

A Morpheme-Specific Constraint Approach to Vowel Harmony in Korean

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The problems with previous analyses of Korean vowel harmony are solved when harmony is treated as a consequence of morphological alternation rather than a purely phonological process. This morphological alternation is best accounted for using morpheme-specific correspondence constraints in an Optimality-Theoretic Analysis.

In Korean, vowel harmony occurs in the semantic contrasts of sound symbolic (SS) words. SS words are words whose sound bears some symbolic meaning, and are extremely productive in Korean (Cho, 1994). The majority of SS Korean words alternate between LIGHT and DARK, which have fast and slow connotations, respectively. Alternations between LIGHT and DARK are based on the vowels that can occur in these forms. DARK forms harmonize to contain only DARK vowels: [i, y, i, e, ə, u] (as in [tɛŋgəŋ] ‘chopping slowly’). LIGHT forms harmonize to contain only LIGHT vowels: [ɛ, ø, a, o] (as in [tɛŋgɑŋ] ‘chopping quickly’).

Phonological analyses of vowel harmony must use one harmonic feature to capture vowel alternations. The problem in Korean is that there is no single harmonic feature. Some alternations involve only a change in height, as in [u] to [o] in [hulləŋ]/[hollaŋ] ‘take off clothes’. Some alternations involve only a change in advanced tongue root (ATR), as in [e] to [ɛ] in [tɛŋgəŋ]/[tɛŋgɑŋ] ‘chopping’. Other alternations involve both changes in ATR and HIGH. Analyses using one harmonic feature ([low] or [ATR] (see Chung, 2000)) cannot completely capture the distinction between DARK and LIGHT without significant restructuring or arbitrary assignment of phonological features. This problem can be solved if this instance of vowel harmony is treated as a morphological process whereby morphemes for DARK and LIGHT bear phonological features that are in correspondence with the output surface form.

The feature associated with DARK is [+ATR] while the features associated with LIGHT are [-ATR] and [-HIGH]. Using both [HIGH] and [ATR] captures the fact that the phonological alternations result in changes in one or both features. The presence of a DARK or LIGHT morpheme triggers morpheme-specific correspondence constraints which restrict the occurrence of vowels in the output. Correspondence between the morpheme and the output is governed by left/right anchoring constraints and output-contiguity. These constraints represent the drive for the morpheme to be in correspondence with all vowels in the output. The interaction of the correspondence constraints with IO-Faithfulness and markedness constraints gives the expected outcome, including an account of high vowels, which do not undergo harmony after the first syllable. The analysis presented also accounts for

unexpected behavior, such as the absence of [o] in DARK forms and alternations of [u] and [o] after the first syllable.

Use of correspondence constraints to account for morphologically controlled harmony as opposed to agreement (Bakovic, 2000) is in line with work on featural affixation (Akinlabi, 1994), and is part of a larger project involving the use of morpheme-specific faithfulness constraints to account for morphologically controlled harmony.

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References

- Akinlabi, A. (1994). Alignment constraints in ATR harmony. *Studies in Linguistic Sciences*, 24, 1-18.
Bakovic, E. (2000). Harmony, dissonance and control, Linguistics, Rutgers University.
Cho, M.H. (1994). *Vowel harmony in Korean: A grounded phonology approach*. PhD Dissertation, Indiana University