Abstractness or complexity? The case of Hungarian /a:/

Distinctive feature values attributed to the phonological segments of a language are normally based, in the unmarked case, on their phonetic properties (height, backness, rounding, length, etc. in the case of vowels); this is sometimes referred to as their phonetic 'grounding' (cf. Archangeli & Pulleyblank 1994). Some phonetic properties may on occasion turn out to be phonologically irrelevant, hence the corresponding feature values may remain unspecified (and the specification of the properties concerned left for 'phonetic implementation'). For instance, the Hungarian nonhigh unrounded front vowels [ɛ] and [e:] exhibit regular length alternation with one another, despite the difference in height (low vs. mid). One possibility for keeping the (description of the) length alternation regular is to leave the value for the feature [low] unspecified, and correspondingly symbolize these segments as /ɛ/, /ɛ:/ or – for typographical convenience – as /e/, /e:/ (Siptár & Törkenczy 2000). Similarly, regular vowel harmony alternation is found between [ɛ] and low back slightly rounded [ɔ]; here, it is the rounding of the back vowel that can be seen as phonologically irrelevant (in fact, rounding is predictable throughout the back vowel set) and the vowel pair can be symbolized as /ɛ/, /ɑ/ or, again for typological convenience, as /e/, /a/, with no implication concerning the backness value of the latter (that is, **not** meant in the sense of IPA [a], an unrounded **front** low vowel).

One thing that would be expected to be quite impossible, however, is that the phonological behavior and phonetic character of a vowel be downright irreconcilable, rather than the two sets of properties being in a proper subset relation, as in the above cases. Interestingly, Hungarian provides an intriguing example of this supposedly impossible situation, too. The long counterpart of /a/, symbolized as /a:/, is a regular back vowel in terms of its vowel harmony behavior (alternating with /e:/). Nevertheless, as has been repeatedly pointed out in the relevant literature, both phonetic and phonological, its phonetic backness value seems to have been moving recently towards the front of the oral cavity. The present paper reports on acoustic-phonetic investigations of this issue.

It is demonstrated by measurements of formant values on a large body of spontaneous speech material that young female speakers' second formants of /a:/ clearly exhibit values characteristic of front vowels. Given that F2 is the acoustic manifestation of the horizontal (front–back) movement of the tongue (Slifka 2005), it can be concluded that /a:/, whether or not it is phonologically attributed the feature value [+ back], is phonetically a front vowel. In the case of young male speakers, the data also prove that their vowel /a:/ is fronted within the oral cavity, albeit the actual tongue position is central (or front-retracted), not as clearly front as in the case of female speakers. These data unambiguously confirm that a historical change has occurred (or, is just occurring) with respect to the articulation of this vowel (Magdics 1965; Gráczi & Horváth 2010), influencing the phonetic definition of the surface realization of the Hungarian vowel phoneme /a:/.

The paper is concluded by a general discussion of the issue of whether the rules of Hungarian vowel harmony, rather complex as they are anyway (cf. Hayes et al. 2009; Törkenczy 2011), should be further complicated by describing the alternation between /e:/ and /a:/ as that between a mid **front** vowel and a lower low (retracted) **front** vowel, as the phonetic data seem to suggest, or else the distinctive feature values of this language should be made (or allowed to become) more abstract in that the 'lower low front unrounded long vowel' should simply go on to be phonologically classified as 'low **back** unrounded' /a:/.

References

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