Revisiting Word-stress in Hindi for a Speech Synthesis Programme

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In the present paper, we take up a phonological account of word-stress in Hindi presented in Pandey (1989) with a view to examining the issue of complexity in the stress patterns and finding phonetic evidence for the generalizations made in the study. The paper reports the work (see also Pandey 2014) carried out for a pronunciation lexicon of Hindi, incorporating both phonemic and prosodic structure.

The paper begins with addressing the issue of variation in the accounts of word-stress in Hindi, as noted in the literature (e.g. Kelkar 1968, Sharma 1968, Ohala 1977, Pandey 1989, Nair 2001 and Hayes 1995). It is shown that the differences in Hindi stress patterns noted in the descriptions is tractable on the parameters of region and formal-colloquial variation. It then takes up the main generalizations regarding word-stress patterns in Standard Hindi for discussion before stating the metrical rules of stress. The following topics constitute the main body of the paper: three degrees of syllable weight, syllable division, extrametricality, foot construction, and stress clash resolution.

The paper ends with a discussion of a brief experimental phonetic evidence for the word-stress patterns of Hindi. It is shown that the cues for word-stress include amplitude and pitch for full vowels, but F1 and F2 for schwa as a general pattern.

References

- Hayes, B. (1995). Hindi. *Metrical stress theory: Principles and case studies*. Chicago: University of Chicago Press.
- Kelkar, A. R. (1968). Studies in Hindi-Urdu I. Poona: DC.
- Nair, Rami (2001). Acoustic correlates of lexical stress in Hindi. Abbi, A. (ed.), *Linguistic structure and language dynamics in South Asia*. New Delhi: Motilal Banarasidas Publishers. 164-84.
- Ohala, M. (1977a). Stress in Hindi. In Hyman, L. M. (ed.), *Studies in stress and accent (Southern California occasional papers in linguistics)*. Los Angeles: University of Southern California. 327-38.
- Pandey, P. K. (1989). Word accentuation in Hindi. *Lingua* 77. 37-77.
- Pandey, P. (2014). Akshara-to-Sound rules in Hindi. *Writing Systems Research*, 2014 Vol. 6, No. 1, 1–9, http://dx.doi.org/10.1080/17586801.2014.883787
- Sharma, A. (1968). Hindi word accent. Indian Linguistics 30. 115-18.