Vowel length in present-day spoken Hungarian

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1 Introduction

In the present paper we give a somewhat unorthodox analysis of the problem of vowel length in present-day spoken Hungarian. We shall concentrate on the "mainstream" educated colloquial speech of Budapest, and our treatment is phonological rather than phonetic. We shall claim that the traditionally recognized fully symmetric vowel system of seven short and seven corresponding long vowels (as still suggested by the spelling, e.g., *i–í, ö–ő*) is collapsing, giving way to a system where length is nondistinctive in high vowels, while it is replaced by quality differences in low (and possibly also in mid?) vowels.

A surface phonetic classification of the Hungarian vowel system is shown in (1):

(1)

	Front				Central	Back	
	Unrounded		Rounded		Unrounded	Rounded	
High	i	iː	ü	üː		u	uː
Upper Mid		eː		öː			oː
Lower Mid			ö			o	
Upper Low	ɛ					ɔ	
Lower Low					aː		

This classification involves five heights, three points of articulation along the sagittal axis, plus the rounded/unrounded distinction. Obviously, a number of phonetic details can be filtered out of this representation on grounds of predictability. The difference between upper mid and lower mid might be taken to be a matter of tense/lax (or, [+/−ATR]); but even that is predictable (redundant) on the basis of long vs. short (i.e., VV vs. V

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in terms of skeletal positions/timing slots). On the other hand, the two lows may be simply taken to be the same height phonologically: the exact height of [aː], as well as its centrality, is a matter of phonetic implementation since in the phonological pattern of Hungarian (e.g., with respect to vowel harmony, long/short alternations, etc.) [aː] behaves as a low back vowel. Hence, the simplified pattern in (2) emerges.

(2)

	[−**back**]				[+**back**]		
	[−**round**]		[+**round**]		[−**round**]	[+**round**]	
[+**high**, −**low**]	i	iː	ü	üː		u	uː
[−**high**, −**low**]		eː	ö	öː		o	oː
[−**high**, +**low**]	ɛ				aː	ɔ	

The system of Hungarian orthography, as well as traditional descriptions, suggest that these vowels constitute seven short/long pairs. For reference, the orthographic symbols for the above vowels are given in (3), arranged in the same way as in (2).

(3)

i	*í*	*ü*	*ű*		*u*	*ú*
	é	*ö*	*ő*		*o*	*ó*
e				*á*	*a*	

Two questions arise with respect to this traditional seven-pair classification. First, is vowel length contrastive in this language? Second, are all pairs symmetrical (differing in length only) as the spelling suggests or is the phonetic asymmetry shown in (2) phonologically valid? These and related issues will be considered in the present paper.

High vowels, as shown in (1), may differ in length without any quality difference; although fully satisfactory minimal pairs are not easy to find (for reasons detailed further below), the length contrasts *i*/*í*, *ü*/*ű*, *u*/*ú* appear to be uncontroversial. Some examples are given in (4).

(4)

a.	***i**nt*	'beckon'	***í**nt*	'tendon-acc.'
	*k**ü**rt*	'horn'	*k**ű**rt*	'free exercise-acc. [in skating]'
	*z**u**g*	'nook'	*z**ú**g*	'rumble'
b.	***i**rat*	'document'	***í**rat*	'write-caus.'
	*f**ü**lnek*	'ear-dat.'	*f**ű**lnek*	'they get hot'
	*sz**u**rok*	'tar'	*sz**ú**rok*	'I stab'

For mid rounded vowels, length distinctions always entail minor quality differences, but these can be abstracted away from as we saw above. Some minimal pairs are given in (5).

(5) a. ***tö**r* 'break' ***tő**r* 'dagger'
***po**r* 'dust' ***pó**r* 'peasant'
b. ***nö**vel* 'increase' ***nő**vel* 'with a woman'
***ko**ma* 'friend' ***kó**ma* 'coma'

The rest of the vowels—*é, e; á, a*—never contrast in length without differing in quality in nontrivial ways. Phonetically, they do not constitute long/short pairs; orthography is not relevant (except by mirroring the linguistic intuitions of those who first applied Latin script to Hungarian). Pairs like ***ke**n* 'smear'–***ké**n* 'sulphur', *v**a**ló* 'real'–*v**á**ló* 'divorcing' are proper minimal pairs showing that the highlighted vowels contrast in some feature(s), but they do not tell us if that feature is length or something else. Thus, we have to look beyond distributional facts and consider the phonological behaviour of these segments.

A number of stems exhibit length alternation in a nonfinal vowel when certain suffixes are added to them. Consider some examples in the plural and with the derivational suffix *-izál* '-ize', with high and mid vowels in (6a) and *é, e, á, a* in (6b). (Stem vowel shortening will be discussed more at length in section **3.2.**)

(6) Sg. Pl.
a. *v**í**z* –*v**i**zek* 'water' *anal**í**zis* 'analysis'–*anal**i**zál* 'analyse'
*t**ű**z* –*t**ü**zek* 'fire' *miniat**ű**r* 'miniature'–
*miniat**ü**rizál* 'miniaturize'
ú**t* –u**tak* 'road' ***ú**r* 'gentleman'–
***u**rizál* 'play the gentleman'
*t**ő*** –*t**ö**vek* 'stem' *paszt**ő**röz* 'pasteurize'–*paszt**ö**rizál* 'id.'
*l**ó*** –*l**o**vak* 'horse' *ag**ó**nia* 'agony'–*ag**o**nizál* 'agonize'
b. *k**é**z* –*k**e**zek* 'hand' *pr**é**mium* 'bonus'–
*pr**e**mizál* 'award a bonus'
*ny**á**r*–*ny**a**rak* 'summer' *kan**á**lis* 'canal'–*kan**a**lizál* 'canalize'

In the pairs in (6), the relation between members is the same throughout: the stem vowel "gets shortened." This suggests that the *é–e, á–a* relationships are the same as *í–i* and the others, that is, the former constitute long/short pairs as well. It would be a good idea to represent them identically (length apart). How exactly this can be done will be discussed in the following section (cf. (17) and (18)); see Siptár & Törkenczy (forthcoming) for a quite different approach.

2 Length and height

In the foregoing, we showed the 14 vowels arranged into 7 long/short pairs. However, length plays a different role in vowels of different heights.

2.1 High vowels

With respect to high vowels, the phonological value of length is rather vague in colloquial Hungarian (cf. Nádasdy 1985, Kassai 1991, Kontra 1995). Among other things, it depends on the position of the vowel within the word. Notice that the actual length of high vowels often diverges from what the spelling has codified. The words in (7) predominantly have a short vowel (in the highlighted position) in colloquial speech, even if with some individual vacillation (inter-speaker variability is indicated by %).

(7) %[i] *t**í**zes* 'number ten', *v**í**zi* 'water-adj.', *bizony**í**tvány* 'certificate', *sz**í**nész* 'actor', *t**í**pus* 'type', *preszt**í**zs* 'prestige', ...
%[u] *h**ú**ga* 'his sister', *r**ú**gás* 'a kick', *ny**ú**jt* 'stretch', *ágy**ú*** 'cannon', *hétkar**ú*** 'seven-armed', ...
%[ü] *gyűr**ű*** 'a ring', *gy**ű**szű* 'thimble', *nagyfej**ű*** 'big-headed', ...

Word final high vowels in polysyllabic words tend to be short in colloquial Hungarian. (In compounds, this applies if the last compound member is itself polysyllabic, hence words like *férc#m**ű*** 'hack work' are exempt.) This shortness is not affected by suffixation: high vowels are not lengthened before a suffix (cf. section **3.1**). In the following types of words, the highlighted vowel is usually short (always short for items not preceded by %):

(8) [i] *bul**i*** 'party', *bács**i*** 'uncle', *ház**i**as* 'house-proud', *hind**i**ül* 'in Hindi', *nén**i**vel* 'with auntie', ...
[ü] *esk**ü*** 'oath', %*rev**ü*** 'variety show', %*bet**ű*** 'letter', %*sűr**ű*** 'dense', %*sepr**ű**vel* 'with a broom', %*gyönyör**ű**ség* 'splendour', %*men**ü**ink* 'our set dinners', ...
[u] *kap**u*** 'gate', *any**u**t* 'mum-acc.', %*tan**ú*** 'witness', %*fi**ú**k* 'boys', %*szomor**ú**an* 'sadly', %*hossz**ú**ság* 'length', *ár**u**i* 'his goods', ...

In monosyllabic words, on the other hand, final high vowels are regularly long. (This is also true for last members of compounds, if monosyllabic.) There are a few exceptions to this generalization, with short [i]:

(9) [iː] ***sí*** 'ski', ***zrí*** 'shindy', ***pi*** 'π', ***mi*** 'mi', ***rí*** 'cry', ...
[i] ***ki*** 'who', ***ki*** 'out', ***mi*** 'we', ***mi*** 'what', ***ti*** 'you-pl.', ***ni*** 'look!'
[üː] ***fű*** 'grass', ***nyű*** 'maggot', ***mű*** 'work of art', ***tű*** 'pin', ...
[ü] —
[uː] ***bú*** 'sorrow', ***szú*** 'woodworm', *Q* [kuː], ...
[u] —

The exceptions are not easy to account for in purely phonological terms. The shortness of [i] in the interjection *ni* 'look!' can be ascribed to the phonological irregularity often characterizing interjections (cf. *no* 'well!', *pszt* 'hush'): this word can be left out of consideration. The rest (*ki, ki, mi, mi, ti*) are all function words; if we formulate the generalization with reference to the function word/content word distinction, our statement will be structure dependent. In sum, the distribution of word final long high vs. short high vowels can be characterized by the following redundancy rules:

$$\text{(10) a.}\ \begin{array}{c} {}^{*}\mathrm{VV} \\ \bigvee \\ [+\text{high}] \end{array} \Big/\ \mathrm{VC}_0\,\_\_\,] \qquad \text{b.}\ \begin{array}{c} {}^{*}\mathrm{V} \\ | \\ [+\text{high}] \end{array} \Big/\ [\mathrm{C}_0\,\_\_\,] \qquad \text{c.}\ \begin{array}{c} {}^{*}\mathrm{VV} \\ \bigvee \\ [+\text{high}] \end{array} \Big/\ [\mathrm{C}_0\,\_\_\,]_{\text{FUNCT}}$$

(10b) and (10c) are meant to be in an "elsewhere" relationship. If this is inappropriate for negative statements, (10b) has to be restricted to content words. With respect to (10a), there are three kinds of speakers of standard (Budapest) Hungarian. Advanced speakers strictly obey (10a). Conservative speakers who have long *ú*/*ű* where the spelling has one (and even consistently contrast forms like ***fiúk*** 'boys' vs. ***fiuk*** 'their son') have a more restricted version, shown in (11a). Finally, intermediate speakers have the redundancy rule (11a) plus an optional (rate/style-dependent) rule of shortening, (11b).

$$\text{(11) a.}\ \begin{array}{c} {}^{*}\mathrm{VV} \\ \bigvee \\ \begin{bmatrix} +\text{high} \\ -\text{round} \end{bmatrix} \end{array} \Big/\ \mathrm{VC}_0\,\_\_\,] \qquad \text{b.}\ \begin{array}{c} \mathrm{VV} \\ \bigvee\!\!\!\!\neq \\ [+\text{high}] \end{array} \Big/\ \mathrm{VC}_0\,\_\_\,]$$

There are no similar restrictions on the length of nonfinal high vowels (otherwise we would have allophones, rather than contrastive segments). In principle, the length of nonfinal high vowels is lexically given. However, in a large number of lexical items the length of high vowels vacillates, especially if the vowel is not in the last syllable: [i]~[iː] ***híradó*** 'news', ***Tibor*** ⟨proper name⟩; [ü]~[üː] ***hűvös*** 'cool', ***szüzek*** 'virgins'; [u]~[uː] ***púpos*** 'hunchback', *turista* 'tourist', *körút* 'boulevard'. It appears that the vacillation concerns "long" vowels (i.e., it is a case of variable shortening, rather than variable lengthening) since a number of words have invariable short high vowels (e.g., *liba* 'goose', *üveg* 'glass', *buta* 'stupid') but there is practically none in which a nonfinal high vowel would be invariably long.

In sum, for high vowels, the phonological validity of length is restricted in that it is predictable word finally and rather variable elsewhere. To use an old-fashioned term, length has little "functional load" in high vowels. (Many Hungarian typewriters have no key for long *í ú ű*, yet texts written on them are fully intelligible.)

2.2 Mid round vowels

Turning to mid rounded vowels, their length is more relevant, distinguishing many minimal pairs (cf. (5)). There are, again, words whose phonological shape is not appropriately represented by the spelling, but variability is far less pervasive than for high vowels. A few examples are given in (12).

(12) %[oː] *árboc* 'mast', *tolni* 'to push', *posta* 'post office', *Korea*
%[o] *óvoda* 'nursery school', *kórház* 'hospital', *-tól* 'from', *-ból* 'out of', *-ról* 'about'
%[öː] *körút* 'boulevard', *ördöngös* 'diabolical', *fövő* 'boiling'
%[ö] *őrs* 'sentinel', *bölcsőde* 'crèche', *őrjöng* 'rave', *-től* 'from', *-ből* 'out of', *-ről* 'about'

Word finally, mid rounded vowels can only be long. This generalization is watertight, and applies to loanwords and foreign names as well, e.g., *presto* [prɛstoː], *Cocteau* [koktoː], *pas de deux* [pɔdödöː]. (There is a single exception: the interjection *(no)no* 'come! come!'. We can disregard it, just like we did for *ni* 'look!'.) The redundancy rule concerned is non-structure-dependent (and obligatory), hence more obviously phonological in nature than those under (10) above.

(13)
$$\begin{array}{c} {}^{*}\mathrm{V} \;/\; \_\_\,] \\ | \\ \begin{bmatrix} -\text{high} \\ -\text{low} \\ +\text{round} \end{bmatrix} \end{array}$$

Apart from word final position, *o–ó* and *ö–ő* carry a phonologically valid length distinction. However, comparatively few morphemes exhibit a length alternation between [o] and [oː] and especially between [ö] and [öː] (cf. (6), (25), (31)).

2.3 Nonhigh nonround vowels

The single nonround mid vowel, [eː], differs considerably from its putative short "counterpart", [ɛ]. Both occur word finally (*balhé* 'fuss', *kefe* 'brush'), and they are often involved in length alternations (*kéz* 'hand'–*kezek* 'pl.', *kefe* 'brush'–*kefét* 'acc.'). Hence, although its height is identical with that of *o, ó, ö, ő,* the vowel *é* does not belong with them phonologically. What, then, is the feature that tells it apart from them? At first glance, [−round] is a likely candidate; but then all the other rounded wowels (*ű–ü, ú–u, a*) should behave like *ó–o, ő–ö* in the above respects, which is not the case.

The other possibility is to consider the midness of [eː] a matter of phonetic implementation and take this vowel to be underlyingly low. Its surface shape is then due to the following raising rule:

(14)
$$\begin{array}{c} \mathrm{VV} \\ \bigvee \\ [-\mathrm{back}] \end{array} \quad \rightarrow \quad [-\mathrm{low}]$$

Notice that we need not expressly specify [eː] as a low vowel in order for this solution to work. Instead, we could take the feature [low] to be phonologically redundant (for front vowels at least). The front half of (2) could then be simplified as in (15) and the specification of all values of [low] would be left for the phonetic implementation module.

(15)

	[−**back**]			
	[−**round**]		[+**round**]	
[+**high**]	i	iː	ü	üː
[−**high**]	ɛ	eː	ö	öː

Keeping this possibility in mind, we will go on referring to the set *e, é, a, á* as "low vowels" for the present purposes. With respect to this set, length distinctions carry substantial functional load: minimal pairs can be found in large numbers (***ha**t* 'six' vs. ***há**t* 'back', *sertés* 'pig' vs. *s**é**rtés* 'offence'). No discrepancy is found between spelling and standard pronunciation; forms like *%*pl**e**bános* (for *pl**é**bános* 'parson'), *%*véc**e*** (for *véc**é*** 'toilet'), *%*gimn**á**zista* (for *gimn**a**zista* 'grammar-school pupil'), *%*Szt**a**lin* (for *Szt**á**lin* 'Stalin') are either obsolete or substandard.

On the other hand, quality differences between members of these pairs are larger than in any other case. [ɔ] and [aː] or [ɛ] and [eː] are phonetically distinct qualities that are forced into pairs by the phonological system (witness alternations like stem vowel shortening (6) or low vowel lengthening (19)). The "length" opposition of low vowels is actually based on quality: no matter how much an *á* is phonetically shortened, it will never become *a.* For instance, the *á* in *világbajnokság* 'world championship' may be as short as any short vowel, but never **vil*[ɔ]*g-*. It is not the case that "length" oppositions are eliminated or made vague (as with high vowels); the question is whether these oppositions should be analysed as quality oppositions between [ɔ], [a], [ɛ], [e] with length as a concomitant feature or as length oppositions with surface quality deviations. We will take the second option: but notice that the first would not be totally unfounded or incoherent.

The low vowels are not restricted in their occurrence word finally as high and mid vowels are:

(16)	a.	*mell**e*** 'his breast'		*mell**é*** 'beside him'	
		*tév**e*** 'being put'		*tév**é*** 'television'	
		le 'down'		***lé*** 'liquid'	
	b.	*látn**a*** 'he would see'		*látn**á*** 'he would see it'	
		*hozz**a*** 'he brings it'		*hozz**á*** 'to it'	
		fa 'tree'		***fá*** 'fa'	

Interestingly, final *-á* practically only occurs in function words, suffixes and abbreviations, although in those domains quite frequently, e.g., ***rá*** 'onto it', ***alá*** 'to below it', *-**ná*** 'would', *-**vá*** (translative case ending). A few nouns can also be cited like *burzso**á*** 'bourgeois', *hajr**á*** 'a rush', as well as acronyms ending in *H, K, Á* like *ZH* [zeːhaː] 'written examination' or *GMK* [geːɛmkaː] 'enterprise cooperative'. This distribution is peculiar, but phonologically not characteristic enough for us to claim that word final *-á* is restricted in its occurrence.

Given that we decided to ignore quality differences between [ɛ]–[eː] and [ɔ]–[aː], the question now arises of how to represent them as identical (length apart). For [ɛ]–[eː] we suggested in (15) that [low] should be suppressed as a contrastive feature. If we want to do the same with respect to [ɔ]–[aː], we have to subscribe to the generative tradition (going back to Szépe 1969) that takes [ɔ] to be underlyingly nonround, its surface roundness being due to a late adjustment rule. In that case, using the symbols /a/ and /e/ for the phonological segments underlying [ɔ] and [ɛ] respectively, we would have the following system:

(17)

	[−**back**]				[+**back**]			
	[−**round**]		[+**round**]		[−**round**]		[+**round**]	
[+**high**]	i	iː	ü	üː			u	uː
[−**high**]	e	eː	ö	öː	a	aː	o	oː

Alternatively, we could keep [low] for back vowels but suppress [round] since it is fully predictable for back vowels. This would give us identical representations for /a/ and /aː/ without claiming that [ɔ] starts out as unrounded. Thus, all lowness specifications for front vowels and all roundness specifications for back vowels could be added in a fill-in (structure building) fashion and no structure changing operations would be involved. The drawback of this solution is that four, rather than three, underlying features are used to specify seven vowel qualities:

(18)

	[−**back**]				[+**back**]			
	[−**round**]		[+**round**]		[−**low**]		[+**low**]	
[+**high**]	i	iː	ü	üː	u	uː		
[−**high**]	e	eː	ö	öː	o	oː	a	aː

3 Length alternations

Vowel length alternations are governed by two types of regularities: Final Low Vowel Lengthening (LVL) and Stem Vowel Shortening (SVS). In the following subsections we will look at these.

3.1 Final Low Vowel Lengthening (LVL)

We saw that the occurrence of word final low vowels is not phonologically restricted (even if *á* occurs with certain limitations). But morpheme final low vowels are subject to an important condition: they have to be long before a suffix. This means that short final low vowels get lengthened before suffixes (cf. Vago 1978, 1980 : 3–4, Abondolo 1988 : 43, Jensen & Stong-Jensen 1989, Olsson 1992 : 75–76, Nádasdy & Siptár 1994 : 67–70). Examples:

(19) /a/→/aː/	*f**a***	'tree'	*f**á**t*	'tree-acc.'
	*alm**a***	'apple'	*alm**á**s*	'apple (adj.)'
	*tartj**a***	'he holds it'	*tartj**á**k*	'they hold it'
	*ház**a***	'his house'	*ház**á**n*	'on his house'
	*létr**a***	'ladder'	*létr**á**m*	'my ladder'

	*marh**a***	'cattle'	*marh**á**i*	'his cattle (pl.)'
	*kuty**a***	'dog'	*kuty**á**ul*	'like a dog'
	*delt**a***	'delta'	*delt**á**ig*	'as far as the delta'
	*Varg**a***	⟨last name⟩	*Varg**á**né*	'Mrs V.'
	*port**a***	'reception'	*port**á**ra*	'to reception'
	*lust**a***	'lazy'	*lust**á**bb*	'lazier'
/e/→/eː/	*medv**e***	'bear'	*medv**é**t*	'bear-acc.'
	*ep**e***	'bile'	*ep**é**s*	'bilious'
	*vitt**e***	'he carried it'	*vitt**é**k*	'they carried it'
	*kép**e***	'his picture'	*kép**é**n*	'in his picture'
	*ves**e***	'kidney'	*ves**é**m*	'my kidney'
	*sört**e***	'bristle'	*sört**é**i*	'his bristles'
	*mérc**e***	'measure'	*mérc**é**ül*	'as a measure'
	*csemp**e***	'tile'	*csemp**é**ig*	'up to the tile'
	*Ben**e***	⟨last name⟩	*Ben**é**né*	'Mrs B.'
	*est**e***	'evening'	*est**é**re*	'by evening'
	*feket**e***	'black'	*feket**é**bb*	'blacker'

This alternation is independent of the word class membership of the stem and it does not matter whether the final low vowel is part of the stem (*alm**a*** 'apple') or of some suffix (*tartj**a*** 'he holds it'). The process is also insensitive to what segment the following suffix begins with. Our first approximation to this rule is (20).

(20)
$$\begin{array}{c} \mathrm{V} \\ | \\ [+\mathrm{low}] \end{array} \rightarrow \begin{array}{c} \mathrm{VV} \\ \vee \\ [+\mathrm{low}] \end{array} \quad / \;\_\_\,]\ \mathrm{X}$$

where] = morpheme boundary, X = the first segment of a suffix

Of course, long final low vowels do not change as they do not satisfy the structural description of this rule (they conform to the required output configuration): *kord**é*** 'cart'–*kord**é**t* 'cart-acc.', *burzso**á*** 'bourgeois'–*burzso**á**t* 'bourgeois-acc.'.

One word form will be input to LVL as many times as it contains the appropriate input configuration:

(21)	*óra*	'watch'	*mese*	'tale'
	*ór**á**ja*	'his watch'	*mes**é**je*	'his tale'
	*óráj**á**t*	'his watch-acc.'	*meséj**é**t*	'his tale-acc.'

Recall that other vowel heights are not affected by a similar rule: mid vowels are always long word finally (cf. (13)), whereas the length of final high vowels depends on the length (number of syllables) of the word and/or its word class membership (cf. (11)), but if they are short, they remain short (cf. (8)). Hence, the formulation of LVL does not have to refer to the feature [low]: it can be reformulated as in (22). Notice that the rule is now appropriate to the vowel systems of both (17) and (18) and captures exactly the right generalization in terms of either system.

(22) $$\begin{array}{c} \mathrm{V} \\ | \\ [-\text{high}] \end{array} \rightarrow \begin{array}{c} \mathrm{VV} \\ \vee \\ [-\text{high}] \end{array} \Big/ \ \_\_\,]\ \mathrm{X}$$

There are apparent counterexamples where something is added to a low-vowel-final lexical item and the vowel remains short.

(23)	a.	*balt**a**nyél*	'hatchet handle'	*kef**e**kötő*	'brush-maker'
		*haz**a**megy*	'go home'	*bel**e**lép*	'step into it'
	b.	*kuty**a**szerű*	'dog-like'	*mes**e**szerű*	'like a fairy tale'
		*macsk**a**féle*	'feline'	*medv**e**féle*	'bear-like'
	c.	*távozt**a**kor*	'on his departure'	*megérkezt**e**kor*	'on his arrival'
		*tort**a**ként*	'as a cake'	*sört**e**ként*	'as bristles'
		*péld**a**képp(en)*	'as an example'	*mérc**e**képp(en)*	'as a measure'
		*haz**a**i*	'domestic'	*megy**e**i*	'county (adj.)'

In (23a) we find compounds (incuding preverb + verb combinations); in (23b) the elements *-szerű* and *-féle* are enclitics (intermediate items between a full compound member and a derivational suffix); the suffixes in (23c) are unary suffixes with respect to vowel harmony (one way to account for this is to claim that they, too, are outside the harmonic domain of the stem). Hence, in Lexical Phonology terms, rule (22) is a cyclic (presumably level 2) lexical rule, whereas compounding, encliticization, and the addition of the suffixes appearing in (23c) are all postcyclic (presumably level 3) operations. (If this turns out to be correct, X can be omitted from the environment of the rule.) Notice that the lack of vowel harmony is supporting evidence with respect to *-kor* but not for *-i, -ként* and *-képp(en)*: these would be unary anyway as they contain a transparent vowel. On the other hand, the multiplicative suffix *-szor/szer/ször* 'times' does harmonize but does not trigger LVL (although it cannot cooccur with many low-vowel-final stems, perhaps the only instances are names of Greek letters in mathematics, e.g., *lambd**a**szor* 'lambda times, multiplied by lambda', not **lambd**á**szor*).

3.2 Stem Vowel Shortenings

In many Hungarian stems, the vowel (or one of the vowels) is shortened before certain suffixes: *k**é**z* 'hand'–*k**e**zek* 'hands', *szint**é**zis* 'synthesis'–*szint**e**tikus* 'synthetic'. This phenomenon will be referred to as Stem Vowel Shortening (SVS). We had a preview of the data in (6); now we will take a closer look at them (cf. Vago 1980 : 121ff, Abondolo 1988 : 46, Jensen & Stong-Jensen 1989, Olsson 1992 : 123f, Nádasdy & Siptár 1994 : 70–78). Compare the behaviour of the following examples:

(24) a.	*gép*	'machine'	*gépen*	'on ...'	*gépek*	'pl.'
	kéz	'hand'	*kézen*	'on ...'	*k**e**zek*	'pl.'
b.	*akadémia*	'academy'	*akadémiák*	'pl.'	*akadémikus*	'academic'
	szintézis	'synthesis'	*szintézisek*	'pl.'	*szint**e**tikus*	'synthetic'

It appears that this is not a purely phonological rule since SVS only applies to certain stems (*kéz, szintézis*) and not to others (*gép, akadémia*); also, certain suffixes may trigger SVS (*-ek, -ikus*), others never do (*-en*). (24a–b) also suggests that SVS has two different domains of application: we call them Final Stem Vowel Shortening (FSVS) and Internal Stem Vowel Shortening (ISVS), respectively. The phonological content of both is the same: a long vowel (which is not the last segment of the stem) is replaced by its short counterpart; the conditions of the two rules, i.e., the stems and suffixes concerned, are different.

Note that high-vowel examples are mostly vacillating (due to the general vagueness of length in high vowels, see above): *strukturális* 'structural' [u]~[uː]. This complication will be ignored, except for cases where the form suggested by the spelling never occurs (e.g., *v**í**zi* 'water (adj.)' [i]). Spelling is, again, often misleading: in the triplet *m**í**tosz* 'myth' [iː]–*m**i**tikus* 'mythical' [iː]–*m**i**tológia* 'mythology' [i], the second form does not exhibit SVS but this (irregular) state of affairs is not reflected in writing: the stem *mít-* is treated in orthography as if it were a fully regular SVS stem.

3.2.1 Final-Syllable Stem Vowel Shortening (FSVS)

FSVS exclusively applies in final syllables of mono- and bisyllabic stems. The target vowel is followed by a single consonant (or an empty consonant slot that gets interpreted as [v] precisely when SVS has applied, otherwise it goes uninterpreted: *l**ó*** 'horse'–*l**o**vak* 'horses'). FSVS is primarily attested in nouns; in the conjugation system it is sporadic (e.g., *l**ő*** 'shoot'–*l**ö**vök* 'I shoot'); some verb stems shorten before derivational suffixes (e.g., ***ú**szik* 'swim'–***u**szoda* 'swimming-pool') but this is also infrequent.

In (25) all shortening nominal stems are listed. Vacillation is not widespread; *nyű*, *szú* and *lég* rarely occur suffixed, their behaviour is uncertain.

(25) **Vowel**	**Monosyll. stems**		**Monosyll. -*v*-stems**		**Bisyllabic stems**	
í	*híd*	'bridge'	—		—	
	ín	'tendon'				
	nyíl	'arrow'				
	víz	'water'				
ű	*szűz*	'virgin'	*fű*	'grass'	—	
	tűz	'fire'	(*nyű*	'maggot')		
ú	*kút*	'well'	(*szú*	'woodworm')	—	
	lúd	'goose'				
	nyúl	'rabbit'				
	rúd	'pole'				
	úr	'gentleman'				
	út	'road'				
ő	—		*cső*	'pipe'	—	
			kő	'stone'		
			tő	'stem'		
ó	—		*ló*	'horse'	—	
é	*kéz*	'hand'	*lé*	'liquid'	*egér*	'mouse'
	réz	'copper'			*szekér*	'cart'
	mész	'lime'			*tenyér*	'palm'
	ész	'mind'			*kenyér*	'bread'
	szén	'coal'			*gyökér*	'root'
	név	'name'			*levél*	'leaf'
	légy	'fly'			*kötél*	'rope'
	ég	'sky'			*fedél*	'lid'
	jég	'ice'			*fenék*	'bottom'
	(*lég*	'air')			*kerék*	'wheel'
	hét	'week'			*cserép*	'tile'
	tér	'square'			*közép*	'middle'
	dér	'frost'			*szemét*	'rubbish'
	ér	'vein'			*elég*	'enough'
	bél	'bowels'			*veréb*	'sparrow'
	nyél	'handle'			*nehéz*	'heavy'
	fél	'half'			*tehén*	'cow'
	szél	'wind'			*fazék*	'pot'

	dél	'noon'		*der**é**k*	'waist'
	tél	'winter'			
	*l**é**l(e)k*	'soul'			
á	*nyár*	'summer'	—	*mad**á**r*	'bird'
	sár	'mud'		*szam**á**r*	'donkey'
				*ag**á**r*	'greyhound'
				*bog**á**r*	'beetle'
				*kos**á**r*	'basket'
				*mocs**á**r*	'marsh'
				*mozs**á**r*	'mortar'
				*poh**á**r*	'glass'
				*sug**á**r*	'ray'
				*sud**á**r*	'lash'
				*kan**á**l*	'spoon'
				*fon**á**l*	'thread'
				*dar**á**zs*	'wasp'
				*par**á**zs*	'embers'

FSVS primarily affects low (nonhigh nonround) vowels (*á, é*), less frequently high vowels (*í, ú, ű*), while mid (nonhigh round) vowels (*ó, o*) shorten in a few irregular (*v*-inserting) stems only. (Even more irregular types like ***tó*** 'lake'–***ta**vak* 'lakes', ***hő*** 'heat'–***he**ve* 'its heat' will be ignored here; these show vowel quality alternation in addition to shortening and are too sporadic to be treated phonologically.) *Lélek* 'soul' is peculiar in that its affected vowel appears not to be in the last syllable. But the e that follows is epenthetic and fails to appear precisely before FSVS suffixes (*lelk-em* 'my soul') thus *lélk-* is in fact a monosyllabic stem (having the surface alternants *lélek* and *lelk-*). But then what is peculiar about it is that the target vowel is followed by two consonants rather than one.

Let us note here that all FSVS stems listed in (25) are "lowering stems" (cf. Vago 1980 : 110–112, Olsson 1992 : 116–118, Törkenczy 1992, Kornai 1994 : 30–47, Nádasdy & Siptár 1994 : 155–159). That is, they all require a (linking) vowel before the accusative suffix (*vizet* 'water-acc.', *egeret* 'mouse-acc.', even though **vízt/*vizt, *egért/*egert* would be phonotactically well-formed), and the back linking vowel they take is /a/, rather than /o/ (e.g., *nyar-ak* 'summers', *nyul-am* 'my rabbit').

We are not going to give an exhaustive list of FSVS suffixes, but a few examples are listed in (26).

(26)

		'water'	'horse'	'hand'	'spoon'
-k	(plural)	*vizek*	*lovak*	*kezek*	*kanalak*
-t	(accusative)	*vizet*	*lovat*	*kezet*	*kanalat*
-m, …	(possessive)	*vizem*	*lovad*	*keze*	*kanalunk*
-s	(adjective)	*vizes*	*lovas*	*kezes*	*kanalas*
-z	(verb)	*vizez*	*(kövez)*	*kezez*	*kanalaz*
-l	(verb)	*vizel*	*loval*	*kezel*	*(fenekel)*
-cska	(diminutive)	*vizecske*	*lovacska*	*kezecske*	*kanalacska*
-nként	(distributive)	*(utanként)*	*lovanként*	*(hetenként)*	*kanalanként*
		('road')	('stone')	('week')	('bottom')

Another FSVS distributive suffix is *-nta/nte* (*nyaranta* 'each summer', *hetente* 'each week'). Similar but more or less isolated examples are: *t**í**z* 'ten'–*t**i**zed* 'one-tenth', *h**ú**sz* 'twenty'–*h**u**szadik* 'the twentieth', *n**é**gy* 'four'–*n**e**gyven* 'forty', *zs**í**r* 'fat'–*zs**i**radék* 'fats', etc. High vowels exhibit FSVS-like behaviour in a number of other stems but not for all speakers and not with all of the above suffixes: *sz**í**n* 'colour'–*sz*[i]*nek* 'colours', *h**ú**s* 'meat'–*h*[u]*sos* 'meaty'; also with suffixes not normally triggering FSVS: ***ú**t* 'road'–[u]*ti* 'road (adj)', *t**ű**z* 'fire'–*t*[ü]*zön* 'on the fire', *v**í**z* 'water'–*v*[i]*zi* 'water (adj)'.

Verb stems exhibiting FSVS effects, primarily before derivational suffixes, include the following: ***í**r* 'write'–***i**rat* 'document', *sz**í**v* 'suck'–*sz**i**vattyú* 'pump', *t**ű**r* 'tolerate'–*t**ü**relem* 'patience', *b**ű**n* 'crime'–*b**ü**ntet* 'punish', *sz**ú**r* 'stab'–*sz**u**rony* 'bayonet', *b**ú**jik* 'hide'–*b**u**jkál* 'lie low', *h**ú**z* 'pull'–*h**u**zat* 'draught', *r**ú**g* 'kick'–*r*[u]*gás* 'a kick', ***ú**szik* 'swim'–***u**szoda* 'swimming-pool', ***ó**v* 'protect'–[o]*voda* 'nursery school', *sz**ő*** 'weave'–*sz**ö**vet* 'cloth', *v**á**g* 'cut'–*v**a**gdal* 'chop up' etc. Note that most of these cases involve high vowels.

There are various ways to account for FSVS. The simplest would be to refer the whole thing outside phonology (into morphology) and assume that arbitrary lexical diacritics are attached to both FSVS stems and FSVS suffixes (this is what traditional grammar does in effect). Then the rule would refer to these diacritics:

$$(27)\quad \underset{\bigvee}{\text{VV}} \to \underset{|}{\text{V}} \;\Big/\; \_\_\,\text{C}]_{\text{FSVS stem}}\ \text{X}]_{\text{FSVS suffix}}$$

(Note that nothing actually forces us to take the long vowel as basic; some descriptions take the short form to be underlying — e.g., *nyár* 'summer' /nʸar-/ —, calling the stems concerned "lengthening stems", and positing a rule that does the opposite of (27).)

However, it is also possible (and perhaps desirable, though opinions differ) to treat the phenomenon within the phonology; i.e., to posit distinct underlying shapes for *nyár* 'summer' (shortening) and *gyár* 'factory' (non-shortening) and let the shortening effect fall out automatically. The orthodox generative solution would be to posit distinct underlying segments for the two [aː]'s (and similarly for all other long vowels). This would involve excessive use of abstractness and absolute neutralization. The current alternative is a non-linear solution where the two stem types have identical underlying vowels but length is represented in two different manners. On the skeletal tier both stem types will be represented as CVVC, and on the melodic tiers our two examples will be /nʸar/ and /dʸar/, respectively. The difference lies in the associations. Several solutions are possible (depending on the principles of association — whether association lines in general are assumed to be underlyingly there, introduced by universal principles or by language specific rules, or any combination of these). Let us consider a relatively straightforward account here. In *gyár,* all skeletal slots are underlyingly associated to some melodic material (28a), whereas *nyár* contains an empty vowel slot (28b). The melodic content of the preceding V slot may spread onto this empty V (28c) unless a deletion rule like (29) removes the latter before spreading had a chance to apply. The resulting representation, (28d), will then surface as [nʸɔr].

(28)	a.	b.	c.	d.
	C VV C	C V V C	C V V C	C V C
	dʸ a r	nʸ a r	nʸ a r	nʸ a r
	'factory'	'summer'	*nyár*	*nyar-*

(29) $V \rightarrow \emptyset$ / __C] X] (where X is a FSVS suffix)

Is there a way to characterize FSVS suffixes phonologically, too? It would seem that all such suffixes have one thing in common: they are vowel-initial (or rather, they all attach to the stem with what is known as a linking (epenthetic) vowel; cf. Törkenczy 1992 for further discussion). If this turns out to be true, we could replace the environment of our rule, be it formulated as (27) or as (29), by (30):

(30) / __C] V

However, a number of vowel-initial suffixes do not trigger FSVS: *ny**á**r-on* 'in summer', *k**é**z-i* 'manual', *gyök**é**r-ig* 'to the root', *v**í**z-ért* 'for water', *kos**á**r-ul* 'as a basket', *szam**á**r-é* 'belonging to a donkey'. Granted; but most of these have nonepenthetic initial vowels that appear after vowel-final stems as well: *nő-i* 'feminine', *nő-ig* 'as far as the woman', *nő-ért* 'for a woman', *nő-ül* 'as a woman', *nő-é* 'belonging to a woman'—cf. *nő-k* 'women', *nő-s* 'married', *nő-m* 'my wife' etc. Hence, (30) should be restricted to epenthetic (technically: empty) V's. The only remaining problem is the suffix *-on* 'on': this suffix fails to trigger FSVS (*ny**á**r-on* 'in summer', not **ny**a**ron*) but attaches to vowel-final stems in a vowelless form: *nő-n* 'on a woman'. Given that this suffix behaves as a nonepenthetic-vowel-initial suffix with respect to lowering stems in general (cf. Nádasdy & Siptár 1994 : 159–162), its failure to trigger FSVS comes as no surprise; what remains to be understood is that its vowel deletes after a stem-final vowel.

3.2.2 Internal-Syllable Stem Vowel Shortening (ISVS)

The other type of stem vowel shortening, ISVS, may affect any syllable of the stem, and vowels of any tongue height may be equally involved. This type of shortening is only triggered by derivational suffixes, never by inflections. (Both stems and suffixes that are involved here are usually comparatively recent loanwords of Latin origin or behaving in a "latinate" manner; this is why *ő* and *ű* hardly participate in this process.) Since there are large numbers of ISVS stems, only examples are given here:

(31)	**í**	*anal**í**zis*	'analysis'	*anal**i**tikus*	'analytical'
		*akt**í**v*	'active'	*akt**i**vitás*	'activity'
		*v**í**zió*	'hallucination'	*v**i**zionál*	'hallucinate'
		*m**í**tosz*	'myth'	*m**i**tológia*	'mythology'
		*mot**í**vum*	'motive'	*mot**i**vál*	'motivate'
		*st**í**lus*	'style'	*st**i**láris*	'stylistic'
	ű	*miniat**ű**r*	'miniature'	*miniat**ü**rizál*	'miniaturize'
	ú	*kult**ú**ra*	'culture'	*kult**u**rális*	'cultural'
		*m**ú**zeum*	'museum'	*m**u**zeológus*	'museologist'
		*f**ú**zió*	'fusion'	*f**u**zionál*	'merge'
		***ú**r*	'gentleman'	***u**rizál*	'play the gentleman'
	o	*paszt**ő**röz*	'pasteurize'	*paszt**ö**rizál*	'pasteurize'
	ó	*peri**ó**dus*	'period'	*peri**o**dikus*	'periodical'
		*hist**ó**ria*	'story'	*hist**o**rizmus*	'historism'
		*par**ó**dia*	'parody'	*par**o**dizál*	'take sy off'
		*filoz**ó**fia*	'philosophy'	*filoz**o**fál*	'philosophize'
		*k**ó**dex*	'codex'	*k**o**difikál*	'codify'

é	*pr**é**mium*	'bonus'	*pr**e**mizál*	'award a bonus'
	*t**é**ma*	'topic'	*t**e**matika*	'set of topics'
	*h**é**rosz*	'hero'	*h**e**roizmus*	'heroism'
	*mat**é**ria*	'matter'	*mat**e**riális*	'material (adj.)'
	*szint**é**zis*	'synthesis'	*szint**e**tikus*	'synthetic'
	*sum**é**r*	'Sumerian'	*sum**e**rológus*	'Sumerologist'
	*szuver**é**n*	'sovereign (adj.)'	*szuver**e**nitás*	'sovereignty'
	*analfab**é**ta*	'illiterate person'	*alfab**e**tikus*	'alphabetical'
	*kl**é**rus*	'clergy'	*kl**e**rikális*	'clerical'
á	*m**á**jus*	'May'	*m**a**jális*	'May Day picnic'
	*ban**á**lis*	'banal'	*ban**a**litás*	'banality'
	*eleg**á**ns*	'elegant'	*eleg**a**ncia*	'elegance'
	*n**á**ció*	'nation'	*n**a**cionalizmus*	'nationalism'
	*szl**á**v*	'Slavonic'	*szl**a**vista*	'Slavist'
	*priv**á**t*	'private (adj.)'	*priv**a**tizál*	'privatize'
	*diplom**á**cia*	'diplomacy'	*diplom**a**tikus*	'diplomatical'
	*kur**á**tor*	'trustee'	*kur**a**tórium*	'board of trustees'
	*plak**á**t*	'poster'	*kiplak**a**tíroz*	'post'
	*m**á**gnes*	'magnet'	*m**a**gnetikus*	'magnetic'

Some of the forms belonging here vacillate, i.e., may fail to undergo ISVS: %*m*[iː]*tikus,* %*t*[uː]*rista,* %*perif*[eː]*riális,* %*pol*[eː]*mikus,* etc; others are obsolete with the long vowel: *%*filoz*[oː]*fál,* *%*gimn*[aː]*zista,* *%*p*[aː]*tróna,* etc.

The major derivational suffixes triggering ISVS are *-ista* '-ist', *-izál* '-ize', *-izmus* '-ism', *-ikus* '-ic', *-atív* '-ative', *-itás* '-ity', *-ális/áris* '-al/ary', *-ifikál* '-ify', *-ológus* '-ologist', *-íroz* (verb forming suffix); as well as *-ia* '-y', but the latter only if preceded by two consonants (e.g., *-áns* '-ant' vs. *-ancia* '-ance/ancy'). These suffixes are bisyllabic, vowel-initial, and non-harmonic (unary). ISVS sometimes applies before the second member of a compound, the first member usually changing its ending into *-o* in such cases, e.g., *Hung**á**ria* 'Hungary'–*Hung**a**roring* ⟨a motor racing track⟩, *szl**á**v* 'Slavonic'–*szl**a**vofil* 'slavophile', *k**é**mia* 'chemistry'–*k**e**moterápia* 'chemotherapy', *c**é**zár* 'Caesar'–*c**e**zarománia* 'megalomania'. As a result, ISVS applies in the antepenultimate (or earlier) syllable (cf. Trisyllabic Shortening in English). The only exception is the verb-forming suffix *-ál* which, being monosyllabic, affects the penultimate syllable: *filoz**o**fál* 'philosophize', *kult**u**rált* 'civilized', *strukt**u**rál* 'structure (verb)', *kurz**i**vál* 'italicize'.

ISVS can be treated as an extraphonological phenomenon (just like FSVS, cf. (27)), i.e., a process triggered by diacritical marking on both stems and suffixes. ISVS stems then would have to be marked by a different diacritic (say, ISVS), otherwise we would get **aktivak*, **szlavos* for *aktívak* 'active-pl.', *szlávos* 'Slav-like' (an interesting case is ***úr*** 'gentleman' that undergoes both SVS processes: ***urak*** 'gentlemen', ***urizál*** 'play the gentleman'). However, a phonological account is also possible: *akadémia* 'academy' should be underlyingly represented like *gyár* 'factory' in (28) whereas *szintézis* 'sythesis' like *nyár* 'summer'. The ISVS counterpart of (29) could then refer to bisyllabic, vowel-initial, non-harmonizing (level 3?) suffixes whereas the FSVS rule should be triggered by epenthetic-vowel-initial (level 2?) suffixes (the level difference would ensure that the two processes are kept apart).

4 Compensatory lengthening

In standard Hungarian, compensatory lengthening is exclusively postlexical (a casual-speech phenomenon). In addition to sporadic cases of glide deletion (***autó*** %[ɔːtoː] 'car', ***Európa*** %[ɛːroːpɔ] 'Europe'), there are two major cases of deletion with compensatory lengthening. The deletion of nonnasal sonorants (*l, r, j*) leaves no trace other than the lengthening of the vowel (e.g., ***elront*** %[ɛːront] 'spoil'); that of nasals (*m, n, ny*) leaves nasality behind on the (lengthened) vowel (e.g., ***színház*** [sĩːhaːz] 'theatre').

Of liquids, it is /l/ that gets deleted the most easily, e.g., ***balra*** %[bɔːrɔ] 'to the left', ***elvisz*** %[ɛːvis] 'take away', ***el kell*** *menni* %[ɛːkɛːmɛnːi] 'one must leave'. As can be seen, compensatory lengthening does not affect vowel quality (*[baːrɔ] etc.). For long vowels, it applies vacuously, since Hungarian has no "overlong" (three-mora) vowels (***féltem*** %[feːtɛm] 'I was frightened', ***leszállt*** %[lɛsaːt] 'he got off'). Mid vowels (***zöld*** %[zöːd] 'green', ***bolt*** %[boːt] 'shop', ***polc*** %[poːtˢ] 'shelf', ***tölt*** %[töːt] 'fill', ***olvas*** %[oːvɔš] 'read') tend to preserve their quality in standard casual speech (i.e., they do not get tensed into the realization of /öː/ and /oː/, cf. (1) above); in substandard, "village-flavour" speech (also in some dialects), however, they switch quality, too: *"ződ", "bót", "póc", "tőt", "óvas".* With high vowels, this difference is hardly noticeable (***küld*** %[küːd] 'send', ***kulcs*** %[kuːč] 'key'), given that members of such long/short pairs exhibit practically no quality difference (cf. (1) again).

The slight difference in the mid vowels is a telling example of the difference between productive (surface level) and lexicalized instances of compensatory lengthening. Speakers who say *"ződ"* etc. have /zöːd/ etc. as the underlying representation of such words, i.e., compensatory lengthening has become part of their lexical forms. Just like any underlying /öː/,

these are realized as the appropriate tense quality (Upper Mid in (1)). On the other hand, standard speakers have underlying /zöld/ etc., and compensatory lengthening is an on-line phonological process for them. Being postlexical (non-structure-preserving), this process does not change the quality of /ö/, but just adds (physical) duration to it: hence we get a lax (though long) realization (Lower Mid in (1)).

The deletion of /r/ (*egysz**er** csak* %[ɛtˢːɛːčɔk] 'after a while') is usually observed in casual speech only but in ***ar**ra* 'that way', ***er**re* 'this way', *m**er**re* 'which way' it applies in colloquial (and even in moderately formal) speech: [ɔːrɔ], [ɛːrɛ], [mɛːrɛ]. /j/ is primarily dropped after front vowels: *gy**űj**t* [dʸüːt] 'collect', *sz**íj**ra* [siːrɔ] 'on a leash', *m**ély**ség* [meːšeːg] 'depth', *fel**ej**thetetlen* [fɛlɛːt(h)ɛtɛtlɛn] 'unforgettable'.

Vowels followed by a nasal are phonetically always (more or less) nasalized, especially their latter portion (that nearest to the nasal). If, however, that nasal is deleted (this is practically restricted to /n/), the nasality of the vowel becomes a lot stronger on the one hand, and phonologically relevant on the other since this is now the only surface trace of the underlying nasal consonant (apart from compensatory lengthening, but the latter only shows that there was a consonant there, not the fact that it was nasal). For instance, in the minimal pair *sz**án**hat* 'may pity' vs. *sz**áll**hat* 'may fly', the /n/ and the /l/ may both get deleted, neither resulting in observable compensatory lengthening, as the /aː/ is long to begin with; in this case, it is exclusively the nasality of the [ãː] in the first word that carries the distinction between [sãːhɔt] and [saːhɔt].

As can be seen, nasalization of a vowel does not result in quality change in Hungarian, not even in this latter, phonologized, form. Contrast this with e.g., French where nasalized vowels are all opener than their oral counterparts.

Intervocalic consonant deletion in fast speech (e.g., *e**gy**edül* %[ɛɛdül] 'alone') does not involve compensatory lengthening, not even where liquids or nasals are deleted (*va**l**ódi* %[vɔo(ː)di], *[vɔːoːdi] 'real', *mi**n**ek* %[miɛk], *[miːɛk] 'what for'); in the case of nasals, it does not result in vowel nasalization, either (*me**n**etrend* %[mɛɛtrɛnd], *[mɛ̃ɛtrɛnd] 'timetable').

5 The surface vacillation of vowel duration

The term "vacillation" is normally used in two different senses in phonology. One is inter-speaker variability, i.e., the case where, with respect to some phonological phenomenon, some speakers behave in one way, whereas other speakers (consistently) behave in some other way. In such cases, the two groups of speakers have different grammars: we could say that they speak different — though very similar — languages (or dialects). Ideally, the linguist describes a single coherent linguistic system, and refrains from taking glimpses at "neighbouring" systems; however, if the difference is observed within the same (sociolinguistically defined) language, in our case, standard Hungarian, the description usually has to take data from several systems into consideration.

The other type of vacillation is based on speakers' inconsistent behaviour (e.g., when the same speaker sometimes says *dzsungelb**en*** 'in the jungle' and sometimes *dzsungelb**an*** 'id.'). This type of vacillation has to be accounted for even if what is described is the idiolect of a single speaker (the limiting case of a homogeneous "speech community"). Usually, however, the two types of vacillation occur in conjunction. For instance, if some speakers always say *dzsungelb**en**,* others always say *dzsungelb**an**,* and yet others (probably the majority) use both forms indiscriminately, we have a mixture of both types of vacillation.

Cases of vacillation can be classified in another, less superficial manner, too. In some cases, the indeterminacy is located within the lexicon, in the form of alternative underlying forms (e.g., *tejf**el**/tejf**öl*** 'sour cream', *vakond/vakond**ok*** 'mole', as well as *dzsungel,* if its ambiguous behaviour is ascribed to two alternative underlying representations, one with an opaque *e,* the other with a transparent one). In other cases, the rule concerned may be optional (or rate/style-dependent), or the rules may be applied in several different orders, giving rise to surface vacillation. For instance, *analízis-b**en**/b**an*** 'in analysis' can be described by an optional rule turning sequences of neutral vowels into front-harmonic (the degree of optionality depending on vowel height).

Turning to the topic of the present section, the surface variability of vowel duration, the said types are found here, too. Inter-speaker variability based on alternative underlying forms is found, for instance, in *sz*[i]*nész*/*sz*[iː]*nész* 'actor', *h*[u]*ga*/*h*[uː]*ga* 'his younger sister', *gy*[ü]*jt*/*gy*[üː]*jt* 'collect', *arr*[o]*l*/*arr*[oː]*l* 'about that', *egyb*[ö]*l*/*egyb*[öː]*l* 'at once', *p*[o]*sta*/*p*[oː]*sta* 'post office', *k*[ö]*r*[uː]*t*/*k*[öː]*r*[u]*t* 'boulevard', *k*[ɛ]*l*/*k*[eː]*l* 'rise', *h*[ɔ]*nyas*/*h*[aː]*nyas* 'which number', as well as the vacillation between [aː] and short unrounded [a] in words like *sp**á**jz* 'larder', *Sv**á**jc* 'Switzerland', *Moz**a**rt.* Inter-speaker variability based on optional rule application is found with respect to rule (11b): *szomor*[u]/*szomor*[uː] 'sad', *men*[ü]/*men*[üː] 'set dinner'.

Similarly, but this time resulting in variability within the speech of a single speaker, nonhigh long vowels may optionally shorten in nonfinal closed syllables in colloquial speech: ***á**ltalános* %[altɔlaːnoš] 'general', *vás**á**rváros* %[vaːšarvaːroš] 'market town', ***é**rthetetlen* %[ert(h)ɛtɛtlɛn] 'unintelligible', *kem**é**nység* %[kɛmenʸšeːg] 'hardness', *sz**ó**rványos* %[sorvaːnʸoš] 'sporadic', ***ő**rmester* %[örmɛštɛr] 'sergeant' etc. Being a postlexical process, such shortening does not change the quality of /aː eː oː öː/ (as opposed to lexical shortening of the *ny**á**r* → *ny**a**rat* 'summer(-acc.)', *sz**é**l* → *sz**e**les* 'wind(y)', *l**ó*** → *l**o**vam* '(my) horse', *cs**ő*** → *cs**ö**vek* 'pipe(s)' type (FSVS, cf. section **3.2.1**) whose result — in a structure-preserving manner — takes up the quality of the corresponding short vowel). Thus, shortened [a] is unrounded and central (like [aː]), and shortened [e o ö] are closer (tenser) than the realizations of dialectal mid /e/ and of short /o/ or /ö/ (and of course much closer than standard low [ɛ]).

With respect to high vowels, it is hard to tell if the above type of shortening (that in nonfinal closed syllables) applies to them, since their duration is highly variable to begin with (cf. section **2**). Also, the quality difference between corresponding short and long vowels is very slight (hence, lexical and postlexical shortening cannot be told apart on the basis of vowel quality). It is nevertheless noteworthy that in the paradigms of high-vowelled FSVS stems like ***ú**t/**u**tat* 'road(-acc.)', *t**ű**z/t**ü**zet* 'fire(-acc.)', *v**í**z/v**i**zet* 'water(-acc.)', the short vowel seems to be gaining ground outside FSVS environments, too. In examples like ***ú**ttörő* 'pioneer', *t**ű**zhely* 'fireplace', *v**í**zcsap* 'water-tap'; ***ú**tnak* 'to the road', *t**ű**zben* 'in the fire', *v**í**ztől* 'from water', the shortening may be ascribed to the above rule ([u]*ttörő* like [ö]*rmester*). But this time, short vowels crop up in open syllables (***ú**ton* %[uton] 'on the road', *t**ű**zoltó* %[tüzoltoː] 'fireman', *v**í**zierőmű* %[viziɛröːmüː] 'hydroelectric power station'), too.

Along with the surface shortening rules reviewed so far, there are surface lengthening rules as well. "Pause-filling" (i.e., hesitational or phrase-final) lengthening, just like compensatory lengthening as discussed above, does not convert the short vowels into their long counterparts but only increases their physical duration. Emphatic lengthening either keeps the vowel quality or changes it in the "wrong" direction (e.g., emphatic *ooolyan* 'so much' with an *o* opener than usual, whereas long /oː/ is closer/tenser than /o/).

Other types of surface lengthening will produce [iː] out of /i/, (tense) [oː] out of /o/, etc. For instance, names of letters and sounds are usually quoted in a lengthened version as in *rövid* [iː]-vel 'with short I', *rövid* [oː]*-ra végződő* 'ending in a short O', etc. On the other hand, the names of the letters/sounds *a* and *e* exhibit a curiously intricate pattern. The basic case can be observed in contexts like *Nagy* [ɔː]*-val írjuk* 'It is spelt with capital A', *Az* [ɛː] *alsó nyelvállású magánhangzó* 'E is a low vowel'. But the musical notes *A* and *E* are called [aː] and [eː], and the word *ábécé* [aːbeːtˢeː] 'alphabet' makes it likely that the name of the letter A used to be pronounced [aː], perhaps due to some latinate influence. Letters used for identification exhibit a mixed pattern (cf. Nádasdy & Siptár 1994 : 180). Abbreviations behave in two different ways. Those read out as words (e.g., *USA* [ušɔ] 'United States', *ELTE* [ɛltɛ] 'Eötvös Loránd University') behave as normal words do: they end in short [ɔ]/[ɛ] which regularly undergoes LVL ([ušaːbɔn] 'in the US', [ɛlteːröl] 'from ELTE', cf. section **3.1**), whereas stem final long [ɔː] and [ɛː] never undergo LVL (in the sense that they never shift into [aː] and [eː]): *MTA-val* [ɛmteːɔːvɔl], not *[ɛmteːaːvɔl] 'with the Hungarian Academy of Sciences', *BSE-be* [beːɛšɛːbɛ], not *[beːɛšeːbɛ] 'into the Budapest Sports Club'; cf. also *a-hoz* [ɔːhoz] 'to A', *e-nek* [ɛːnɛk] 'for E', etc.

If the underlying representation of the name of the letter E is a short /e/, how can its surface (postlexical) lengthening block the application of a lexical rule like LVL? Such bleeding interaction (between a postlexical and a lexical rule) undoubtedly runs counter to all current assumptions concerning the way phonological systems are organized. However, the phenomena discussed in this section are both peripheral and variable: therefore, the alternative approach (positing underlying /ɔː/, /ɛː/) will be discarded here and it will be assumed that either some exception device takes care of the offending cases (e.g., the names of letters/sounds are marked in the lexicon as exceptions to LVL), or else the formulation of LVL must be modified so that a consonant is given as left environment. In the latter case, the difference between e.g., $fa{+}t \rightarrow$ *fát* [faːt] 'tree-acc.' and $a{+}t \rightarrow$ *a-t* [ɔːt] 'the letter A-acc.' is accounted for, but at the cost of restricting the generality (increasing the complexity) of the rule. It is not obvious if the gain is worth the cost.

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