Vowel harmony and lexical economy

With the advent of Optimality Theory (Prince & Smolensky 1993, McCarthy & Prince 1995) most theories of underspecification were undermined, not so much by linguistic evidence but rather by a change in scientific perspective. This is most evident in the work of Inkelas (1994) on Lexicon Optimization. If grammatical economy is regarded as the driving principle behind the creation of underlying structures, language learners will postulate those structures as underlying forms which incur the least amount of constraint violations. For non-alternating structures this predicts fully specified underlying forms even where features are predictable. Predictably alternating structures, such as the vowels of harmonic affixes in languages with vowel harmony, will be underspecified in their underlying representation. Nonalternating predictable items would violate anti-insertion constraints whenever they are parsed into surface representations if they were underspecified, while alternating predictable items would incur faithfulness violations with half of their realisations if they were specified for the alternating feature underlyingly. Harrison & Kaun (2000) provided evidence from language games in languages with vowel harmony that contrary to the predictions made by Lexicon Optimization non-alternating vowels in non-initial position of stems have to be regarded as underspecified for the harmonic feature(s) underlyingly. However, they did not provide a theoretical reason for this underspecification.

There are two competing views on what grammatical mechanism triggers vowel harmony. Smolensky (1993), Kirchner (1993), Pulleyblank (1996) and many others treat harmony as determined by alignment constraints on vocalic features. This was further developed as an 'anti-intervention' constraint by Ellison (1995) and Zoll (1996). This constraint is violated whenever a candidate has a conflicting feature specification between a vowel at one edge of the designated domain and the other edge of the designated domain. The alternative view regards harmony as the effect of a highly ranking faithfulness or agreement constraint between adjacent feature bearing units in surface representations (Bakovic 2000, Krämer 1998, 2001a,b).

I will argue in this paper that even nonalternating harmonic vowels are predicted to be underspecified in the faithfulness account of harmony. In this view, the triggering vowel corresponds with its underlying specification. Via syntagmatic correspondence all harmonic vowels correspond with this triggering vowel. See diagram. Since they correspond with a vowel in the input their surface feature specification cannot be regarded as inserted.

(1) Indirect correspondence:

\[
\text{Input: } /V[+F]_1 V[ ]_2 V[ ]_3/
\]

\[
\text{Output: } V[+F]_1' V[+F]_2' V[+F]_3'
\]

Thus, nonalternating harmonic vowels incur no violations of anti-insertion constraints if they are left underspecified in their underlying representation. Tableau (2) shows that in such an analysis both mappings (input–output pairs a,b) do equally well with respect to the number of constraint violations. Thus, speakers might choose the underspecified form to reduce the burden on the lexicon.
(2) \[
\begin{array}{|c|c|c|c|}
\hline
& \text{IO-IDENT} & \text{S-IDENT} & \text{DEP-IO} \\
\hline
\text{a.} & \text{/CiCiC/} & \text{CiCiC} & \\
\hline
\text{b.} & \text{/CiCUC/} & \text{CiCiC} & \\
\hline
\text{c.} & \text{/CiCuC/} & \text{CiCuC} & \ast \\
\hline
\text{d.} & \text{/CiCUC/} & \text{CiCuC} & \ast \ast \\
\hline
\end{array}
\]

Under an account favouring the analysis of harmony as alignment or 'no intervention' the harmonic features have to be regarded as inserted. Thus, the wrongly fully specified underlying representations are predicted.

(3) \[
\begin{array}{|c|c|c|c|}
\hline
& \text{IO-IDENT} & \text{NO INTERVENING[+bk]} & \text{DEP-IO} \\
\hline
\text{a.} & \text{/CiCiC/} & \text{CiCiC} & \\
\hline
\text{b.} & \text{/CiCUC/} & \text{CiCiC} & \ast \\
\hline
\text{c.} & \text{/CiCuC/} & \text{CiCuC} & \\
\hline
\text{d.} & \text{/CiCUC/} & \text{CiCuC} & \ast \\
\hline
\end{array}
\]

If this reasoning is correct a further motivation for assimilatory phenomena, apart from ease of articulation is detected. Vowel harmony, and any kind of assimilation serves lexical economy. Furthermore, the patterns of underspecification detected by Harrison & Kaun give supporting evidence for an analysis of harmony as correspondence rather than alignment.

References


