

## Variation and subpatterns of disharmony in Hungarian

Péter Rebrus – Miklós Törkenczy

Research Institute for Linguistics, Hungarian Academy of Sciences (MTA)

If we view variation in phonology as differential behaviour under identical conditions (rather than multiple outputs corresponding to the same input), then we can distinguish two types: *lexical variation* (when different lexical items that have the same relevant phonological properties behave in different ways under identical conditions) and *vacillation* (when the same lexical item behaves in more than one way in the same context).

Both these types occur and show intricate patterning and subpatterning in Hungarian front/back harmony, specifically in disharmony after roots that contain neutral vowels (Szigetvári et al. 2012). In this paper we discuss these and show that they conform to the requirement of monotonicity/contiguity of patterning that we claim constrains disharmony in harmonic systems.

Hungarian has three vowels that behave neutrally to a different degree:  $i(:) > e: > \epsilon$ , to simplify matters here we focus on  $i$  and  $i:$ , which are “strongest” in neutrality.

Anti-harmony (AH) shows lexical variation. AH occurs when an all-neutral root requires the back alternant of an alternating suffix. Some roots with  $i(:)$  show this behaviour, but most roots of identical vocalic structure have the front (i.e. non-disharmonic) alternant: [N]B *fi:r-to:l* ‘grave-ABL’ but [N]F *hi:r-tø:l* ‘news-ABL’. See (1) below where roots are shown as harmonic contexts to which the harmonic values back or front are assigned in suffixes:

(1)	contexts	[...B]_	[N]_	[...F]_
	values	B	B F	F

This pattern is modified by what we call the ‘Polysyllabic Split’, which inhibits lexical variation for polysyllabic all-neutral roots: there are no anti-harmonic roots longer than one syllable (context [NN<sup>+</sup>]<sub>1</sub>):

(2)	contexts	[...B]_	[N]_	[NN <sup>+</sup> ] <sub>1</sub>	[...F]_
	values	B	B F	F	F

The neutral vowels  $i(:)$  are transparent in Hungarian: *kotfi-to:l* ‘car-ABL’, *øtji-tø:l* ‘lad-ABL’ (the other neutral vowels are variably transparent in accordance with their degree of neutrality; this is the ‘height effect’ we abstract away from (Hayes and Londe 2006)). Thus:

(3)	contexts	[...B]_	[...BN]_	[...FN]_		[...F]_
	values	B	B	F	F	

Transparency to backness shows vacillation when there is more than one neutral vowel in the context [...BNN<sup>+</sup>]<sub>1</sub>; compare *madrid-to:l* ‘Madrid-ABL’ and *martinik-to:lltø:l* ‘Martinique-ABL’. This is called the ‘count effect’ (Hayes and Londe 2006):

(4)	contexts	[...B]_	[...BN]_	[...BNN <sup>+</sup> ] <sub>1</sub>	[...FN]_	[...F]_
	values	B	B	B%F	F	F

Interestingly, both variable patterns are modified by a paradigmatic uniformity constraint ‘Harmonic Uniformity’ (HU) which requires that the harmonic class of a suffixed stem must be identical to the harmonic class of its root.

HU and anti-harmony: *ind-* ‘start’ is an antiharmonic bound root, accordingly, it takes the back alternant of the intransitive suffix: *ind-ul*. The same root can also take the transitive suffix *-i:t* which is invariable and has the neutral vowel *i:*. The form *ind-i:t* ‘start-TRANS’ is all-neutral and polysyllabic and cannot be antiharmonic according to the Polysyllabic Split - but it is because of HU: *ind-i:t-o*: ‘start-PART’ not *\*ind-i:t-ø*:. This means that there is lexical variation after polysyllabic stems and thus there are different subpatterns in anti-harmony for roots and polymorphemic stems:

(5)	contexts	...B_	N_	NN_	...F_
	roots	B	<b>B F</b>	F	F
	polym. stems[[...]N]_	X	X	<b>B F</b>	X

HU and transparency: the *i* is transparent in *madrid-to:l*. If we add the locative suffix *-i*, variation should occur according to the count effect, but because of HU only *madrid-i-to:l* ‘Madrid LOC DAT’ is possible *\*madrid-i-tø:l* is not. Again, there are different subpatterns for roots and polymorphemic stems:

(6)	contexts	...B_	...BN_	...BNN_	...FN_	...F_
	roots	B	B	<b>B%F</b>	F	F
	polym. stems	X	B	B	F	X

We have argued elsewhere that the typology of disharmony in front/back harmony systems (Kiparsky and Pajusalu 2003) can be given a simple analysis with reference to the principle of monotonicity requiring that the patterns of values assigned to harmonic contexts must be contiguous (assuming a universally fixed scale of harmonic contexts). In the talk we show that (i) both transparency and anti-harmony in Hungarian are best analysed as coexisting subpatterns (‘co-phonologies’); (ii) both types of variation in Hungarian front/back harmony and (iii) the intricate subpatterns conform to monotonicity and thus fit into the general (cross-linguistic) picture.

## References

- Hayes, Bruce and Zsuzsa Cziráky Londe (2006). Stochastic phonological knowledge: The case of Hungarian vowel harmony. *Phonology* 23. 59–104.
- Kiparsky, Paul & K. Pajusalu. (2003) Towards a typology of disharmony. *The Linguistic Review* 20:217–241.
- Szigetvári, Péter et al. (2012). Dark secrets of Hungarian vowel harmony. In: *Sound, Structure and Sense: Studies in memory of Edmund Gussmann*, Eugeniusz Cyran, Henryk Kardela & Bogdan Szymanek (ed.) Lublin: Wydawnictwo KUL. 491–508.