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LOW VOWEL "LENGTHENING" IN HUNGARIAN**

1. INTRODUCTION

The alternation in Hungarian in which stem-final short low vowels ([ɔ] and [ɛ]) alternate with their long counterparts ([aː] and [eː], respectively) in suffixed forms of the stem, is usually referred to as Low Vowel Lengthening (LVL). LVL is a productive alternation, insensitive to vowel harmonic properties of the stem. It is illustrated in *Table 1*.

Table 1: Low Vowel Lengthening in Hungarian

Nominative Singular	Accusative Singular	Meaning
fɔ	faːt	'tree'
kucɔ	kucaːt	'dog'
mɔtʃkɔ	mɔtʃkaːt	'cat'
pɛjvɔ	pɛjvaːt	'chaff'
kɔlodɔ	kɔlodaːt	'stocks (form of punishment)'
kɛfɛ	kɛfeːt	'brushN'
piskɛ	piskeːt	'gooseberry'
ʃørtɛ	ʃørteːt	'bristle'
ogrɛ	ogreːt	'ogre'
rɛmɛtɛ	rɛmɛteːt	'hermit'

There have been several attempts at explaining this phenomenon, but certain obstacles have not been successfully overcome, even though it has been approached differently by different authors. Also, it has been analyzed as both shortening (Abondolo 1988, Rebrus 2000) and lengthening (Siptár and Törkenczy 2000) in the literature, but no general discussion has been presented on the differences between these two approaches. In the following, the most problematic cases of LVL will be identified, which will be followed by a comparison of theoretically possible groups of analyses. Finally, a new approach will be introduced.

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2. DIFFICULTIES

The following observation can be made about Hungarian phonotactics:

(1) There are no words in Hungarian that end in [aː] or [eː].

There are two aspects of it which proved to be problematic, yet crucial for accounts of LVL. First, Novák (1999) provides a functional motivation for LVL. In Hungarian analytical and "quasi-analytical" suffixes can appear with linking vowels. These vowels are usually mid ones, yet a closed class of consonant-final stems (called Lowering Stems) take low linking vowels (e.g. *gáz-ok* 'gas-PL NOM' vs. *ház-ak* 'ház-PL NOM', *gáz* is a regular stem, *ház* is a LS in Hungarian). LVL is needed to ensure the reconstructability of the stem and the identification of stem-morpheme boundary Therefore Lowering Stems should be easily fit into any analysis given for LVL.

Another peculiarity for which any approach of LVL should account for is the case of stems that do not trigger LVL, but still harmonize with the stem.

Table 2: Not triggering LVL, but harmonizing with the stem

kucɔʃaːg	*kucɔʃeːg	*kutyaság* 'dogness'
mɛdvɛseːg	*mɛdvɛsaːg	*medveség* 'bearness'
lilɔʃaːg	* lilɔʃeːg	*lilaság* 'purpleness'
fɛkɛtɛseːg	*fɛkɛtɛsaːg	*feketeség* 'blackness'

In such cases, separate phonological domains are often proposed for stem and suffix – in order to explain the absence of LVL – but then the application of Vowel Harmony is unexpected. Separately, these problems have been previously addressed in the literature, but no analysis so far proposed in the literature gave a solution for both of them.

3. SHORTENING, LENGTHENING OR PHONEME C?

The question of whether a shortening or a lengthening approach is more preferable in general, has so far been devoted little attention in the literature. Three options seems possible here: deriving alternating forms A and B from an underlying A, an underlying B or from a third, abstract phoneme (C). The third option has to be instantly rejected here, because in this case the data do not justify or necessitate such an approach and applying such a solution would add to the complexity and abstractness of the system and raise the old problem of generative phonology being unnecessarily abstract (Kiparsky 1968).

Positing /aː/ and /eː/ as underlying and deriving the [ɔ]'s and [ɛ]'s of the Nominative forms from them by rule would mean analysing LVL as a shortening process in

which the underlying /aː/ or /eː/ is shortened word finally.[1] An analysis like this would suppose a phonologically less marked sound to be found underlyingly. This in line with cross-linguistics patterns in the case of the [ɔ] ~ [aː] alternation, since /aː/ undoubtedly appears in far more languages than /ɔ/ does. It would also entail that the base form appears in more marked forms and the less marked one is the one that is derived which would be somewhat unfavorable.

Such an analysis would not need a phonotactic constraint to arrive at a situation described in (1), which would seem tempting. Word finally, long and short low vowels are neutralized in this case. This, however, if more closely examined, is somewhat puzzling. The [ɔ] vs. [aː] and [ɛ] vs. [eː] contrast is a heavily loaded and also very salient contrast, and its neutralization, in lieu of a (functionally motivated, but otherwise arbitrary) phonotactic constraint, has to be accounted for by other arbitrary means. In this case there should also be a group of stems that, in the Nominative Singular, end in a short low vowel that systematically fails to lengthen in suffixed forms. These would be the stems that end in a short low vowel underlying and would question the efficiency of LVL for stem identification. Therefore, even if this move is tempting at first glance, there is no real structural advantage of not proposing a phonotactic constraint like (1) in shortening approaches.

The traditional approach to Low Vowel Lengthening is – as the name also shows – analyzing it as lengthening process which derives the [aː] and [eː] from the /ɔ/ and /ɛ/, respectively. Approaches of this kind, by positing /ɔ/ and /ɛ/ as underlying, posit the more cross-linguistically marked sounds to be underlying but the underlying form surfaces in less marked forms of the paradigm, for instance, in the Nominative Singular that has no overt marking in Hungarian. A lengthening analysis would also necessarily assume that long low vowels are banned word finally in Hungarian by a phonotactic constraint. Therefore the constraint stipulated in (1) has to be perceived as a static phonotactic rule rather than a dynamic one; the lack of long low vowels in a word final position is not a result of a neutralization process, but the possibility of their presence is excluded altogether.

Lengthening approaches have one strong advantage over shortening ones. While shortening approaches share the dynamics of the stem having the possibility of being long in itself, but word final position blocks this process or actively reduces the vowel, these analyses by default assume that having an overt suffix is a protection from this effect. If there is a suffix that does not trigger LVL, it has to be motivated through the same condition or mechanism and therefore shares a trait or feature with nothing. To distinguish groups of suffixes that are different with respect to triggering LVL is more theoretically problematic in a shortening approach as their most important trait is overtness.

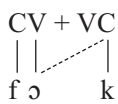
In the case of lengthening analyses, an intuitive idea can be formalized for Hungarian Low Vowel Lengthening: it is the addition of an extra morpheme (i.e., the suffix)

1 Cross-linguistically, this would not be unprecedented. McCarthy (2005: 11), for example, argues that this is in fact the only way to derive such alternations, given that "[there] may be other lengthening contexts, but presuffixal position does not seem to be one of them."

that triggers the lengthening. This gives us the opportunity of explaining it – in, for example, an autosegmental framework – by the suffix providing extra timing units that the stem-final low vowel can spread to. Such an approach places the structural difference in the suffix, allowing for a more practical differentiation between suffixes that trigger LVL and those that do not. In the following, an approach like this, our approach, will be presented.

4. EMPTY V IN THE SUFFIX

In this analysis suffixes triggering LVL begin with an empty vowel position. The empty V-position enables the melody of the word final short low vowel to spread and that is how it lengthens. The underlying form of the stem contains a single word-final /ɔ/ or /ɛ/ and when it is lengthened, its long form will be [aː] or [eː] (as proposed in Section 1). This is illustrated in the following figure with a simple case—the word *fák* [faːk] 'trees PL NOM'. This example gives a good insight into the structure of most words showing Low Vowel Lengthening.



4.1 Lowering Stems

Lowering Stems in this framework can be represented as stems with a floating element just like in Rebrus (2000). It can be stipulated that *gáz* 'gas', which is a regular stem, and *ház* 'house', which is a Lowering Stem, both have a CV structure of the form CVVC, but *ház* also has a floating A archiphoneme. (This A is a low vowel not specified for backness, as Lowering Stems may take either ɔ or ɛ as a linking sound but that is in all cases deducible from the harmonic properties of the stem).

The figure above shows the same suffix (the Accusative Suffix) with three different types of stems. The first word is *kutyát* 'dog, acc.' in (*i.)* where Low Vowel Lengthening takes place as previously described. The second example in (*ii.)* is *gázt* 'gas, acc.' which is a completely regular noun and does not take any linking vowels. The third one in (*iii.)* is a Lowering Stem and the floating A of the stem attaches to the empty vowel position at the beginning of the suffix.

This is a case where the suffix chosen does not take a linking vowel with regular stems. In the example in the next figure, however, there is the Plural Suffix -*k* that always

appears as a vowel + consonant string if attached to a word that ends in a consonant. The structure of the suffix proposed by this analysis is the following: it is made up of a VC string to whose consonant position a 'k' is linked, but whose V-position is empty.

Furthermore, it has a floating vowel which is a rounded mid vowel underspecified for any other melodic property, marked by an O. The first example (*kutyák* 'dog PL NOM') shows a word in whose Plural form LVL can be observed. The other two cases (*gázok* 'gas PL NOM' and *házak* 'house PL NOM') are examples of regular and Lowering Stems, respectively. In *gázok* the floating O occupies the vowel position and is articulated (as [o]). In *házak*, the difference is the floating element of the stem and, as it becomes associated to the suffix's empty vowel position, the O will remain stranded and unpronounced.

The order that specifies which elements will be linked at the end of the derivation and therefore be pronounced on the surface seems complicated at first sight. Some possible rules and principles are formulated in (2) and (3).

(2) Floating elements do not link to empty positions if that would create hiatus.
(3) If the stem has a floating vowel and the suffix has an empty vowel position, the floating stem vowel will associate to it.

However, these separate rules and conditions in (2) and (3) prove to be an unnecessary complication. If this autosegmental analysis is enriched by specifying the direction of mapping as left-to-right, these conditions are automatically formulated in a much simpler and more uniform way.

4.2 Vowel Harmony

In this approach the distinction between suffixes triggering LVL and those not triggering it is made on a purely structural basis. The only suffixes capable of triggering LVL begin with an empty vowel slot, to which the morpheme final low vowel of the stem can spread. As there is no domain boundary stipulated – not even in cases of suffixes like *-sÁg* that do not trigger LVL – there is no reason why Vowel Harmony would be blocked in any way. Therefore, in this analysis, there is no interaction between Vowel Harmony and Low Vowel Lengthening.

4.3 Pros and Cons

Probably the main strength of this theory is that it explains the alternation by a structural difference in the suffix and not the stem. Looking at the distribution of LVL, it

seems that whether it takes place or not depends much more on the suffix than on the stem (once the stem provides a potentially sufficient environment – i.e., it ends in a low vowel). On the other hand, suffixes seem to trigger or not trigger it arbitrarily. Therefore it only seems logical to suppose two different structure-types for the suffixes and not for the stems. Should this analysis prove right even if it is extended to the whole vowel system, the theory itself is capable of providing a simple but powerful solution to Low Vowel Lengthening. The question of LVL intervening in Vowel Harmony does not even arise in this analysis.

However, it is clearly a weakness of the theory that it has been created only with respect to the low vowels of Hungarian. Testing how this structure-system of suffixes works with the other vowels and consonants of Hungarian is a topic left for future research.

5. CONCLUSION

The arguments cumulated in this paper corroborate a lengthening approach to Hungarian Low Vowel Lengthening. Moreover, the phenomenon can be effectively analyzed as a lengthening process, which simultaneously satisfies both requirements established in Section 2. First, since it makes a marked structure in the suffix the reason for LVL, it explains why certain suffixes do not trigger it – non-triggering suffixes do not contain the suffix-initial empty V position. Second, the empty-V approach can also integrate the class of Lowering Stems in Hungarian by supposing that they contain a floating vowel, a frequent component in the analyses of these stems. Such floating segments can then be associated to the empty V position at the beginning of certain suffixes. However, further compatibility of the analysis with other phonological phenomena in Hungarian is yet to be investigated.

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Summary
LOW VOWEL "LENGTHENING" IN HUNGARIAN

This paper examined the topic of Low Vowel Lengthening in Hungarian, which is a term describing the short-long alternation that low vowels show. After an introduction of the vowel system and phonotactics of the language, two main criteria were identified that an analysis of LVL has to satisfy: (i) being able to explain suffixes that do not trigger LVL, yet interact with the stem and (ii) being a close-fitting model for other phenomena related to linking vowels, as well (the need for the latter rose from a functional motivation).

From the two possible groups of analyses (lengthening and shortening approaches), it was lengthening that proved to be a more suitable account for the phenomena. Examples of both were given with explanation and evaluation on the two criteria. Finally, the empty-V approach suggested in this paper was also tested against these criteria.

Keywords: Hungarian phonology, Low Vowel Lengthening, Lowering Stems, phonology

Povzetek
»DALJŠANJE« NIZKIH SAMOGLASNIKOV V MADŽARŠČINI

Članek obravnava daljšanje nizkih samoglasnikov v madžarščini, tj. pojav premenjavanja kratke in dolge oblike, ki nastopi pri nizkih samoglasnikih. V uvodu je predstavljen samoglasniški sestav in fonotaktična pravila jezika. Sledi opis dveh glavnih kriterijev, ki jima mora zadostiti analiza daljšanja nizkih samoglasnikov: i) analiza mora pojasniti pripone, ki ne sprožijo daljšanja kljub interakciji z osnovo; ii) analiza mora biti model za druge pojave, ki so sorodni s povezovalnimi samoglasniki.

Izmed dveh možnih pristopov k analizi pojava (daljšanje ali krajšanje) je daljšanje tisto, ki bolj uspešno razloži pojav. V članku sta podana oba pristopa skupaj z razlago in njunim vrednotenjem glede na zgoraj omenjena kriterija. Članek na podoben način obravnava tudi t.i. pristop ničtega samoglasnika.

Ključne besede: madžarska fonologija, daljšanje nizkih samoglasnikov, fonologija, osnove z nižanjem