Abstract

The present study is based on the assumption that there lies a positional asymmetry in the patterning of segmental speech sounds in a phonological string. Segments in different positions exhibit asymmetric articulatory and acoustic properties. The study takes up the problem of phonetic as well as phonological strength relations which account for the organization of the speech sounds in a specific fashion. As it turns out exploring that phenomenon leads to unravel the thread running through the central areas of word phonology.

Strength is treated in literature either as a form of perceptual salience or intrinsic property embedded in a particular segment, as evident in the works of Steriades’ (1997) ‘Licensing by cue’ model, Flemming and Kirchner’s (1998) ‘Integrated models of phonetics and phonology’. Irrespective of these approaches holding different view points concerning strength relations a general consensus is made that strength difference can be shown as a reflection of the asymmetrical relations holding between units in a representation. It has been found cross linguistically that marked structures are unevenly distributed throughout language, with strong or privileged positions allowing a greater range of structures and positional neutralization (Trubetzkoy 1939 (1962); Steriade 1994; Jun 1995; Padgett 1995; Steriade 1997; Casali 1997; Beckman 1998; Lombardi 1999; Zhang 2002; Barnes 2002; Alderete 2003 etc).

The following are among the research questions (motivated by the postulates) answers to which make up the contents of the thesis.

a) Why is there a predominance of certain phonological features and units in the world languages?

b) Why are the segments occurring in the prosodically weak positions such as word final or coda position prone to alternation or deletion unlike the segments in the strong position such as word initial position or onset which are not subject to any kind of change cross linguistically?

c) Why is that fact that strong phonological process such as aspiration is attested mostly with the word initial and foot initial position and lenition process such as spirantization is observed in the word final position cross linguistically?
d) Is it possible to substantiate the articulatory strength or weakness with acoustic analysis?

e) What is the motivation behind the permissibility and prohibition of certain consonant cluster in the phonotactics of a language? Can this issue be discusses upon in the framework of sonority constraints, different ranking of constraints within Optimality theoretic model or complexity condition of Government phonology?

In order to substantiate the notion of phonological strength the phonological processes which are taken into account in this study include assimilation, spirantization, gemination, aspiration and h-deletion. The theoretical models which are mainly used in this study are Government phonology (GP) and Dependency phonology (DP): two theories of phonological representation. In addition different rankings of markedness and faithfulness constraints within the rubric of Optimality Theory are also considered to capture the notion of hierarchy embedded in segmental patterning of speech sounds.

This dissertation shows that voicing assimilation is functional among the segments of same sonority value and this is blocked between the segments of asymmetric sonority value. However the redundant [+voice] feature of a sonorant consonant never triggers voice dissimilation. Indeed, the constraint AGREE is stronger between the constituents having same sonority value.

\[-\text{son}] [-\text{son}] > [-\text{son}] [+\text{son}]\]

The notion of phonological strength is strengthened by the data on spirantization and aspiration in this study bear ample testimony to the fact that there is a correlation between phonological licensing of features and prosodic positions. Spirantization in Assamese is generally found to be attested in the word final position that is crosslinguistically found to be a locus of lenition. In the same way the laryngeal feature of aspiration in Hindi is attested in the onset position, a site of fortition. Thus this study further draws the generalization that onsets tend to allow a wider range of structures than codas. Moreover, the acoustic analysis that is made using PRAAT software in relation to h-deletion in Hindi is also instrumental in establishing the claim that there is a correlation between acoustic cues and prosodic contexts. The fact that strength can be inherent in the internal make up of the segments is illustrated in this study with reference to the liquids and glides that trigger gemination in Sanskrit unlike obstruents and nasals which are not endowed with that potential. This dictum of segment
specific properties embedded in a particular class of segments is further enhanced in the light of the liquids and glides that trigger gemination in Sanskrit unlike obstruents and nasals which are not endowed with that potential.