Speech Pathology In Ancient India -

A Review of Sanskrit Literature

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ABSTRACT

This paper aims at highlighting the knowledge of the Sanskrit scholars of ancient times in the field of speech and language pathology. The information collected here is mainly from the Sanskrit texts written between 2000 B.C. and 1633 A.D. Some aspects of speech and language that have been dealt with in this review have been elaborately described in the original Sanskrit texts. The present paper, however, being limited in its scope, reviews only the essential facts, but not the details. The purpose is only to give a glimpse of the knowledge that the Sanskrit scholars of those times possessed. In brief, this paper is a review of Sanskrit literature for information on the origin and development of speech and language, speech production, normality of speech and language, and disorders of speech and language and their treatment.

INTRODUCTION

The word “vak” in Sanskrit denotes speech and stems from the root “vac”. Which means to speak to speak. Speech was thought of as originated by Brahma and as eternal by some authors, as originated by Indra and Vayu by some authors, and as originated by gods by some authors. However, speech has been accepted as having originated under special circumstances and not being simply given. Speech was considered to be very important and it was compared to Brahma knowledge and to the ocean on account of its inexhaustible nature. It was considered to play a major role in communication. In conveying desires and feelings, in inspiring human beings, and in activating this world.

SPEECH PRODUCTION: The human body was compared to a Veena (a musical instrument). As the tightly held strings of the Veena produce different sounds when played, so do the vocal cords of the human Veena. When air is forced through them.

The ancient Sanskrit scholars believed that the atma inspires the mind and the mind in turn activates the air in the thoracic region. The air travels upwards from the thoracic region and gets modified at different levels in the vocal tract - vocal cords and articulators. The modified air is termed speech. Thus, the atma, mind. Air, and the articulators were considered to the prerequisites for speech production. In addition to these, factors like good health, normal vocal structures and desires to speak were also considered to be important for normal speech.

Phonetics has been described extensively in most of the Siksaś and Pratisakhyas. The production of all the Sanskrit speech sounds has been described in detail in these texts. In short, speech sounds were classified according to pitch, quantity, place of articulation, effort and sound material.

According to pitch, speech sounds were classified as either high, low, or high-low. According to quantity they were classified as short long or prolated and different speech sounds were assigned to different quantities. Eight places of articulation were mentioned: chest, throat, head, back of the tongue, teeth, nose, lips, and palate. Effort included the degree of contact and the degree of opening between the articulator and the place of articulation. Speech sounds were classified as vowels, stops and nasals, semivowels and fricatives on this basis. For the vowels, the degree of opening between the articulator and the pace of articulation was considered to be maximum, and for stops and nasals. The degree of opening was minimum or in other words a complete contact exists between the articulator and face of articulator. The semivowels and fricatives were in between. Sound material included the state of the vocal cords sound source, amount of air escape. Nasality and the movement of the larynx during the production of speech sounds. On the basis of this speech sounds were classified as voiced/voiceless. Slightly aspirated/strongly aspirated high pitched/low pitched/high-low pitched.

Much importance was given to vowels, as is evident from the following comparison: Vowels were compared to the day and the sibilants were compared to the night; also vowels were compared to the bones and the consonants to the marrow.

DEVELOPMENT OF SPEECH AND LANGUAGE: In the embryonic development, "speech" was considered to emerge last, following the emergence of the sense of vision and hearing. Bhartrhari considered that Vacya (expressed meaning) and Vacaka (unit of expression) exist even in newborn babies, who do not have any language yet. The implication is that Vacaka or unit of expression is not of any particular language in the beginning, but as the child grows and learns the language of the community to which he belongs, it assumes the form of that language. The child transforms this innate Vacya and Vacaka into a particular language as he grows because the innate Vacya and Vacaka can be transformed into any language. In this transformational process, the child undergoes three stages:

1. Perception of differential sounds in a sequence.
2. Grasping the word unity in the sequence of sounds.
3. Ability to speak the word in the same sequence.

Thus it is necessary that the child should recognize the word before understanding the meaning. However, not much information is available on how this transformation takes place. Bhartrhari considered that the child acquired speech and language mainly by observing the use of it by elders. He seems to conceive of this process as consisting of learning the meaning of individual words by the method of agreement and difference. Similar to the above idea, it has also been mentioned that the child acquires speech and language from society. Accordingly, the child at first watches the face of the speaker and attends to him. He appears to be listening to the speech of the parents. Later, indistinct speech will accompany the crawling stage. He will start speaking in single words at the age of one year. Not much information is available about the stages of speech development after the single-word stage except a brief note to the effect that the child acquires language mainly by modelling.

NORMALITY OF SPEECH AND LANGUAGE: The following were considered to be important characteristics in determining normalcy of speech: that it be not insufficient, not redundant, not meaningless, not incoherent, not inconsistent, unobjectionable, and that suitable words be used. The double negatives (not meaningless) stress the positive aspect (viz., it should be meaningful). Good agreement between the speaker and the listener was also considered to be an
important aspect of normal speech. That is, if the speech of the speaker consists of the above qualities, but in fact is not understood by the listener, then it cannot be considered normal.

Speech at different stages was described in the treatise in dramatics, probably to serve as norms. In the Natyasastra, children's speech has been described as having lisping with syllables unfinished and that of the aged as having faltering voice with misarticulations. Bharata also suggests different types of intonation to be used in different situations as follows: High, excited, and fast intonation in rejoinder, confusion, harsh approach, representing sharpness, roughness, agitation, weeping, challenging one who is not present in the scene, threatening, terrifying, and calling someone at a distance; grave and slow intonation in sickness, grief, hunger, thirst, deliberations, deep wounds, communicating confidential words, and in the state of anxiety; grave and fast intonation in women's soothing children, panic, refusal to lover's overture, and cold; slow, excited, and low pitch in conditions when object is lost, when something undesirable is heard, mental deliberations, envy, censure, saying something that cannot be adequately expressed, telling stories, conclusion, and action involving excess, misery, grief, surprise, jealousy, anger, joy, and lamentation. Bharata also considered that a pause enhances the meaning of speech and that the duration of the pause directly depends upon the length of the syllable.

Regarding voice, the voices that resemble the voice of swans, cranes, sparrows, crows, pigeons, dundubhis, and those that followed that of elders were considered to be normal. Thus, in evaluating the normalcy of speech and language meaning, information content, efficiency, intelligibility, social acceptability, normal voice, normal intonation, pause, articulation, and appropriateness for the age and culture were considered.

DISORDERS OF SPEECH AND LANGUAGE: In contrast to the above, speech and language were considered to be defective if there was insufficiency, redundancy, want of meaning or misjoinder.

Most of the speech and language disorders were thought to be neurological. The following are a few of the speech and language disorders mentioned by the ancient Sanskrit scholars: voice disorders, articulation disorders, speechlessness, loss of speech, and dysarthria/stuttering? (Gadgada). The origin of disorders as observed were seven: (1) hereditary, (2) congenital, (3) chemical, (4) traumatic, (5) seasonal, (6) parasitic, and (7) natural.

Disorders included under the heading hereditary are attributed to defects inherent in either the male or the female reproductive elements that form the primary factor of the embryo. The origin of congenital disorders is errors in the chemical imbalance in the mother or ungratified cravings of the mother during the period of her pregnancy. Chemical disorders originate because of the disturbed action of the three dosas in the body: vata, pitta, kapha - because of errors in the diet. Traumatic disorders include those caused by external trauma (bite of a wild animal) or internal injuries, due to blows, overstrain by wrestling, etc. Seasonal disorders include diseases that are caused by meteorological changes such as variations in the atmospheric temperature, humidity, dryness, rain, wind, and change in seasons. Parasitic disorders include those caused by forces beyond human control, e.g., lightening. Natural disorders include those that arise out of natural or organic and functional changes in the body and mind such as senility, death, hunger, thirst, sleep, etc. They include premature occurrence of these also.

Certain other conditions were also considered to be the causes of speech and language disorders: hearing loss, cleft lip, facial palsy, temporomandibular dislocation, organic conditions of larynx and
pharynx. Also, the causes of speech and language disorders were attributed to (1) perceptual and expressive problems, (2) misdiagnosis, and (3) the effects of time (seasons).

Among the speech and language disorders, articulation disorders are dealt with in detail in the pratisaksayas. Proper pronunciation of speech sounds was given much importance by those scholars. They had the idea that normal intelligence, normal hearing, structurally and functionally normal speech organs, and interest in learning were the prerequisites for proper pronunciation. Many of the articulation disorders were described as follows: (1) substitution in terms of place and manner of articulation, (2) omission, (3) too much contact of the articulator with the place of articulation, (4) more voicing than is required, (5) durational deviations, and (6) articulation defects arising from abnormal movement of the articulators like lowering and exaggerated movements of the jaw, speaking with closed lips, clenched teeth, exaggerated movements of the tongue, speaking as if within the mouth or with hollow mouth.

The causes of articulation disorders were identified as structural deformities of the oral cavity; cleft lip, tongue tie, overbite, growths on the tongue, underdeveloped speech organs; neurological and functional causes. Neurological articulation disorders like dysarthria were also considered.

Voice disorders were thought to have causes such as speaking very loud, using the wrong pitch, paralysis of the vocal cords, external injury, poisons, tuberculosis, leprosy, or contaminated milk (causing soft voice in children).

Loss of speech was regarded as either congenital or acquired. Acquired causes included tetanus, snake poison, temporomandibular dislocation, ranula of the tongue, specific kinds of food, second stage of alcoholic drunkenness, improper administration of oil to the body, paralysis of the tongue, and damage to the circle of Willis.

The causes of speechlessness were identified as mental retardation and hearing loss. The relationship between speech and hearing was known in those times.

TREATMENT OF SPEECH AND LANGUAGE DISORDERS: As most of the speech and language disorders were thought to be neurological, a medical line of treatment was advocated. Preventive and curative treatments have been identified.

Preventive measures used include the following:

- Tongue exercises (lateral movements of the tongue), drinking ghee to keep the voice normal, avoiding loud speech, consumption of bitter things often, as they have the quality of enhancing free utterance of speech, suppressing speaking harshly, and avoiding bad speech and language models.

- Curative treatments such as medical and surgical procedures were known at that time, and surgical repair of the cleft lip was being done as described by Susruta. Medical treatments were in use, some of which are mentioned here:

  - Oil of ajeya, for loss of speech due to poisoning;
  - Oil of cagalada, for nasal voice, misarticulation/dysarthria;
  - Kalyanakaleha, for loss of speech/aphasia;
  - Devadaru ... etc., for stuttering.

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The preparation of these drugs was described in detail.

Thus, a review of the literature reveals that the study of speech and language pathology originated long ago, the earliest date of which can be assumed to be the Vedic period (2000-2500 BC to 750-500 BC). The ancient Sanskrit scholars had knowledge of speech and language development, speech production, speech and language disorders, and their treatment. The set criteria in those days for determining the normalcy of speech are probably not very different from what we practice today. Not much has been described regarding the anatomical, physiological, and neurological aspects of speech, though a few nerves like the vagus, afferent and efferent nerves(?), and circle of Willis are mentioned. Most of the speech and language disorders were believed to be organic in origin, and similar lines of treatments were prescribed for speech and language disorders. However, they are not just for speech and language disorders but for many other disorders (e.g., oil of ajeya is the medical treatment for poisoning also).

As the field of speech and language pathology is yet developing, any information that sheds light on the subject would be of much use. If proven valid, the medical lines of treatment probably could be brought into the field of speech and language pathology. Hence further investigation and experimental verification in these aspects is warranted.

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