīva* whose body consists of *ap* is called *āpkāya*. These are sentient and non-sentient. Earth is the body of the sentient being as well as sentient body itself. These are elemental souls, which live and die and are born again in the same or other elemental bodies. Their sentient part increases. To explain further, a metallic stone drawn from the mine in its natural condition is sentient but as soon as we make some chemical reaction on it, it becomes non-sentient. Earth which has not suffered the blow of friction is sentient, but once there is friction it becomes insentient. In a similar way, the water which is flowing through a river is sentient but as soon as water is boiled it becomes non-sentient. All these are *ekendriya jīvas* or *jīvas* having only one sense. In the case of *vanaspatikāya*, the plants are the *jīvas* of one sense. Each plant may be the body of one soul or may possess a multitude of embodied souls. Thus, the doctrine of the gross elements having the sentient and non-sentient aspects, and the theory that there are souls even in inorganic objects like metals, stones, water, etc. are special features of the Jain system of thought.

According to the *Vaiśeṣika* system air or *vāyu* contains only the quality of touch. The other qualities colour, taste and smell are absent in air, but according to Jainism, colour, taste, touch and smell are found invariably together and therefore whenever there is touch, form, taste and smell will necessarily be there. This Jain theory is validated by the modern science, according to which air can be converted into bluish liquid by continuous cooling, as steam can be converted into water, and the liquid contains all the four qualities of touch, colour, taste and smell. So the gross elements excluding *ākāśa* possess not only the specific qualities but, as these elements are included in *puḍgala*, all the qualities of *puḍgala* as touch, form, taste and smell are present in each element.

These six *dravyas* together are called universe. In their original state, they are stable and firm but on account of their mutual relation, new things emerge and old things perish. The working of universe is nothing but the substances experiencing the power of production, destruction, duration and transformation in respect of their forms and status. According to *Vedānta* and the *Nyāya-Vaiśeṣika* system, *sattā* is absolutely permanent having no change whatsoever. But the Jain philosopher Umāswāti decrees that "the thing which is characterized by origination, destruction and permanence is 'real'".⁵ During the period of taking new forms and leaving old ones, the substance does not leave its essence. In both origination and decay, it remains as it is. This immutable nature is called permanence. For example, a thing, say clay, assumes various shapes and under-goes diverse changes such as jug, pan etc. As illustrated by *Chāndogya Upaniṣad*,

vācārambhaṇaṃ vikaro nāmadheyam ṛttiketyeva satyam A

the unchangeable substance, i.e., clay alone is true and the changing forms are more illustrations of senses or mere objects of names. But Jainas do not suppose that substances alone are true and the qualities are false and illusory appearances. They argue, that in actual experience in all changes there are three processes: (1) some qualities remain unchanged, (2) some new qualities are generated, (3) some old qualities are destroyed. For example, when a jug is made, the lump-clay is destroyed, the jug is generated and the clay is permanent. Due to these unchanged qualities a thing is said to be permanent though it undergoes change. When a lump of gold is turned into a rod or a ring, all the specific qualities which connote the word 'gold' are seen to continue, though the forms are successively changed and with each change some of its qualities are lost and some new ones are acquired.

Due to the interaction of the six *dravyas*, new things emerge and old things perish. Through the interaction of soul and matter, the Universe rolls. Matter is the cause of making bodies. It forms the physical basis for the body, speech, mind, respiration of the worldly souls. When the worldly career of the beings is over, they give

up the gross body and accompany the subtle body and again receive physical particles appropriate for the gross body in the next birth.

In short, the Jain system refuses to attribute either absolute permanence or absolute transience to anything, but treats everything as either permanent or transitory. This system retains the elemental nature of the gross elements to some extent but at the same time it gives its own interpretation to the term *ākāśa*.

Notes

1. *Tattvā*, V.16 -
2. *Vaiśeṣika Sūtra*, I.15 -
3. *Br., Sū.* I.1.22 -
4. *Tattvā*. -

5. *Tattvārthādhigama Sūtra*, -

11 Mahābhūtas in Jyotiṣa Śāstra

S. D. Sharma

Ancient sages had insight into the cosmogonical and cosmological aspects of the universe. Through the advanced stages of thought experimentations (*Yogic pratyakṣa* as you may call these) they inferred the existence of subtle stages of matter in the evolution process and correlated the same with the gross elements. They had a constant dialogue with nature and in this process they correlated the microcosm with the macrocosm. Interestingly, their inferences have many fundamental affinities with the insights of modern Astrophysicists.

In the cosmogonical evolution process from subtle stages of matter, the ancients arrived at the notion of *pañcamahābhūta* the gross elements, considered to be the building blocks of the macroworld around us. It may be pointed out that this categorization should not be confused with the present-day periodic table classification of elements. The former is the categorisation based on *indriyagrāhyatā* (faculty perceptibility) of materials in the world. Sir John Ballantyne in his *Nyāya Kaumudī* (Litho print 1885 AD) has confused the two categorisations and states:

bhūtānyupaṣaṣṭi saṅkhyāni

i.e., there are *bhūtas* about 60 in number. He is referring to Hydrogen, Helium, Oxygen, iron and other elements as *mahābhūtas*. Note that at the time of Prof. Ballantyne, there were only sixty elements known to scientists. Needless to say, this statement is erroneous, for *mahābhūtas* are not the same as basic elements of physics. It may be noted that *pañcamahābhūtas* of *Sāṃkhya* philosophy result as a consequence of *pañcīkaraṇa* process on *pañcatanmātras*, which are subtle stages in the evolution process and on the other hand are connected with the senses of perception. The concepts based on *mahābhūta* classification prevail all the branches of philosophy and religion, but *Āyurveda* has used these concepts for practical applications. *Jyotiṣa Śāstra* too being a discipline of experimental verifications must have used these concepts for developing the laws of nature and in understanding the cosmic genesis. *Jyotiṣa Śāstra* and *Āyurveda* have put the philosophical concepts on experimental verification tests. Here the attempt of this paper is to study the concept of *pañcamahābhūtas* in relation to *Jyotiṣa Śāstra*. What ideas were developed by ancient *Jyotiṣācāryas* regarding cosmogonical evolution? How far did their findings tally with those of philosophers, and to what extent they had advanced further through their observational verifications? This paper seeks to address these questions and explore possible answers.

Jyotiṣa Śāstra deals mainly with time and space. The former is not in the list of *pañcamahābhūtas*. But space is the *ākāśa* of the *mahābhūtas*. In fact in modern philosophy, time and space are so correlated that their unison is referred to as "space-time continuum". *Jyotiṣa Śāstra* takes into account *prthivī* (earth) and other elements. The *Prthivī* of *Jyotiṣa Śāstra* should not be confused with the *prthivī mahābhūta*, as the latter is the most generalised term to represent anything perceptible. Similar are the cases with other *mahābhūtas*. *Jyotiṣa Śāstra* talks of *mahābhautika* entities in the cosmos and these terms should not be confused with the general terms of *mahābhūtas* philosophy. The *bhautika* entities as individual units are studied in *Jyotiṣa Śāstra*. This *śāstra* discusses the properties of the *bhautika* entities like earth, planets, water, *tejas* bodies, stars, suns, etc. and goes to the maximum extent to explore the very nature of space.

Some aspects are dealt within *siddhānta Jyotiṣa* and some of them are studied under the heading of 'Astrology'. Any way in this exposition we should like to explore the references to the concepts of *mahābhūtas* in *Jyotiṣa* through the studies of *bhautika* entities without confusing the terminologies of the two disciplines. Here we have tried to survey the literature as far as possible in a chronological fashion, starting from *Vedāṅga Jyotiṣam* and up to the *Siddhāntika Jyotiṣa* traditions. As such in *Vedāṅga Jyotiṣam* of Lagadha, which is exclusively a text of *Jyotiṣa*, we do not find reference to *mahābhūtas* but earlier and later Vedic *vāṅgmaya* has important notions which paved the basis for cosmogony. So here we will deal first with the cosmogony and then having discussed the genesis and the evolution, will go over to the properties of *mahābhūtas* as inferred in *Jyotiṣa Śāstra* and then see if some universal laws have been formulated in *Jyotiṣa* tradition on the basis of philosophical grounds.

It may be remarked that in addition to cosmogony etc., *Jyotiṣa Śāstra* deals also with cosmography and cosmology, the sciences of form and age of the universe. Hindu, Jaina and Buddhist traditions discuss the geometrical models of the universe and the terrestrial earth, (ref. *Cosmography of Hindus, Buddhists and Jainas* by Nerifil). All these models are indicative of their philosophical notions. Even modern astrophysicists talk of cosmology models which are based on highly complex mathematical exercises. Concerning the age of universe, Jainas talk of very big cycles like *utsarpiṇi*, *apasarpiṇi*, *kāla* etc. The *Siddhānta Jyotiṣa* texts talk of big life spans of Brahmā, Viṣṇu, Maheśa and *Yuga* systems which are of much importance for astronomical computations. Here we do not discuss these in detail but will elaborate the more interesting philosophical ideas of the ancients regarding the cosmogonical process.

Cosmogony

The concepts about creation of the world, consisting of all stars, sun, planets and the animate and inanimate world, are found in the Vedic and later Sanskrit literature. The oldest strata of *Vedas* and allied literature have deep philosophical notions about cosmogony. In these very notions we find astronomical and astrophysical concepts of ancient sages. We discuss here few references from Vedic literature and then will come to *Jyotiṣa* texts later.

In *Ṛgveda* we find *Bhāvita Sūkta* describing all void in the world and darkness engulfing all around. The cosmos came into existence through *kāma* (desire) which was the primal seed or germ of the spirit. We will not give all details of the text material of the *Sūkta* but may point out that the notions as expounded in this *Sūkta* are quite similar to the ones put forward in modern cosmogonical hypotheses. An Astrophysicist from U.S.A compared the *Bhāvita Sūkta* notions with the origin of world out of the Black Hole state of the matter. The ancients seem to have arrived at these notions through yogic *pratyakṣa* which is just an advanced stage of thought experimentations, while the modern astrophysicists inferred somewhat similar, through analyses of observable data.

In *ṚV*, 10.190.1.3 we have the following hymns:

*ṛ tam ca satyam cābhīddhāt tapaso'dhyajāyata
tato rātryajāyata tataḥ samudro arṇavaḥ. (1)
samudrādarṇavādadhi sarivatsaro ajāyata
ahorātrāṇi vidadhāt viśvasya miśato vaśī.(2)
sūryā-candramasau dhātā yathā pūrvamakalpayat
divāñca pṛthivīñ cāntarikṣamatho svaḥ. (3)*

Truth and truthfulness were born from intense penance. Hence was darkness born hence the watery ocean. (1)

From the watery ocean was born the year ordaining days and nights the controller of every living moment. (2)

The creator then created in due order Sun, the Moon, the sky, the earth and the regions of the air and light. (3)

tasmādvā etasmādātmana ākāśaḥ sa=mbhūtaḥ, ākāśādvāyuḥ vāyoragniḥ agnerāpaḥ, adbhyaḥ pṛthivī, pṛthivyā ośadhayaḥ. ośadhībhyo' nnaṃ, annāt puruṣaḥ. (Tait. Up. Brahnavallī). (1)

Verily from this soul, space arose; from space arose air; from air fire; from fire, the waters; from waters, the earth; from earth vegetation; from vegetation, the food; and from food, the man.

There is one more from *RV*, describing creation of the Sun, Moon, *mahābhūtas*
candramā manaso jātas cakṣoḥ sūryo jāyata.

mukhādindras cāgniśca prāṇād vāyurajāyata. (13)

nābhyā āsīdantariḥsam śirṣṇo dyauḥsamavartata

padbhyā=m bhūmir dīśaḥ śrotrāt tathā lokamakalpayat. (14)

(*RV*, 10.190-13,14)

The moon was gendered from his mind and from his eyes the sun had birth; Indra and *agni* from his mouth were born and *Vāyu* from his breath. (13)

Forth from his navel came mid air, the Sky was fashioned from his feet and from his ear the regions. Thus they formed the worlds. (14)

Now we come to *jyotiṣa* texts and see what the later astronomers contemplated about cosmogony. The *Bhūgolādhyāya* of *Sūryasiddhānta* discusses the creation of the universe, including the earth, and the evolution of *pañcamahābhūtas*. The relevant text stanzas are the following:

*vāsudevaḥ param brahma, tanmūrṭiḥ puruṣaḥ paraḥ.
avyakto nirgunaḥ śāntaḥ pañcaviṃśāt paro'vyayaḥ. (1)*

*prakṛtyantargato devo bahirantas'ca sarvagaḥ.
saṅkarṣaṇo'paḥ sṛṣṭyādau tāsu vīryamavāsīrjat. (2)*

*tadaṅdamabhavad dhaimam sarvatra tamasāvṛtam
tatrāniruddhaḥ prathamam vyaktībhūtaḥ sanātanaḥ. (3)*

*hiranyagarbho bhagavāneṣacchandasi paṭhyate.
ādityo hyādibhūtatvāt prasūtyā sūrya ucyate. (4)*

*para=m jyotistamaḥ, pāre sūryo'ya=m savitēti ca.
paryeti bhuvanānyeṣa bhāvayan bhūta-bhāvanaḥ. (5)*

*prakāśātmā tamohantā mahānityeṣa vīrutaḥ.
rco'sya maṅḍalam sāmānyusrā mūrtiryajūṅṣi ca. (6)*

*trayīmayo'yaṃ bhagavān kālātmā kālākṛd-vibhuḥ.
sarvātmā sarvagaḥ sūkṣmaḥ sarvamasmin pratiṣṭhitam. (7)*

*rathe visvamaye cakra=m kṛtvā sa=mvatsarātmaka=m.
chandāṅśyaśvāḥ sapṭayuktāḥ paryaṭateṣa sarvadā. (8)*

*tripādamamṛtam guhyam pādo'ya=m prakāṭo'bhavat.
so 'hankāram jagatsṛṣṭyai brahmāṅamasīrjat prabhuḥ. (9)*

tasmai vedānvarāndattvā sarvalokapitāmahaṃ.

pratiṣṭhāpyāṇḍa-madhye'tha swaya=m paryeti bhāvayan. (10)

atha sṛṣṭyām manascakre brahmāhankāra-mūrtibhrt.

manasascandramā jajñe suryo'kṣṇostejasā=m nidhiḥ. (11)

manasaḥkha=m tato vāyuragnirāpo dharā kramāt.

gunaika-vṛddhyā pañcaiva mahābhūtani jajñire. (12)

agnīśomau bhānu-candrau tatastvaṅgārakādayaḥ.

tejo bhūkhāmbuvātebhyaḥ kramaśaḥ pañca jajñire. (13)

Parambrahma is Vāsudeva. His form is *parama puruṣa* who is *avyakta* (unmanifested), *nirguṇa* (devoid of *sattva*, *rajas* and *tamas*), *śānta* (undisturbed), *avyaya* (non-changing) and is beyond the twenty-five *tattvas* of *Sāṃkhya* philosophy. (1)

This internally and externally omnipresent *Deva* having entered the *Prakṛti* in the form of *Sanīkarṣaṇa* created waters and saw the seed (of the universe). (2)

This became a golden egg which was surrounded by darkness all around, out of the same, first appeared *sanātana*(everlasting) *aniruddha*. (3)

This is referred to as *hiranyagarbha* in *Vedas*. Having appeared first, it is called *āditya* which because of having created all the animate and inanimate world is referred to as *sūrya*. (4)

Being in the form of most intense light and because of having dispersed all the darkness it is referred to as *savitā*. This *bhūtabhāvāna*, i.e., the creator, preserver and destroyer of the whole world traverses the worlds dispersing the darkness. (5)

The same in the form of light, disperser of all darkness is known as *mahattattva*. His *maṇḍala* is *Ṛgveda*, *karṇa* is *Sāmaveda* and *mūrti* is *Yajurveda*. (6)

Thus this is *trayīmaya*, i.e., in the form of three *Vedas* and this is also in the form of 'Time' as this is the one who creates time and is omnipotent. He is the soul of all and is omnipresent. He is subtle and whole of the world rests in him. (7)

He always travels in the world-cart with the year wheel having *saptac chandas* as seven horses. (8)

His three *carāṇas* being immortal are obscure, i.e., they are beyond comprehension, only the fourth *carāṇa* is manifested. The same *Prabhu*, the omnipotent, created *Brahmā* in the form of *ahaṃkāra*, i.e., the *ahaṃtattva* of *Sāṃkhya* philosophy. (9)

Having handed over the desired *Vedas* to the Grand father of the world (the *Brahmā*) and having made him sit in the egg *aniruddha* travels illuminating the whole world. (10)

Brahmā in the form of *ahaṃtattva* first created *manas* and from *manas*, the moon appeared and from the eyes appeared the ocean of *tejas*, the 'Sun'. (11)

From *manas* appeared "*ākāśa*", from *ākāśa* came *vāyu* (the air), from air, *agni*; from *agni*, the water; and from waters appeared *pṛthivī*. Thus five *mahābhūtas* appeared with the increase of each *guṇa* (qualities, sound, *rūpa* (form), *rasa* (taste), touch and smell at each step of manifestation. (12)

After the creation of fiery Sun and Soma Moon, Mars was created from *tejas*, Mercury from *pṛthivī*, Jupiter, from *ākāśa*, Venus, from water, Saturn from air. (13)

It may be noted that in *Jyotiṣa* mostly Sopādhikṛta *mahābhūtas* are discussed.

Varāhamihira gives the simile with the iron ball held at the centre of a magnetic cage, while some thought of the supporting power of *Brahman* responsible for the **Earth's held up** position in space.

Earlier the rotation of earth was not conceived, the revolutions of heavens during day and night were considered to be caused due to *Pravāha Vāyu*. Since very old days of the *saidhāntika* astronomy, Lalla's *Sīsyadhī vṛddhida tantra* discusses the seven types of air in seven shells around the earth. The atmospheric air enveloped around the earth is known as *āvaha*. Its radius is said to be 537 *yojanas*. But it is interesting to note that Āryabhaṭa about five hundred years earlier than Lalla, claimed the rotation of earth about its own axis, but the hypothesis was not accepted and was much criticised by Lalla. It may be remarked that the basic unit of time is defined using the rotation of earth as standard. This definition stands even now when atomic watches are invented for use in scientific works. The other units of time are defined on the bases of motion of the sun and the moon. The time so defined is *sopādhika* while in *Nyāya* philosophy this is absolute but gets into use when defined in relation to the motion of a body in space (*ākāśa*). This way it is rendered *sopādhika*. Time and space are one and the same in Eiensteinian frame-work of the theory of relativity. But astronomers like Newton took space and time as absolute and considered these to be different *padārthas*. We discuss the implication of these concepts as used by our exponents of *Jyotiṣa*.

Absoluteness of Space and Law of Gravitation

It may be noted that *Jyotiṣa Śāstra* is a discipline, where the theories are evolved and hypotheses are supported or rejected through the mathematical arguments based on observations. *Jyotiṣa Śāstra* texts describe the methods of determining the direction(s) in space. The directions (*dik*) are nothing but *sopādhika* space. The directions are always relative to a particular point in space and thus will have no meaning in absolute sense. Thus *dik* is just the *sopādhikīkaraṇa* of space. Although *Jyotiṣacāryas* developed mathematical techniques to determine Directions/Subdirections or any relative orientation of a system, yet they were aware of the absolute nature of space. Using this concept they arrived at the concept of law of gravitation qualitatively (of course Newton treated the problem mathematically.) Before we discuss the notion about force of attraction of earth and planets in ancient or medieval Indian traditions, it is desirable to point out how the ancient seers thought of causes of planetary motions.

It is interesting to note that in ancient *Jyotiṣa Śāstra* tradition, the notions on causes of planetary motions were based on the philosophical concepts regarding time and space. *Sūrya Siddhānta* talks of the agents of planetary motion as the invisible personified **Time Gods** standing at the cardinal points (Apogee, perigee and the nodes) on the orbit. These Gods were identified mathematically with *manda kendra* (anomaly) *śīghra kendra* (the elongation argument) and *pāta* (the orbital nodes). It was conjectured that these Gods stand at their specific positions and drag the planets by their left and right hands on both the sides.

The notions predecessor of law of gravitation based on the symmetry property of space (*ākāśa*). As *ākāśa* is all around symmetric or directionless, how the planets can move? There must be some force?

Diagram 8.2

Broken arrowheads show the direction of the force due to the divine agent at *ucca* (Full arrowheads show the direction of velocity vector of the planet) *Sūryasiddhānta* (*SS*) talks of Divine agents of force (Representative of Compelling Time harmonicities) which are responsible for changes in velocity through invisible air ropes (The action at a distance).

Broken arrowheads indicate just the directions of action of force agent, located at *ucca*. The velocity increases on one side and decreases on the other side of *ucca*.

(See the diagrams 8.2, 8.3 which show the details of this model of drag-hypothesis). On the basis of this model they explained the variations in speeds of planets (and even argued to have proper signs for their accelerations). Even comparing the velocities of Moon and Mars etc., they attributed their relative velocity magnitudes to their sizes and masses while under the force of drag by the invisible Time Gods. Motion towards the north and south of ecliptic were explained on the basis of the dragging force due to Gods at the *pātas*. Mercury and Venus are said to be under the faster attractive drag force due to the God at *śīghra kendra*. It may be remarked that on the basis of this model they could not explain the *vakra gati* (Retrograde motions) of planets. Note that they did study the different types of possible velocities but just reported these types without explaining. These are the earliest notions about force of attraction and it may be pointed out that in these notions time is considered to be the compelling force, which causes changes in velocities and keeps planets moving along the curved space but no force of attraction responsible for keeping the planets in orbits could be assigned. There is no doubt that the notion similar to the above one is quite natural because Time binding on the motion is likely to be taken as a compulsion on the moving body and the cardinal points are the points from where the change in velocity starts developing. Even in the frame-work of the law of gravitation, the motion is represented by $\sin(nt)$, (where nt = anomaly), the acceleration starts developing from the cardinal point (velocity = n radians per unit of time).

The Notions Predecessor of law of Gravitation, based on the symmetry property of space (*Ākāśa*)

Diagram 8.3

The *S.S.* talks of divine agents of force also at the nodes which drag the planets towards northern or southern hemispheres.

Bhāskarācārya studying the motion of Mars, Jupiter etc. found that in case these are behind the Sun, they get accelerated and when Sun is behind any planet the latter is retarded. In fact Bhāskarācārya had almost arrived at the conclusion that Sun attracts the planets but he missed the point without the necessary elaborations. On the other hand, he could arrive at the most important conclusion about earth's gravity using absoluteness (leading to the all round symmetry) of space. How was the concept of the absolute or relative nature of space used in arguments by Bhāskarācārya in arriving at the hypothesis about the law of gravitation in case of earth? This would be clear from the following paragraph.

Symmetry of Space (*ākāśa*) is a property which could be easily inferred. In fact Newton's first law of motion, that nothing can move unless some force is applied, is a notion conceived by man since the beginning of creation. Newton just postulated the same in categorical statements and developed the laws of motion mathematically. Note that this law is just a mathematical translation of the fact that space is all around symmetric. It has no direction downward, upward or north, east, south or west. All the directions in space lack any preference for any directivity if there is no object at a point (which is negation of space at that point). If you suppose that the body will move in a particular direction defined with respect to a point in open space

(without any other body) one can counter-argue, "what is space with that direction?" "Why should the body not move in another direction?" Thus on simple logical grounds even the primitive man might have had familiarity with the first law of motion qualitatively. In addition to this, so naturally accepted inference, the spherical shape of the earth helped a lot in arriving at the notion of the force of gravitation. This fact will be clear in the following discussion.

When it was clear to man that the earth is a figure like a ball and he knew that there are habitants all over the earth, it helped to conclude about gravitation due to the earth. *Sūrya Siddhānta* describes the symmetry of space in a good philosophical way as follows:

*sarvatraiva mahāgolāḥ svasthānamupari sthitam.
manyante khe yato golāstasya kvordhvam kva vāpyadhaḥ.*

(S.S. *Bhūgolādhyāya*, Stanza 53)

i.e., Everywhere on the spherical earth, the observer's place is above (i.e., his head points towards upward direction), because this sphere (earth) is (held) in space. So which direction is upward and which direction is downwards? The directions have no meaning in space. Bhāskarācārya advanced further to infer about gravitation of the earth. His statement is :

*ākṛṣṭasaktīśca mahī tayā yat
khaṣṭhaṃ guru svābhīmukhaṃ svāsaktiyā
ākṛṣyate tat patatīva bhātī
same samantāt kva patatvīyam khe?*

The earth has capability to attract and due to this very property, in fact, this attracts any heavy object in space and the latter appears as if 'falling'. In the space which is symmetric all around, where it can fall?

It is clear that Bhāskarācārya arrived at the notion about gravitational force on the very basis of the principle of the 'Falling apple' about five hundred years earlier than Newton. There is no doubt that the credit to Newton is for all mathematical developments regarding motion which led kinematical studies to dynamical treatments, but Bhāskarācārya was the first to state categorically about existence of gravitational force of earth and argued more beautifully on the basis of symmetry of space and the spherical figure of the earth. As the earth is populated all around, for a man at a certain place (say \bar{A} , see diagram 8.4) on the globe there is one 'B' just below on the other side of the earth, like a shadow in water. There are other people too whose positions are along directions inclined with respect to the position of the first one. There are also along 90° away (i.e., along perpendicular direction (S)), but none falls away from earth's surface. Everyone thinks of himself standing above or towards-upwards direction. In this diagram are shown stones thrown by men at A and B falling to the earth from opposite directions. Thus one concludes that there exists force of attraction which is responsible for the "fall of bodies in space". So in fact the 'falling apple' theory is explained by Bhāskarācārya.

The Physical laws derived from the fact that $\bar{A}k\bar{a}śa$ is all around symmetric

Diagram 8.4

(Falling stone Syndrome in Bhāskarācārya's *Siddhānta Śīromaṇī*)

It also talks of the directionlessness of *ākāśa* as inferred from the spherical shape of the earth which is all around populated by human beings (on the one side (**above**) and on the other side in *Pātāla* (or **just below**)). But Bhāskarācārya advanced further to infer that **Earth attracts** the heavy things (say a stone) left in space and the latter appears *ās* if falling". He argues, where can the stone fall? *Ākāśa* is all around symmetric whichever direction is **above** or just below (like the shadow of a man in water) as the earth has spherical shape. This falling stone principle of Bhāskarācārya (1150 AD) came about five centuries earlier than Newton (1676 AD).

There is no doubt that for mathematicians space is symmetric and infinite, and they use the former property to arrive at the law of gravitation but we find in *Jyotiṣa* texts like *Sūrya Siddhānta*, Bhāskarācārya's *Siddhānta Śīromaṇi* etc., the dimensions of *ākāśa kaṣṭhā* (the orbit of space) which in fact is defined as the limit up to which point Sun's rays reach. Thus it is limited to *ākāśa*. Yet for them too, *ākāśa* is *vibhu* (all around and hence symmetric) and infinite, but unlike in qualitative philosophy they could go ahead and conclude about the laws of motion and universal gravitation functioning in nature by translating symmetry of space in mathematical language.

Conclusion

The references to *Jyotiṣa* in Vedic *vāṅmāyā* and later texts give details of cosmogonic evolution leading to the creation of *pañcamahābhūtas* from *tāmasa bhūtādi ahaṃkāra*. The stars and planets have evolved out of these *mahābhūtas*. Astronomical and astrological texts make use of the concept of *mahābhūtas* in their working principles. They used the *sopādhika ākāśa* in determining the directions/subdirections in two-dimensional and three-dimensional space, which helped in specifying the positions of terrestrial and celestial objects. They also made use of the *vibhu* absolute and infinite nature of space in inferring the existence of law of gravitation functioning in nature and derived the laws of conservation of momenta from its symmetry properties. The development of the laws of motion and gravitation are the most interesting developments in the hands of astronomers, which grew out of the philosophic concepts of *mahābhūtas*. They attributed the reasons for the gravitational forces to the very nature of matter, for example Bhāskarācārya gives the simile of a natural phenomenon like the heat in fire, hardness in stones etc. for the gravity of the earth. These modern studies in space science and other disciplines of study of *mahābhautika* entities have advanced to remarkable extents, which have served the causes of human conveniences all over the world.

It may be pointed out that *Hayata*, an Arabic astronomical text (translated into Sanskrit) talks of bodies (*Vasita, Falaki, Unsāri*, etc.) with one, two or more *mahābhūtas* but excluding *ākāśa*. (The Graeco-Arabic philosophy does not include *ākāśa* in the list of *mahābhūtas*. There are only four *mahābhūtas* in this system of philosophy) *Nyāya* philosophy too talks of bodies made up of specific *mahābhūtas* taken each individually but Śāṅkarācārya's *Pañcīkaraṇa* (a process claiming mixtures of *tanmātras* in the gross *mahābhūta* elements) has no provision for pure single *mahābhūta* elements. *Sūryasiddhānta* the astronomical text talks of five star planets out of five *mahābhūtas* taken individually. Thus there are differences in various schools of philosophy. But there is no doubt that the *Jyotiṣācāryas* went ahead to use the properties of the *mahābhūtas* to arrive at laws of motion and the gravitational law working in the universe which served the cause of scientific development.

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