

Hungarian Epenthetic Vowels

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1. Introduction

The purpose of this paper is to examine the status of the linking vowels of Hungarian inflectional and derivational suffixes. Linking vowels typically appear between stem-final consonants and certain consonant-initial suffixes, but are generally absent otherwise. I will argue that these vowels can indeed be taken to be epenthetic in most cases, though there are certain suffixes in which the vowel is present underlyingly. Previous treatments dealing in part with this issue and which also advocate in large part for an epenthetic analysis are Vágó (1980) and Kornai (1991). Details from previous analyses will be discussed, fleshed out in greater detail, and in some cases modified to fall in line with the current analysis.

I will demonstrate that there is a default quality of the epenthetic vowel. In cases in which default value is not realized, I suggest the quality of the vowel is determined lexically by the stem. I also give an explanation as to why a vowel deletion analysis is not satisfactory, while conceding its advantages.

This paper is organized as follows. Section 2 presents a brief overview of facts concerning the Hungarian vowel system, shows examples of derivational and inflectional suffixes on nouns, and summarizes the data to be discussed. In Section 3 the details of epenthetic vowel analysis are given and the apparent dichotomy between epenthesis in nouns and adjectives is discussed. Section 4 addresses a suffix which has a restricted range of epenthetic vowels and analyzes those vowels as underlying. Section 5 discusses

why the vowel deletion analysis is not optimal, but concedes what advantages can be found in it. Section 6 concludes the paper with ideas for further pursuits.

2. Hungarian phonology and morphology

The fourteen vowels of Hungarian consist of seven short-long pairs. These vowels are given in the Hungarian orthography in (1), and Hungarian orthography will be used throughout the paper unless otherwise explicitly mentioned.

(1)	<u>Short Vowels</u>		<u>Long Vowels</u>
	ü	i	u
	ö	e	ó
		a	á

While phonetically the two pairs e [ɛ] , é [e:] and a [a] , á [a:] differ in quality, they are only distinguished phonologically by their length. All other short-long pairs differ only in quantity, i.e. length, and not quality. The diagram given in (1) is only one way of illustrating the vowel system. An important point to realize is that the e/é pair of vowels function phonologically as both low and mid vowels. In a binary suffix such as the dative *-nak/-nek*, the vowel is determined by the front/backness of the stem, and hence /e/ acts as the low front vowel equivalent of the low back vowel /a/. Furthermore, a morphophonological process by which a stem-final low vowel is lengthened applies only to /e/ and /a/ (cf. Vágó 1980: p.7).

However, there too is evidence to justify that /e/ acts as a mid-vowel: /e/ participates with /o/ and /ö/ in a ternary alternation, such as is found in the allative case markers *-hoz/-hez/-höz*. The selection of the appropriate suffix alternate is determined as follows: *-hoz* follows back vowel stems, *-hez* after front stems in which the final vowel is

unrounded, and *-höz* after front vowel stems in which the final vowel is rounded. This has led some to suggest Hungarian has secondary labial vowel harmony (round vs. unround) in addition to the pervasive front/back harmony. Because /e/ acts as both a mid vowel and a low vowel, its exact status is not always clear¹, and hence most of the discussion in this paper regarding epenthesis will be given from the point of view of back vowels.

Hungarian morphologists often distinguish three types of suffixes: *jel*, *képző*, and *rag*. *Jel* suffixes are derivational suffixes and are affixed closest to the stem. Of the two types of inflectional suffixes, *rag* is most easily definable. There may be at most one *rag* suffix per word, it appears word-finally, and corresponds to case suffixes in the nominal system and person/number suffixes in the verbal paradigm². Plural and possessive suffixes are *képző* suffixes and appear after derivational suffixes but before the word-final *rag* suffix.

This brings us to the discussion of data concerning linking vowels. The data in (2) show one vowel-final noun and three consonant-final nouns in four different environments. By comparison of *család* and *kád*, we see that the phonetic environment cannot predict the quality of the linking vowel. Note that the linking vowel has consistently the same quality throughout the declension of a given stem – indeed, no stem can subcategorize for *-ak* in the plural but *-ot* in the accusative.

¹ An interesting idea to consider to avoid the mid/low paradox is to consider two underlying forms for the surface [e]. Such an analysis is not pursued, and I do not believe it doesn't bear on the issue of whether linking vowels are epenthetic or not.

² It appears that all nouns must have a *rag* suffix. For nouns in nominative case, this is taken to be a zero morpheme.

(2)	<u>Nom Pl</u>	<u>Acc Sg</u>	<u>Poss 1sg</u>	<u>Poss 2sg</u>
hajó 'ship'	hajó-k	hajó-t	hajó-m	hajó-d
kád 'tub'	kád-ak	kád-at	kád-am	kád-ad
család 'family'	család-ok	család-ot	család-om	család-od
kód 'code'	kód-ok	kód-ot	kód-om	kód-od

The plural, accusative, and 1st and 2nd person possessive suffixes can be regarded as quaternary suffixes – the four-way contrast *e/ö/a/o* is in part lexical and in part determined by vowel harmony. Nouns that take [a] as the linking vowel constitute a large but closed class, and Kornai refers to these nouns as lowering stems. Vágó lexically marks all lowering stems so that epenthetic-a is derived from epenthetic-o by having a minor-lowering rule³ which applies to stems lexically marked (Vágó, 1980: p.111). Evidence that 'o' is the default linking vowel is illustrated by the fact that all recent borrowings (that take back vowel harmony) will take epenthetic-o in single suffix constructions. Incidentally, historical linguistics tells us that in the past Hungarian words all ended in a final vowel. Given this knowledge, the plural suffix was likely a simple *-k*, and the loss of a word-final vowel constraint likely contributed to the current variation in the quality of the linking vowels.

Further evidence to morphologically distinguish lowering stems from regular, productive stems comes from the data in (3). No linking vowel is required for the accusative following a certain class of consonants. This supports the idea that [o] is truly epenthetic – it is only inserted to break up impermissible consonant clusters⁴.

³ There are problems with the formulation of minor lowering, as Kornai points out. The minor lowering rule necessarily overapplies to ternary suffixes. Hence for the noun *hölgy* 'lady', the correct form of the accusative *hölgyet* is derived with the incorrect allative **hölgyhez* (instead of *hölgyhöz*). This problem essentially has its source in the fact that /e/ acts simultaneously as both a phonologically low and mid vowel.

⁴ I want to suggest here that the class of consonants that can form a permissible coda with *-t* is made up largely of coronals. Thus the fact that *-k* must take an epenthetic vowel has nothing to do with its sonority

(3) After {j, l, r, n, ny, s, z, sz, zs}

	Epenthetic o			Epenthetic a	
	<u>Acc</u>	<u>Pl</u>		<u>Acc</u>	<u>Pl</u>
rokon 'relative'	-t	-ok	vászon 'linen'	-at	-ak
asztal 'table'	-t	-ok	hal 'death'	-at	-ak
baj 'trouble'	-t	-ok	vaj 'butter'	-at	-ak

Vágó handles these cases by assuming that epenthetic-o is deleted following a sonorant consonant that is either coronal or anterior using a rule called epenthetic vowel deletion (Vágó, 1980: p.62). Vágó's lowering rule that takes epenthetic o --> a in lowering stems would therefore apply before his rule of epenthetic vowel deletion so that the linking vowel [a] is not deleted in these cases.

The situation with a plural or possessive marker followed by the accusative case marker is a little more interesting. In this case, the linking vowel for the accusative is always epenthetic-a, regardless of the whether attached to a lowering stem or not.

(4)	<u>Pl Acc</u>	<u>Poss 1sg Acc</u>	<u>Poss 2sg Acc</u>
hajó 'ship'	hajó-k-at	hajó-m-at	hajó-d-at
kád 'tub'	kád-ak-at	kád-am-at	kád-ad-at
kód 'code'	kód-ok-at	kód-om-at	kód-od-at

Evidence concerning the nature of the linking vowel in the verbal paradigm is not nearly as cohesive or clear-cut as that found nouns. However, the verbal data in (5), taken with evidence in (4), suggest that the default linking vowel is *-o* immediately after the stem and *-a* in second position after the stem.

value, but rather its place of articulation. Note that, for example, an n-k coda is certainly permissible by the phonotactics of the language, but principles governing phonotactics and principles governing word formation need not coincide. Also, the idea from underspecification theory that coronals are the default place of articulation may be of interest here, if we assume the accusative marker is unspecified for place of articulation.

(5)	<u>áld</u> ‘bless’	<u>Present</u>	<u>Past</u>	<u>Conditional</u>
	1sg def	áld-om	áld-ott-am	áld-j-am
	1sg indef	áld-ok	áld-ott-am	áld-j-ak
	2sg def	áld-od	áld-ott-ad	áld-j-ad
	2sg indef	áld-asz	áld-ott-ál	áld-j-ál
	3sg indef	áld	áld-ott	áld-j-on
	2pl indef	áld-otok	áld-ott-atok	áld-j-atok
	3pl indef	áld-anak	áld-ott-anak	áld-j-anak

I want to suggest, however, that it is actually not the case that the position of an affix determines the quality of the linking vowel, and I will demonstrate this with a counter-example. Furthermore, several verb stem declensions which do not fit this generalization were omitted in (5). The difference in the linking vowel quality from suffix to suffix may actually be the result of historical accident and/or a violable constraint militating against two epenthetic vowels of the same quality adjacent on the vowel tier. A synchronic explanation will be pursued in the next section.

3. Epenthetic analysis

The idea I want to put forth is that each morpheme can potentially be lexically specified as a lowering morpheme. If a morpheme does indeed receive such a diacritical marking, any necessary vowel epenthesis by an immediately following affix will take a low vowel, if permitted by that suffix’s paradigm. Hence, to account for the forms in (4), I must assume that the plural marker and the first and second person singular possessive markers are diacritically marked as lowering morphemes.

If a morpheme may be either lexically marked or not, we should expect to find examples of affixal morphemes that do not license a low epenthetic vowel. There are indeed many, and one such example is the *-d* suffix which forms fractions from numbers.

In (6) below, after Kornai (1991), two of the four stems are marked as lowering. All four fraction forms take the default epenthetic-o with the accusative marker.

(6)	<u>Number</u>	<u>Fraction</u>	<u>Accusative</u>	<u>Fraction+Accusative</u>	<u>Gloss</u>
	három	hárm-ad	hárm-at	hárm-ad-ot	three
	nyolc	nyolc-ad	nyolc-at	nyolc-ad-ot	eight
	hat	hat-od	hat-ot	hat-od-ot	six
	ipszilon	ipszilon-od	ipszilon-ot	ipszilon-od-ot	y

This illustrates that it is not the position of the affix in the word which determines its epenthetic vowel's quality, but rather which morpheme the affix follows.

Interestingly, it seems that the default epenthetic vowel for adjectives is [a] and not [o]. According to Rounds (2001), *nagy* 'big' is one of only four Hungarian adjectives taking [o] as its epenthetic vowel. In (7), there is not reason to believe the plural and accusative markers used for nouns differ from those used for adjectives, and hence this suggests further that it is the preceding morpheme which determines the quality of the epenthetic vowel.

(7)	<u>Nom Pl</u>	<u>Acc Sg</u>	<u>Comparative</u>	<u>Adverb</u>
nagy 'big'	nagy-ok	nagy-ot	nagy-obb	nagy-on
vidám 'merry'	vidám-ak	vidám-at	vidám-abb	vidám-an
halk 'quiet'	halk-ak	halk-at	halk-abb	halk-an

The unity of the plural suffix is demonstrated in (8). It is still considered a lowering morpheme, even when affixed to adjectives.

(8)	<u>Pl Acc</u>
nagy	nagy-ok-at
vidám	vidám-ak-at
halk	halk-ak-at

The question arises as to why it would be the case that nouns and adjectives take different epenthetic vowels. There is no clear answer here, but consider the data in (9), which show that several adjectives derived from nouns take a low epenthetic vowel. Under the present analysis, these derivational morphemes are lexically marked as lowering. It might be the case that, by analogy, all non-derived adjectives also take the same epenthetic vowel.

(9)	<u>Singular</u>	<u>Plural</u>	<u>Gloss</u>	<u>Singular</u>	<u>Plural</u>	<u>Gloss</u>
	világ	világ-ok	world	világ-i	világ-i-ak	secular
	pont	pont-ok	point	pont-os	pont-os-ak	exact
	száj	száj-ak	mouth	nagyszáj-ú	nagyszájú-ak	big-mouthed

One alternative way to explain the dichotomy of epenthetic vowels is to mark nearly all adjectives in the lexicon as lowering stems. This is undesirable, as it would make the prediction that nonce and newly borrowed adjectives should take epenthetic-*o*, which is not the case. While it is not desirable to have a phonological system whereby multiple default epenthetic vowels are possible, this is certainly by no means unheard of in other languages.

An interesting consequence of having separate default epenthetic vowels is that distinctions can be made between homophonous forms. Consider the forms in (10).

(10)	<u>Singular</u>	<u>Plural</u>	<u>Gloss</u>
	farok	fark-ak	tail ⁵
	farkas	farkas-ak	having a tail
	farkas	farkas-ok	wolf
	ismer	-	know (verb)
	ismerős	ismerős-ek	familiar
	ismerős	ismerős-ök	acquaintance

⁵ The word for tail is considered a fleeting vowel stem. Not all fleeting vowel stems have *-o* as their fleeting vowel. This phenomenon will not be explored in this paper.

ház	ház-ak	house
házas	házas-ak	of the house
házas	házas-ok	married

In each case the meaning of the adjective seems to be compositional, while the noun has taken on a narrower meaning. Adjectives here take low epenthetic vowels and nouns mid epenthetic vowels. Hence no additional lexical marking is required to derive the plural forms – they are simply produced using the independently motivated rules of the grammar.

4. Exceptional Case

Up to this point we have not considered the superessive case marker, which is somewhat exceptional. Compare the forms in (11), where all linking vowels are ‘o’, with the forms in (2). Each stem takes epenthetic-o, regardless of whether it is a lowering stem.

(11)	<u>Superessive</u>	<u>Pl Superessive</u>	<u>Poss 1sg Superessive</u>
hajó 'ship'	hajó-n	hajó-k-on	hajó-m-on
kád 'tub'	kád-on	kád-ak -on	kád-am-on
kód 'code'	kód-on	kód-ok-on	kód-om-on

The superessive suffix is a ternary suffix with three alternates -on/-en/-ön, similar to the allative case suffix. It is therefore not expected to take a low epenthetic vowel, although one can question why it has been stipulated as a ternary vowel suffix. However, the only way to specify in the grammar that the suffix participates in the ternary system is to assume that the ternary vowel is present in the suffix underlyingly. This underlying vowel appears after consonant-final stems but is deleted after vowel final stems. In this

case the linking vowel is not epenthesized after a consonant-final stem, but rather deleted after vowel-final stems.

5. Against the deletion analysis

Aside from the superessive suffix, I have claimed that all linking vowels arise out of an epenthesis process. Here I will briefly sketch why the deletion analysis seems to miss certain generalizations. First of all, high vowels are never used as linking vowels. We might expect that if the vowels are present underlyingly we might see a wider range in quality. Second, if the vowel is present underlyingly, should it be assumed to be present in the stem or in the suffix? We have seen already in (2) and (4) that the same suffix can take different epenthetic vowels depending on what morphological material precedes it. This leaves the alternative that the vowel is underlyingly present in the stem (or the preceding morpheme). One would then be forced to explain why the final vowel is deleted, as Hungarian has no general process of final vowel deletion and in fact very much tolerates them.

To be fair, the differing quality of the underlying vowel in a deletion analysis could be explained by a lowering or raising rule (this rule would have to be sensitive to a lexical marking on the previous morpheme). Clearly, no analysis is going to get around lexically marking stems according to the linking vowel used. In this case, once again, the data in (3) becomes problematic – a stopgap measure such as Vágó's epenthetic vowel deletion rule is necessary.

The deletion analysis is also bolstered to some degree by the process of low vowel lengthening. The word *fa* 'tree' has a lengthened vowel in its accusative form *fát*. The added vowel length could result from an underlying form like /fa+at/.⁶

Ultimately, the deletion analysis is ruled out because, for both nouns and adjectives, there is an open class to which a productive epenthesis rule applies. Inserting information about this vowel into the lexical entry of a suffix necessarily misses an obvious generalization – the quality of the epenthetic vowel for newly-borrowed words is completely predictable! In general, redundant information should not be in the lexicon, but rather in the toolkit used by the grammar of a language.

6. Conclusions and extensions

Some interesting facts about Hungarian morphophonology have gone unexplored in this paper. The most striking to me is the lack of an epenthetic vowel after certain consonant-initial suffixes like *-tóll-től*, *-ban,-ben*, etc. One obvious explanation is that, unlike the monophonemic accusative and plural markers, these affixes come with their own syllabic material. Hence the consonant does not need to attach to the coda of the final syllable of the stem, but rather it can be syllabified into the following onset. But, then, why does the infinitive marker take an epenthetic low vowel, as in (12)?

(12)	<u>3 Sg Indef</u>	<u>Infinitive</u>	<u>Gloss</u>
	üt	üt-eni	hit
	vár	vár-ni	wait
	fest	fest-eni	paint

⁶ An interesting analysis that I chose not to pursue in this paper would be that low vowels are present underlyingly and that mid vowels are epenthetic. This would essentially require, for example, that a stem selects which accusative suffix to use: *-t* or *-at*. In addition to providing evidence for why we only see low vowel lengthening, this approach would have also had the advantage of helping with the analysis of the data in (3) – the lack of epenthetic vowels after sonorant coronals.

In summary, this paper has addressed the status of linking vowels in Hungarian to show they are in most cases epenthetic. This improves on Vágó's analysis by examining a wider range of data. An interesting idea to pursue is whether the research framework of optimality theory can shed any additional light on this subject, an idea that has apparently raised the interest of Jensen and Stong-Jensen (1995).

References

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