Preservation of the Marked in Vowel Reharmonization

In this paper I argue that vowel reharmonization anomalies in Tuvan (Harrison 2000) and Finnish (Vago 1988) are best analyzed as cases of “the preservation of the marked,” in the sense of de Lacy (2002). This analysis is more tightly constrained and more explanatory than the underspecification analysis proposed by Harrison (2000) and Harrison and Kaun (2000), and provides support from a new domain for de Lacy’s proposals.

The phenomenon is as follows. Tuvan (Turkic) and Finnish both have pervasive front/back harmony in all native words. Each language contains a reduplication construction of the melodic overwriting type (Alderete et al. 1999): full, suffixing reduplication, with the initial vowel of the RED (which corresponds to the initial vowel of the base) fixed as a back vowel. When the base contains front vowels, these are reharmonized as back vowels in RED, as in Tuvan idik ‘boot’ > idik-adık (where i is the high back unrounded vowel).

An exception to the reharmonization pattern is seen in words with disharmonic front vowels in the base (mostly loanwords): these are not reharmonized as back vowels in RED. Thus, mafina ‘car’ is reduplicated as mafina-mufina, not *māfina-mufina. The relevant generalization is that only fully harmonic inputs are subject to reharmonization in RED. How can this be explained?

Harrison and Kaun (2000) propose an analysis of this pattern based on underspecification. They argue that in fully harmonic words, the front/back value of the non-initial vowels is predictable (by spreading, or alignment, of a front/back node linked to the initial vowel) and therefore these vowels may be underspecified for backness underlyingly. Disharmonic input vowels, by contrast, are unpredictable and thus specified underlyingly. On this view, only underspecified vowels are subject to reharmonization in RED. Unfortunately, this is more a restatement of the problem than an explanation: the real question is what the behavior of these different underlying representations can tell us about the nature of grammars.

De Lacy’s (2002) formalization of markedness offers an answer: markedness constraints penalize marked structures more than unmarked structures, and faithfulness constraints preserve marked structures more than unmarked structures. For a phenomenon like front/back harmony, we may propose a harmonic scale along which the various possible autosegmental representations are arrayed. A backness node linked to multiple vowels (MULT-LINK) is less marked than a node linked to a single vowel (SG-LINK), as a harmonic word with MULT-LINK incurs fewer violations of general markedness constraints like *STRUC. However, if markedness constraints asymmetrically penalize SG-LINK, faithfulness constraints must asymmetrically preserve it. Thus, the grammar contains the faithfulness constraints Ident{SG-LINK} and Ident{SG-LINK, MULT-LINK} (which preserves either kind of representation), but the constraint Ident{MULT-LINK} is impossible in de Lacy’s theory.

The difference between fully harmonic and disharmonic words is that the former have MULT-LINK while the latter have SG-LINK. All words are fully specified underlyingly, in accordance with Lexicon Optimization (Prince and Smolensky 1993). The reharmonization behavior is captured simply by ranking HARM (a cover term for the markedness constraint(s) driving harmony in RED) below Ident{SG-LINK} and above Ident{SG-LINK, MULT-LINK}: Ident{SG-LINK} >> HARM >> Ident{SG-LINK, MULT-LINK}.

De Lacy’s extremely restrictive theory of markedness thus captures the facts elegantly. It follows from the design of the theory that no reharmonization process should asymmetrically affect disharmonic words without also affecting fully harmonic words, a generalization which appears to be empirically valid cross-linguistically. Moreover, we learn something about the nature of grammars that underspecification cannot tell us: the reharmonization anomalies in Tuvan are simply an example of the principle that grammars preferentially preserve marked structures. This goes to the very heart of the concept of faithfulness in OT.

Selected References