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4. Fourfold Description of Sound
A Vedic View

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Fourfold Description of Sound

A Vedic View

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Acoustics is a field of science and arts dealing with generation, transmission and reception of sound. Acoustics has received a very high importance in Vedas and Vedic literature. The classical literature of Hinduism or Sanātana Dharma is rooted in Vedas. Sound in modern scientific terms refers to the pressure waves in air received by human beings in the audible range of generally 20 cycles/sec to 20000 cycles/sec. However the infra- and ultra-sound refers to the frequencies below and above the audible range respectively. In Vedas and Vedic literature several terms such as *nāda* and *śabda* are used. These terms cannot be translated directly as sound as they refer to vibrations including both physical and spiritual aspects. However the *nāda* and *śabda* include the human auditory range sound. In particular human speech, vocal and instrumental music that lie within the audio range have been discussed significantly in Vedas and Vedic literature. This paper presents a Vedic view of the fourfold description of sound expressed in the form of human speech. Also the paper includes discussions of Vedic view in relation to the views of modern acoustics.

Introduction

Veda refers to the body of knowledge that deals with physical, psychological and spiritual aspects of life and cosmos. The word *veda* etymologically relates to the verbal root *vid* meaning "to know". However it is interesting to note that the Vedas also refer *mantras* meaning "chants that convey knowledge". The Vedic chants have acoustical characteristics such as

phonetics, tonal quality, length measure, effort, etc. These Vedic chants are orally transmitted with precision from master to disciples over thousands of years. It is well known that the precision in the oral transmission of chants, music and speech cannot be surpassed through writing. Thus acoustics of human speech is very important. Also it is well known that the faculty of speech is revered as Goddess of Speech (Vāgdevī). The *mantra* from the *Yajurveda* says:

*devīm vācamajanayanta devāḥ, tam viśvarūpaḥ paśavo vadanti
sā no mandreśamūrjāṃ duhānā dhenuroagasmānupasśtutaitu*

The meaning of this *mantra* could be summarised as Creator Lord Brahmā and other *devatā* brought forth Vāgdevī (Goddess of Speech) to manifest communication. All beings use their abilities to communicate through Vāgdevī. May Vāgdevī like an all-desire fulfilling cow bless us with food, strength and faculty of speech.

It is quite difficult to precisely define and describe the origin of language and human speech. However it is known that Vedic chants and music in India have existed from very ancient times. Sir C.V. Raman in his article titled "The Acoustical Knowledge of Ancient Hindus"¹ says that:

It would form a fascinating chapter of history to try and trace the gradual development of musical instruments and musical knowledge, from the rhythmic chanting of the *Ṛgveda* in the ancient home of the Āryan race to the Indian music of the present day.

Speech Production: A Modern View

A question of scientific importance is about the origin of sound. This question, to begin with, can be addressed in reference to human speech. There is a large amount of scientific literature

1. C.V. Raman, 1922, *The Acoustical Knowledge of the Ancient Hindus*, Āśuṭoṣa Mukherjī Silver Jubilee Volume, vol. 2, pp. 179-85.

on human speech and music.² In a paper by Honda³ four processes are recognised in production of speech. They are:

- (a) Language processing, in which the content of an utterance is converted into phonemic symbols in the brain's language centre;
- (b) Generation of motor commands to the vocal organs in the brain's motor centre;
- (c) Articulatory movement for the production of speech by the vocal organs based on these motor commands;
- (d) Emission of air sent from the lungs in the form of speech.

It is seen from the above description that the emphasis is on neurological and physiological basis. It is the intention of this paper to look into the importance of speech sounds and their production from Vedic view.

Importance of Sound Field: Vedic View

The Vedas and Vedic literature are the classical source literature for Sanātana Dharma which includes sciences and arts of various aspects of life. It is well known that the Vedas are collections of *mantras*, which have been orally transmitted through the ages. It is interesting to note that UNESCO has also recognised the tradition of the oral transmission of Veda *mantras* as below:

Expressed in the Vedic language, which is derived from classical Sanskrit, the verses of the Vedas were traditionally chanted during sacred rituals and recited daily in Vedic communities. The value of this tradition lies not only in the rich content of its oral literature but also in the ingenious

2. (a) M. Honda, 2003, "Human Speech Production Mechanisms", *NIT Technical Review*, vol. 1(2), pp. 24-29.

(b) A.D. Patel, 2008, *Music, Language and Brain*, New York: Oxford University Press.

3. M. Honda, 2003, op. cit., pp. 24-29.

techniques employed by the brāhmaṇa priests in preserving the texts intact over thousands of years. To ensure that the sound of each word remains unaltered, practitioners are taught from childhood complex recitation techniques that are based on tonal accents, a unique manner of pronouncing each letter and specific speech combinations. — UNESCO Proclamation 2003 (Intangible Cultural Heritage – ICH)

The precision in oral transmission is directly related to acoustics. The six acoustical factors involved in precise Vedic chanting as per *Taittirīya Upaniṣad* are pronunciation of letters (*varṇaḥ*), their pitch (*svaraḥ*), the timing or duration (*mātrā*), the force (*balam*), melodious articulation (*sāma*) and combined sound effects (*santānaḥ*).

The sound and production of sound from human beings as speech and music are part of the *nāda* and *śabda*, which can be called a *sound field*. The various manifestations of sound in the world are generated from sound field. The sound field as *nāda* and *śabda* has received utmost importance in Vedic literature. Śāraṅgadeva, the author of *Saṅgīta Ratnākara*, a treatise on classical Indian music says:

*nādena vyajyate varṇaha padam varṇāt padadvacaha |
vacaso vyavahāroyam nādādhīnamato jagat | |*

The alphabets have manifested from the *nāda* (sound field). The words are made up from alphabets and from the words speech come out. Worldly transactions are carried out through the speech, and thus, the world is dependent on *nāda*.

In a similar way, in the words of a Yogī Sri Ranga Sadguru,

Just as from seed comes naturally sprout, branch, leaf, flower, unripe fruit and full fruit likewise starting from spiritual light as seed, the *nāda*, the *svara* and *akṣaras* have developed into the various aspects of knowledge⁴

4. Śrīraṅga Sadguru, 1983-2008 (19 vols.), *Amaravaṇī: Lectures on Sanatana Dharma*, Mysore: Aṣṭāṅga Yoga Vijñāna Mandiram.

The sound field as *śabda* and *nāda* takes us to the origins of the universe. The *Amṛta Bindu Upaniṣad*,⁵ one of the minor Upaniṣads, the following verse says:

dve brahmaṇi veditavye śabda brahma param ca yat |
śabda brahmaṇi niṣṇātaḥ param brahmādhigacchati | |

Two *Brahmans* to be realised, namely *Śabda* and *Param Brahman*. One who has realised and is well versed in *Śabda Brahman* will realise *Param Brahman*.

Thus it is seen that the knowledge of sound field as *śabda* and *nāda* is a prerequisite to the spiritual fulfilment in life. Also the sound field as the revered *Nāda Brahman* in addition to its being all-pervasive in the world is also source of Bliss. Śaraṅgadeva, the author of *Saṅgīta Ratnākara*,⁶ says:

caitanyaṃ sarva bhūtānāṃ viṣṭam jagadātmanā |
nāda brahma tadānandam advitīyamupāsmahe | |

We worship the *Nāda Brahman* second to none which is blissful and is in all beings as consciousness has manifested itself as universe.

The scriptures also refer to two types of *nāda*, namely *anāhata* and *āhata*. The *anāhata* refers to self-existing unproduced sound field without any vibratory cause and is experienced only in spiritually focused deepest states of Yoga. The *āhata* refers to the sound field produced by vibratory cause. The discussion in this paper deals with produced sound field, namely *āhata nāda*.

5. K.N. Aiyar, 1997, *Thirty Minor Upaniṣads* (English Translation and Sanskrit text), Delhi: Parimal Publications.

6. R.K. Shringy, and P.L. Sharma, 1978, *Saṅgīta Ratnākara of Śaraṅgadeva* (text and translations), vol. I, Delhi: Motilal Banarsidass.

Four Stages of Speech Sounds: Vedic view

An important hymn from *Taittirīya Brāhmaṇa*⁷ says:

*catvāri vāk parimitā padāni tāni vidur brāhmaṇā ye manīṣiṇaḥ |
guhā trīṇi nihitā neṅgayanti turīyam vāco manuṣyā vadanti | |*

Speech or word has four stages which are known by brāhmaṇa. Who has control over mind is well versed in this field. The first three stages are concealed in the cave within while only the fourth stage comes out as utterances by human beings.

According to a view of philosophers of grammar⁸ the four stages are referred as (a) *parā*, (b) *paśyantī*, (c) *madhyamā*, (d) *vaikharī*.

Also in addition scriptures refer to *dhvani*⁹ which would mean as voice and is related to speech sounds. The author Śaraṅgadeva in *Saṅgīta Ratnākara*¹⁰ says:

*ātmā vivakṣamāṇayoam manaha prerayate, manaha |
dehastham vahnimahanti sa prerayati mārutam | |
brahma granthisthitaha so'etha krāmadūrdhvoapathe caran |
nābhihrtkanṭhasyīśeśvāvīrbhāvayati dhvanim | |*

The human being impels the mind and the mind activates the internal power source in the body which in turn stimulates the vital force. The vital force stationed around the root of the navel, rising upwards gradually through the heart, and the cerebrum and the cavity of the mouth as it (the vital force) passes through them to manifest as *dhvani*.

7. (a) N.S. Ramabhadraçārya, 2004, *Udaka Śānti Mantrāḥ* (Sanskrit and Translations in Kannada), Mysore: Sri Sanatana Bharati Pathasala.

(b) Rama Nath Sharma, 2007, *Vāk, Śabda-tattova and Veda*, Ujjain: World Vedic Conference.

8. Rama Nath Sharma, 2007, op. cit.

9. S. Mukhopadhyaya, 1979, "Importance of Sound in the Tradition of Vedic Chanting", in *Dhvani*, ed. S.C. Malik, New Delhi: Indira Gandhi National Centre of Arts and D.K. Printworld.

10. R.K. Shringy, and P.L. Sharma, 1978, op. cit.

In this process also we can see clearly the four stages for production of sound or *dhvani* as:

- (a) the person's impelling of the mind;
- (b) the mind activating the vital force and getting ready to move;
- (c) the vital force moving and rising up through the navel, heart, throat, cerebrum and mouth cavity;
- (d) *dhvani* produced and travelling to receiver.

Parā, Paśyantī, Madhyamā and Vaikharī

It is to be noted that in Vedic view the origin of the verbal speech in human beings is traced to the location of the *mūlādhāra cakra*, which is placed in the coccygeal triangle where the spinal cord ends. This energy centre or *cakra* is of primary importance as it supports the entire body organisation.¹¹ An important verse from the *Prapañcasāra Tantra* text says:

*mūlādhārāt prathamamudito yastu bhāvah parākhyaha |
paścāt paśyantiyathā hrdayāgo buddhiyuṅgmadhyamākhyaha | |
vaktre vaikharīyatha rurudiṣorasya jantoḥ suṣumnā |
baddhastasmādbhavati pavana prerito varṇa saṅghaḥ | |*

The *parā* form of speech itself was unmanifest to begin with, then it manifested to become *paśyantī* as it moved up with vital force to the region of umbilicus or navel area. (Also simultaneously, the information at knowledge level is being converted into speech form.) The *paśyantī* form formed at the location of navel region rises up along with the vital force to the location of heart to become *madhyamā* along with the integration of the intellect to transform knowledge into speech form. Then *madhyamā* form at the heart rises along with the vital force to the location of throat and mouth

11. N.S. Ramabhadracharya, 2003, *Śrī Guru Hrdaya Ārṣa-sāhitya and I*, (Sanskrit text and translations), Mysore: Aṣṭāṅga Yoga Vijñāna Mandiram.

to manifest as *vaikharī* speech or verbal speech heard by the listener. Thus the articulated speech that contains alphabets (and words) have manifested through the movement of vital force through the central energy carrying channel termed as *susūmnā* along the central axis of the spinal cord.

Thus in the above verse the generation of whole process of fourfold level of speech is well described from Vedic view.

There is a verse from a classical Hindu text, which specifically gives the locations in terms of *cakras* to the fourfold level of speech in physiological terms in the human body similar to that as the previous verse. The verse says:

*parā vaṅgmūlacakrasthā paśyantī nābhisamsthītā |
hr̥dgā tu madhyamā jñeyā vaikharī kaṅṭhadeśagā | |*

In the fourfold speech, the *parā* level speech manifests at the *mūlādhāra cakra* (coccygeal triangle); the *paśyantī* and *madhyamā* at the *anāhata cakra* (cardiac or heart region) and the *vaikharī* at the *viśuddhi cakra* (at the cavity of the throat).

It is seen that similar description is given in the *Bhāgavata Purāṇa*¹² in the verse 11.12.17.

In another verse, the psychological process of speech formation is given as:

*vaikharī śabda niṣpattihi madhyamā smṛti gocarā |
dyotikārthasya paśyantī sūkṣmā brahmaiva kevalam | |*

In the fourfold levels of speech, the *vaikharī* form is the gross manifestation of words. The *madhyamā* form is at the memory level, the *paśyantī* form is at the level where the motive is seen and the *parā* form is at the subtle unmanifest as *Brahman*.

The above three important verses clearly show that the Vedic

12. G.L. Beck, 1993, *Sonic Theology*, USA: University of South Carolina Press.

view integrates both the physiological and psychological process involving the human body in explaining the fourfold speech (or sound field) formation through (a) *parā*, (b) *paśyantī*, (c) *madhyamā*, and (d) *vaikharī* levels.

The *vaikharī* level is the production of words and sentences which is physically energised by the vital force (in the form of exhalation and inhalation) at the throat and mouth. Prior to this is the *madhyamā* level drawing from memory (refers to vocabulary) and is physically energised by the vital force at the heart or cardiac region. Prior to this is the *paśyantī* level where the purpose of speech is seen by the speaker and is physically energised by the vital force at the region of navel area or region of umbilicus. Prior to this is the subtlest and unmanifest *parā* level and is physically exists as potential energy form at the base of the spine or the coccygeal triangle. It is interesting to observe that in production of speech and music, not just the contributions of the efforts of the mouth but of the whole body is involved.

Relevance of the Vedic Fourfold Model of Speech

A comparison of the modern acoustical view and the Vedic view of the production of the speech is considered. It is seen that the modern view considers the role of brain, lungs, and vocal organs such as throat and mouth. However, the Vedic view integrates through fourfold levels in both the physiological and the psychological aspects. The physiological aspects in Vedic view go to the base of the spinal cord as the source of physical energy which drives the vital force to rise up and activate the various components such as lungs, heart, throat and the mouth. The psychological aspects do bring the role of brain through memory and seeing the motive of speech. The Vedic view seems to be more comprehensive. In addition, the Vedic view of speech as a divine energy is important for the human beings in their spiritual developments.

The Vedic fourfold level speech production can be applied to any type of sound production. As an example, when one blows a conch-shell, the sound produced by shell (heard by the listener) is *vaikharī*. Prior to that the blowing of vibrating air-pulses to the conch-shell is the *madhyamā* level. Prior to that of blowing, the person blowing the conch-shell had decided to blow for a particular purpose which is seen by the person and is at the *paśyantī* level. Prior to that is the capability or potential of the person to blow a conch-shell, which is at unmanifest level being referred as *parā*. This Vedic fourfold approach for speech production can be adapted to any production of the sound either through direct vocal music or through an instrument.

Concluding Remarks

The Vedic fourfold approach to sound production provides a deep insight to understanding many phenomena. There are ongoing efforts to analogically view the creation of the universe through this Vedic fourfold view of production of sound field as (a) *parā*, (b) *paśyantī*, (c) *madhyamā*, and (d) *vaikharī*.¹³ Another way of observation is from manifest stage to unmanifest stage, that is to say, from *vaikharī* to *parā*. The interesting feature of the *vaikharī*, *madhyamā*, *paśyantī* and *parā* (VMPP) model is that one can direct the efforts to understand the life and nature starting from *vaikharī* and proceed towards *parā*. It is like going from sound to deep silence. The important point to be noted is that there is continuous energy link through vital force from *parā* to *vaikharī*. This means that going in the reverse direction, one should be able to start from *vaikharī* and proceed towards the *parā*, which is spiritually at a very deep level.

Although *vaikharī* is the last quarter but one can experience *vaikharī* as it is fully in manifested form. It encompasses the

13. A. Dalela, 2008, *Vedic Creationism*, i Universe, Inc., New York, USA.

whole life in many of its expressions. The *vaikharī* level can be seen and experienced in its expressions such as speech, music, literature and spirituality.¹⁴ We know that speech directly relates human transactions. Music is the human artistic expression.¹⁵ The literature such as poetry, plays, come into life through sound. The spirituality expresses through rituals and meditation in which *mantras* are used.¹⁶ It is known in the spiritual literature the importance of many types of Yoga are based on the sound field such as *mantra-yoga*, *nāda-yoga*, *japa-yoga*, *svara-yoga*,¹⁷ etc. Thus further work is needed in both theoretical and practical understanding and applications of the sound field.¹⁸ In this regard, fourfold Vedic model for sound field would be helpful.¹⁹ Further understanding of the sound field would also be rewarding as it brings joy in one's life.

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14. M.G. Prasad, 1998, *Garland: An Anthology of Hinduism*, New York: Association for the Advancement of Arts and Sciences from India, USA.
 15. R. Varma, 2009, *Indian Music*, New Delhi: Sasta Sahitya Mandal.
 16. (a) Sir J. Woodroffe, 1985, *Garland of Letters*, Ganesh and Company.
(b) S.V. Chamu. 2003, *The Divine Dancer*, Mysore: Aṣṭāṅga Yoga Vijñāna Mandiram.
 17. (a) Brahmavarchas, 1995, *Śrī Ram Ācārya Vāṅgmaya (Śabda-Brahma-Nāda-Brahma)*, Mathura: Akhand Jyoti Samsthan.
(b) Śivānanda, Svāmī, 1994, *Tantra Yoga, Nāda-Yoga and Kriyā-Yoga*, Divine Life Society, Uttar Pradesh.
 18. B. Seal, 1985, *The Positive Sciences of the Ancient Hindus*, Delhi: Motilal Banarsidass.
 19. A. Padoux (tr. Gontier, J.), 1990, *Vāk (The Concept of the Word in Selected Hindu Tantras)*, New York: State University of New York Press.