

ANCIENT INDIAN GRAMMATICAL TRADITION AND SOME WESTERN COUNTERS

1.1. Ancient Indian grammatical tradition: In the ancient Indian grammatical tradition, prosody was very much in the center of phonological analysis. The meaning of a Vedic passage depended on the proper accent (=svara) used. In late Vedic texts (e.g. *Śatapatha-Brāhmaṇa* 1.6.3.8) an interesting story has been narrated about how a demon named 'tvasṭṛ' mispronounced a ritual expression and achieved disastrous results. The demon wished to have a son who would be *indra-śatru* (Indra's slayer). However being an ignorant demon, he mispronounced his expression as *indra-śatru* (one whose killer is Indra), which gave him a son who was killed by Indra. The implication is that in Vedic Sanskrit the proper use of accents was absolutely necessary, and, even in classical Sanskrit, accent played an important role in determining the sense of an expression. According to Pāṇini, the meaning of a compound (also word) often depends on the position of the accent [Pāṇini: 6.1.223 and 6.2.1], e.g., from the grammatical rules of Pāṇini (6.1.20), we know that the word *ksāya* (accent on first syllable) means "abode", but *ksāyá* (with accent on the final syllable) means "destruction". Hence, it can be said that in Vedic and Classical Sanskrit accent as a prosodic feature played an important role.

In the next section (1.1.1), let us look at three main prosodic features along with their explanation and description as given by Pāṇini in his *Asṭādhyāyī*.

1.1.1. Prosodic features in Pāṇinian linguistics : The present study is also an engagement of the rules formulated by Pāṇini in his grammar *Asṭādhyāyī* A brief

discussion of the prosodic features, namely those of tone, syllable weight and nasalization ensues.

1.1.1.1. Tone: In ancient times, the Sanskrit that Pāṇini had analyzed was characterized by a tonic or pitch accent, i.e., one syllable in a word was pronounced with a higher musical pitch than the others. This means that meaning of a Vedic passage depended on the proper accent (=svara). The word 'svara' was understood as a property possessed exclusively by vowels and not by consonants, as they are entirely dependent on vowels and can at the most be said to possess the same accent as the vowel with which they are uttered together.

Pitch properties of vowels were pertinent to three classes:

Sūtras: P : 1.2.29: **uccair udāttah**□.

P : 1.2.30: **nicair anudāttah**□.

P : 1.2.31: **samāhārah svaritah**□.

These **sūtras** are explained by Cardona (1988:19) and Vasu (1906:6-8) as follows:

P : 1.2.29: The vowel (*ac*) pronounced high (*uccaih*□) is called *udāttah*□ (=high pitched or acutely accented).

P : 1.2.30: The vowel (*ac*) pronounced low (*nicaih*□) is called *anudāttah*□ (=low pitched or gravely accented).

P : 1.2.31: The vowel (*ac*) that has a combination of *udātta* and *anudātta* (tones) is said to be *svarita* (=circumflexly accented).

The above mentioned three properties of pitch corresponding to the rising, falling and the rising-falling (circumflex) pitches respectively, can be seen in the following kinds of words:

udāttah = agnīh “fire”

anudāttah = hàna “kill” or àgnih “fire”

svaritah = kanyâ “girl”

[The above examples are given by Vasu (1906: 85-87)].

The study of tones in tonal languages has played a significant role in the development of generative phonology, since the independence of tone and other segmental features is most easily demonstrated in the domain of tone, and many languages have rich systems of morphophonemic tonal alternations. The organization of tonal structure within a non-linear phonological model (the nature of tonal features and the location of tonal linkage) is sometimes called tonal geometry. Features of tone, such as high, low and mid, are proposed by distinctive feature theories of generative phonology.

1.1.1.2. Syllable weight: In phonology, a concept of syllable weight is used to distinguish levels of syllabic prominence based on the segmental constituency of syllables. Syllables can be metrically heavy or light. Pānīni in *Ashtādhyāyī* distinguishes between three kinds of syllable weights in the following sūtra:

Sūtra: P : 1.2.27: ūkālo•jjhrasvadīrghaplutah.

P : 1.2.27: A vowel (*ac*) is called *hrasva* “short”, *dīrgha* “long” or *pluta* “prolong, extralong”, as it has the duration (*kāla* “time”) of short /u/, long /ū/, or the extralong

vowel /u³/ of more than two morae (*ūkālah*) respectively [Cardona 1988:18].

Examples of the threefold distinction in the forms of /u/ are as below, where the short, long and extralong syllables have been underlined:

Short : sādhu “good, noble”

Long : ūsāra “saline soil”

Extralong : sādhvāh “monks”

1.1.1.3. Nasalization: Nasalization is a process in which sounds are produced while the soft palate is lowered to allow an audible escape of air through the nose. In the case of nasalized vowels, air escapes through the nose and the mouth simultaneously.

In Sanskrit, vowel nasalization (= *anunāsika*) is explained by Pāṇini as:

Sūtra : P : 1.1.8: mukhanāsikavacano•nunāsikah.

P : 1.1.8: A sound pronounced through the mouth and nose at once (*mukhanāsika vacanah*) has the class name *anunāsika* [Cardona 1988:20]. The term *anunāsika* is used as opposed to *śuddha* or pure non-nasalized vowels. A nasalized vowel is *rakta* (colored) or *raṅga* (nasal color) [Varma 1929:149; Allen 1953:40]. A picturesque description of the quality of these vowels (nasalized) as given in the *servasammāta śikṣā* is as follows:

...just as the milkmaids of Surastra cry *takrāāā* “butter milk”, so should the nasality be realized... (Allen 1953:40)

The opposition between nasal and oral is given a special technical status in the distinctive feature theory of generative phonology, where it works alongside other two

way contrasts as part of the complete specification of a sound system. In Chomsky and Halle's theory, for example, it is classified as a cavity feature, and grouped along with lateral under the specific heading of Secondary Apertures.

It may also be mentioned that the Indian grammarians have set up 3-categories of the nasals, viz., *nāsikya*, *anusvāra*, and *anunāsika* parallel to that of an underlying nasal, a homorganic nasal and a nasalized vowel respectively. According to Allen (1953: 39-42), the term *nāsikya* is applied to the stop series (*sparśa*, *spr̥os̥t̥a*), which gives rise to the nasal consonants \clubsuit , \tilde{n} , $n̄$, n , m , i.e., underlying nasal; the term *anusvāra* might be literally translated either as 'after sound' or 'subordinate sound' or a homorganic nasal as in *a \clubsuit ga* "part", and as already described earlier the term *anunāsika* gives rise to the nasalized vowels, like: \tilde{a} , \tilde{i} , \tilde{u} even Vedic semivowels like \tilde{y} , $v̄$, $l̄$ as in the words *sāyugina* "warrior", *sal̄l̄īna* "pasted, sticky".

1.2. Western tradition : In the western tradition prosodic features have become extremely important for the phonologists. There are different theories and schools which explain prosody according to their respective perspectives. These theories and schools are briefly discussed below in the oncoming subsections.

1.2.1. Firthian prosodic phonology : In the theory of phonology proposed by J.R. Firth (1951), i.e., in prosodic phonology, the notion of prosody is given a special status. "Sound and Prosodies" by Firth ([1948] 1957: 121-38) is generally regarded as the seminal article. In this article, Firth argued for the recognition of phonological features that do not belong to the consonant and vowel systems, but are essentially features of more than a single

segment; these were his ‘prosodies’, of which the most typical were palatalization or yotization (y), labiovelarization (w), and nasality. A favourite example to demonstrate the point is the pattern of vowel harmony found in languages such as Turkish and Hungarian. In general, vowel harmony means that successive vowels agree in certain features. Under Turkish vowel harmony, a vowel other than the first in a word may be low unrounded or high: other features of these noninitial vowels are simply taken from the first vowel. For example, ‘my house’ is *evim*, ‘my nation’ *ulusum*, ‘my arm’ *kolum* and ‘my rose’ *gülüm*. In all four examples, the high vowels of noninitial syllables copy their backness and roundedness from the first syllable, (repeated below as table 1 for convenience).

(a) Full System (in first syllable of a root)

	<i>Front</i>		<i>Central/back</i>	
	<i>Unrounded</i>	<i>Rounded</i>	<i>Unrounded</i>	<i>Rounded</i>
High	i	ü	i	u
Low	e	ö	a	o

(b) Subsystem (in noninitial syllables, including suffixes)

High	I
Low	A

I is realized as /i/, /y/, /ɨ/ or /u/ according to harmony

A is realized as /e/ or /a/ according to harmony

Table – 1 : Turkish vowels

Vowel harmony is of course not just a matter of vowel articulation, but of pervasive tongue or lip settings that must affect intervening consonants as well, even if

less audibly. Hence a prosodist would argue that the fronting and rounding of the vowels is not located in the vowels but extends throughout the relevant stretch of speech. To capture this in the notation, we can extract the pervasive features and show them as ‘prosodies’ of the word. Firth’s aim, as he clearly states, is to distinguish prosodic systems from phonematic systems, taking words as his principal isolates, he suggests that the differences in Hindustani and Punjabi can be seen in terms of the interchange of phonematic units and prosodies (Firth 1957: 134-35). Thus in ‘Eastern, careful’ Hindustani *pahyle* has 3 syllables and *h* is ‘phonematic’, in ‘western, quick’ Hindustani *pahyle* has 2 syllables and here *h* indicates an ‘*h* coloured or breathy vowel which is probably prosodic’, while in Punjabi *paylle* has a different syllable structure from the above two and here *h* is neither phonematic nor prosodic.

1.2.2. Sound Pattern of English by Chomsky and Halle : According to Chomsky and Halle (1968), prosodic features are considered to be one of the five main dimensions of classification of speech sounds which serve as input in establishing the distinctive features of a language. These five main dimensions are:

1. Major class features,
2. Cavity features,
3. Manner of articulation features,
4. Prosodic features,
5. Source features.

In SPE Chomsky and Halle obliquely deal with the feature [+stress] in English. Other features like vowel length and tone have been dealt with by other scholars like Wang (1967) and Fromkin (1971).

The Chomskian theory is segmental and linear in orientation. Here the prosodic features are viewed as suprasegmentals where a suprasegmental feature like stress is attached to a sound segment, and it has no independent existence. Suprasegmentals are seen to be superimposed on consonants and vowels.

E.g. Stress is seen to be a suprasegment of a vowel as in :

Pówer [Stress is denoted by the sign '].

Chomsky and Halle mention different degrees of stress while recognizing a single primary stress in a word.

Other features like, pitch and juncture are also known as suprasegmentals. Suprasegmentals are essential part of syllable. In order to study suprasegmentals, it is necessary to know structure of syllable in phonology.