THEORETICAL LINGUISTICS PROGRAMME, BUDAPEST UNIVERSITY (ELTE)

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Abstract

Ternary suffixes in Hungarian have often constituted a puzzle for analysts of vowel harmony. Apart from the clear manifestations of palatal harmony, such suffixes have led researchers to also posit a restricted version of palatal harmony.

In this paper, we would like to argue against this view. Combining the insights of Government Phonology (cf. Kaye, Lowenstamm & Vergnaud 1985) and Optimality Theory (cf. Prince & Smolensky 1993), we wish to analyse the behaviour of ternary suffixes as an instance of licensing the occurence of the elements **U** and **I** in the same governed position.

The paper is built up as follows. In section 1, we introduce the representation of the Hungarian vowel system, during which we illustrate the phenomena of Vowel Harmony and Lowering. In section 2, we discuss the behaviour of ternary suffixes, so far termed as labial harmony. In section 3, we give a licensing analysis, first in purely Government Phonological terms, and then extended to Optimality Theory.

1 Hungarian Vowel System

1.1 Introduction

The vowel inventory of Hungarian consists of seven short and seven long vowels as in (1). We give all examples with Hungarian spelling, where single and double accents indicate length (and not stress).

(1) Hungarian Vowel Inventory

	short vowels			long vowels		
high	i	ü	u	í	ű	ú
high-mid	ö	o		é[e:]	ő	ó
low-mid	e [ɛ]		a [ɔ]			
low						á[a:]

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In Government Phonology, the framework we adopt here, segments are represented as a composition of unary features (or elements). These elements can function as heads or operators. For vowels, the three elements **A**, **I** and **U** are employed. In addition to their combinations, vowels can be empty-headed. The vowel inventory in (1) thus can be represented as in (2). (This representation is a slightly modified version of that proposed in Rebrus (to appear).) Heads are underlined and where other element exists written after the dot, while operators precede it, and empty-headed expressions end in a dot.

(2) *Representation of Hungarian Vowel System*

short vowels			long vowels		
I	**I.U**	**U**	**I**	**I.U**	**U**
	AI.U	**A.U**	**A.I**	**AI.U**	**A.U**
AI.		**A.**			
				A	

The representation in (2) is motivated by phonetic characteristics and phonological alternations. The basic phonological evidence comes from vowel harmony to which we turn first. We come back to some other considerations later.

1.2 Vowel Harmony

As it is well-known, the great majority of Hungarian suffix vowels alternate depending on the vowel quality of he stem. **A** certain amount of harmony is apparent within stems too, but in this paper we will not consider this issue. The basic alternation within suffixes involves palatal harmony, that is, in Government Phonological terms, the spreading of the element **I**. This means that most suffixes have two alternants. Some simple examples are given in (3).

(3) *Binary suffixes*

Vowels	*Suffixes*		*Examples*	
u~ü	-unk/-ünk	Poss. Pl.1	fog+unk	'our tooth'
			fej+ünk	'our head'
ú~ű	-ú/-ű	Denom. Adj.	(nagy) láb+ú	'big footed'
			(kis) fej+ű	'small headed'
a~e	-nak/-nek	Dative	lúd+nak	'for the goose'
			tök+nek	'for the pumpkin'
á~é	-nál/-nél	Adessive	ház+nál	'at the house'
			szék+nél	'at the chair'
ó~ő	-ból/-ből	Elative	bolt+ból	'from the shop'
			víz+ből	'from the water'

As these examples show, the alternants differ from each other only in whether they contain the element **I** or not. This justifies the representations given in (2). Firstly, it provides motivation for representing *ü* and *ö* as **U**-headed (instead of being headed by either **I** or **A**), since this way they strictly parallel *u* and *o*, respectively. The short *a~e* alternation follows the same pattern. The only exception in this respect is the long *á~é* pair, where the addition of **I** changes the segmental structure by relegating **A** to dependent position. This is motivated by the consideration that this way **I**-headedness groups *é* together with *i*, expressing the fact that these are the truly neutral vowels of the system. Notice that these are the only vowels that can appear in disharmonic suffixes (apart from a few exceptions)[1]. The table in (4) gives some examples of the regular cases.

(4) *Neutral V suffixes*

Repr.	*Vowels*	*Suffixes*		*Examples*	
I	i	-i	Adj.	buda+i	'from Buda'
				pest+i	'from Pest'
I	í	-ít	Active Verb	csúf+ít	'make ugly'
				szép+ít	'make nice'
A.I	é	-ért	Causal Final	sajt+ért	'for cheese'
				pénz+ért	'for money'

What is important here is that there are no examples of disharmonic suffixes with the vowels *e*, *ö* and *ü* (the other front vowels). This fact can be explained by restricting the class of non-alternating suffixes to **I**-headed expressions. It also provides extra evidence for representing *ü* and *ö* as **U**-headed (as opposed to the possibility of **I**-headedness).

1.3 The *e~a* pair

Finally, we have to motivate the representation of the pair *e~a*. We argue against the **I**-headedness of *e*, because it is not (clearly) neutral and because it does not appear in non-alternating suffixes (cf. (4)). Furthermore, the crucial evidence for the empty-headedness of these vowels comes from the phenomenon of Lowering. This leads us to the issue of quarternary suffixes. In these suffixes, apart from a usual high-mid alternation (*o~ö*), certain stems trigger two additional low-mid alternants (*a~e*). (These stems either consist of a lexically specified nominal root, or they end in a non-derivational suffix.) The examples in (5) illustrate this low-mid~high-mid alternation. In each pair of examples, the first case illustrates the choice of the regular high-mid alternant, while the second shows the triggering of Lowering, either by a lexically specified stem, or by a preceding suffix.

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[1] These exceptions include certain diminutive suffixes like *-kó*, *-us*, *-cus* and the temporal *-kor*. However, these suffixes behave differently from the above mentioned ones in another respect too, namely with respect to certain stem alternations (cf. Rebrus (to appear)).

(5) *Lowering*

A.U ~ A.	*o~a*	bál+ok	'ball+Pl.'
		sál+ak	'scarf+Pl.'
		bab+ot	'bean+Acc.'
		bab+om+at	'bean+Poss.Sg.1+Acc.'
AI.U ~ AI.	*ö~e*	tök+ök	'pumpkin+Pl.'
		völgy+ek	'valley+Pl.'
		tűr+öm	'endure+Sg.1'
		tűr+t+em	'endure+Past+Sg.1'

The alternations in (5) can only be expressed by a single elemental change if *e* and *a* are represented as empty-headed. In this case, Lowering will simply involve the loss of the element **U**, and it does not further affect the internal structure of the segments.

Apart from the Budapest-dialect discussed so far, there are two other dialects relevant for the representation of the vowel *e* (the data come from Deme & Imre 1968-78 and Imre 1971). The short vowel inventory of one (spoken in most parts of Hungary, apart from Budapest and the North-East) is illustrated in (6).

(6) *high-mid ë dialect*

short vowels

i	ü	u
ë [e]	ö	o
e [ɛ]		a [ɔ]

As can be seen in (6), this dialect contains two mid front unrounded vowel phonemes: high-mid *ë* [e], represented with "umlaut e", and low-mid *e* [ɛ]. (From now on we will refer to this dialect as the "high-mid ë"-dialect.) In this case, the gap in the high-mid row of the figure in (1) disappears. That is, the representation of high-mid *ë* will be **I**-headed and this vowel will behave as the other high-mid vowels. The Budapest-dialect can be regarded as a simplified version of the Dunántúl dialect where the two sorts of *e*'s merge into one, namely into the low-mid form.

The third dialect (that of Szeged) resembles the previously mentioned one in that it also contains the high-mid *ë*, and thus can be represented as in (6), but here in most cases this high-mid *ë* merges with the high-mid rounded *ö*. The important fact is that in each dialect it is the low-mid vowel *e* that is involved both in the *e~a* alternation and in Lowering. This supports the view to represent this vowel as empty-headed and thus different from *ö* and *o*.

Extra evidence for the empty-headedness of *e* and *a* comes from their phonetic realisation as lax [ɛ] and [ɔ] respectively. Note, however, that strictly speaking we represent *a* as an unrounded vowel, that is, as an expression that would stand for the

vowel schwa [ə] in other languages. (Here we can refer to the long-standing debate among Hungarian phonologists concerning the rounding of the vowel *a* (cf. Nádasdy & Siptár, 1994). It would take us too far from the actual topic of this paper to extensively motivate this move, but as a brief motivation we can mention that it is plausible to analyse *a* as the default epenthetic segment in Hungarian (as opposed to *o*, which only occurs near to the root and in the root). And a schwa-like sound is much more likely to occur epenthetically than either a low rounded vowel (**U.A**) or a lax rounded one (**AU.**). (Readers are referred to Rebrus (to appear) for further discussion of this point.)

1.4 Summary of Suffix Representations

In summary, the lexical representation of the possible types of suffix vowel alternations illustrated in (3) and (4) is given in (7).

(7)

V variants		*Lexical*
short	*long*	*Representation*
u~ü,	ú~ű	**U**
	ó~ő	**A**.**U**
a~e	_	**A**.
_	á~é	**A**
i	í	**I**
_	é	**A**.**I**

Here it can be seen that the class of vowels allowed in suffixes is more restricted than the one in stems. Namely, in suffixes while all three elements **A**, **I** and **U** can appear in head positions, only **A** is allowed to occur in operator position. **I** only appears in operator position as a result of palatal harmony, while **U** is generally disallowed from operator position in this language.

2 Labial Harmony

Apart from palatal harmony discussed so far, many previous analyses of Hungarian vowel harmony have posited a restricted version of labial harmony (see Vago 1980, Van der Hulst 1985, Kornai 1991, Nádasdy & Siptár 1994 among others). The basic motivation for this comes from examples of ternary suffixes which we illustrate in (8) with the Allative suffix *-hoz/hez/höz*.

(8) *Ternary Alternation*

bab+hoz	'to the bean'
ház+hoz	'to the house'
kút+hoz	'to the well'
bot+hoz	'to the stick'
víz+hez	'to the water'
fej+hez	'to the head'
érv+hez	'to the argument'
tök+höz	'to the pumpkin'
füst+höz	'to the smoke'

There are about a handful of productive suffixes of this type and all of them involve the three vowels *o*, *e* and *ö*. That is, of the other imaginable ternary types none occurs. Furthermore, labial harmony is not manifested in binary suffixes either. We list the possible but non-occurring alternations in (9).

(9) *Non-occurring cases of labial harmony*

ternary	*binary*
*u~i~ü	*i~ü
*ú~í~ű	*í~ű
*ó~é~ő	*é~ő
	*e~ö

As can be seen from (9), this type of harmony is not only restricted to a specific height and to ternary alternations, but also to short vowels -- an unusual restriction. As we have seen, otherwise in Hungarian, every vowel harmony alternation type has a corresponding long version, too.

Apart from these restrictions on the occurrence of ternary suffixes, there is another interesting defect in the inventory of suffix alternations that we have already discussed. Namely, that there are no suffixes with short alternating *o~ö*, as we have summarized in (7)[2]. In our view, these two empirical generalizations are connected. In fact, we wish to derive the phenomenon of "labial harmony" from the absence of suffixes with the short *o~ö* alternation. Actually, having the representations in (2) makes it impossible to distinguish between two different types of high-mid suffixes (*o~ö* vs. *o~e~ö*). And we do not have the possibility of positing abstract underlying representations either. Thus we represent ternary suffixes the same way as the binary ones. In particular, the representation

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2 In fact, there is one exception to this generalization, namely, the derivational suffix *-nok/nök*, as in *elnök* 'chairman', *hírnök* 'messenger', *mérnök* 'engineer' and *szónok* 'orator'. This suffix, however, is lexically seriously restricted, there are only 34 items that contain it, many of which are obsolete. Thus we do not regard these examples as the result of productive suffixation, and we do not consider this issue any further in this paper.

of the *o~e~ö* suffix vowel will fill the only eligible gap in the figure in (7) and thus will give **A.U** . This explains the inherent rounding of the back alternant *o*. The *ö* alternant, on the other hand, will be derived through palatal harmony, as a result of combination with the element **I**. The only problem that remains is how to get rid of the **U** element in the *e* alternant. The solution to this problem is the topic of the next section.

The hypothesis that the existence of the ternary alternation is connected to the absence of the binary one is supported by the fact that there are certain suffixes which have both a short and a long vowel version. These different versions are selected by different stems on a lexical basis. When the short vowel version appears, there are three alternants, *o*, *e* and *ö*, whereas when the long vowel version occurs, then we only find two alternants, *ó* and *ő*. (10) gives some examples, with the Reflexive/Medial suffix pair *-kodik/kedik/ködik* vs. *-kódik/kődik*.

(10) *Ternary-binary suffix pairs*

gondol+kodik	'think'
visel+kedik	'behave'
öltöz+ködik	'dress oneself'
bán+kódik	'sorrow'
vesz+kődik	'bother'

In some cases, the same stem can select both the short and the long vowel variants, as in the forms *rejt+ezik* 'hide oneself' vs. *rejt+őzik* 'idem'.

At this point we would like to return to the different dialects discussed before. The relevant fact is that in the "high-mid *ë*" dialect, suffixes with the *o~e~ö* alternation always employ the high-mid vowel *ë*, while suffixes with the *a~e* alternation contain the low-mid vowel *e*. We illustrate this with the ternary suffix *-hoz/hez/höz* 'Allative' and the binary suffix *-nak/nek* 'Dative' appended to the stem *ember* 'man', as in (11a) In the Budapest dialect analysed here, high-mid *ë* has merged with low-mid *e*, thus both types of suffixes contain the same low-mid *e*, as in (11b). In the third, Szeged-dialect, however, the high-mid *ë* has in most cases been neutralized with the front rounded *ö*, and --crucially-- in this dialect these suffixes have only two alternants, *o* and *ö*, as in (11c).[3]

(11) *3 dialects*

a. high-mid *ë* dialect	hoz/hëz/höz	embër+hëz	embër+nek
b. Budapest	hoz/hez/höz	ember+hez	ember+nek
c. Szeged	hoz/ höz	embör+höz	embör+nek

In the rest of this talk we will concentrate on the last two dialects in (11). This concludes the discussion of the facts of "labial harmony" in Hungarian.

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3 Actually, there is an extra dialect spoken in the North, between Szolnok, Gyöngyös and Salgótarján, Where although there is no neutralisation into *ö* within stems, this merger can appear in the ternary suffix *-hoz/hez/höz* which thus surfaces with the binary *o/ö* alternation. Thus here we have the corresponding forms from (11) as *embër+höz* and *embër+nek*.

3 Analysis

3.1 Licensing

Our analysis of the above facts will crucially involve the notion of licensing. We first give a brief introduction to this device. Licensing is the theoretical tool to explain the phenomenon that certain types of positions support a greater number of contrasts than others. In addition, the remaining possibilities in the weaker positions involve the less marked segments. Here we will only discuss licensing relations between vowels. An example comes from languages where stricter restrictions apply to segments appearing in unstressed positions than in stressed positions (as in English or Russian). In other languages, this distinction can be based on the morphological affiliation of the position as belonging to a stem or an affix. Yet in other languages, the ones exhibiting vowel harmony, there is a designated position where all possible distinctions appear. In every other position, the number of distinctions depends on the quality of the designated position, that is, if the harmonic element is present in this position, then it is also licensed in the other positions. In Government Phonology, the position with the greatest amount of contrasts is called the governing position, and segments appearing here license distinctions in governed positions.

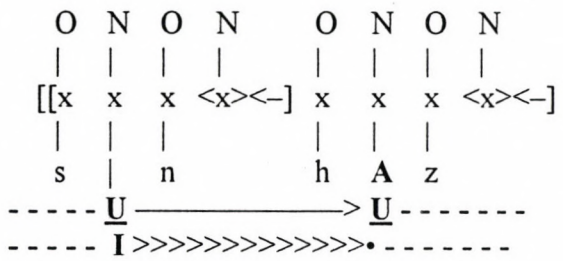
As we have shown in (8), the basic generalization concerning ternary suffixes is that the vowel *ö* can only appear following another front rounded vowel (*ö* or *ü*). The frontness of this vowel follows from palatal harmony. And the inherent rounding of the suffix vowel, that is, the element **U**, can only appear on the surface, if it is supported by a preceding **U**. This can be expressed as licensing of the above mentioned sort, as in (12).

(12) **Generalization**

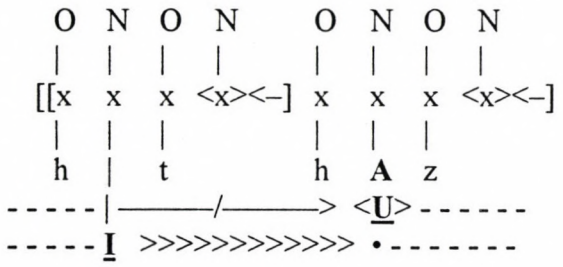
A, **I** and **U** together in a governed position is only licensed by a governing **U** and **I**.

At this point, it is necessary to specify **A** in the statement in (12), because the *u~ü* alternation is not restricted in the same way. By 'governed position' we mean the alternating suffixes, thus stem positions are not relevant in this respect (in examples such as *eszköz* 'device'). That is, stems are immune to this generalization the same way they are immune to vowel harmony. It is important to note here that licensing is always local, that is, only adjacent vowels can have such effect. We illustrate the generalization in (12) in (13a-b).

(13) a. *sünhöz* 'hedgehog + Allative'



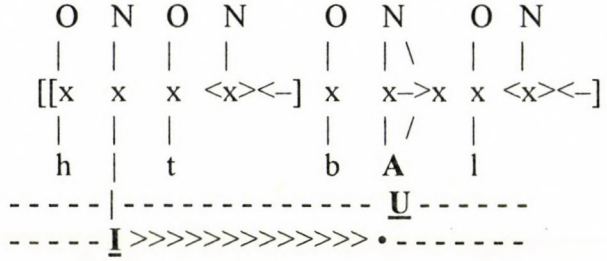
b. *hithez* 'belief + Allative'



In these examples, square brackets indicate separate phonological domains. In addition, domain final empty nuclei are licensed not to be phonetically realized in terms of principles of Government Phonology, and this is indicated by angled brackets. We have only specified the representation of vowels, with different on separate tiers. Licensing is indicated by a single arrow. The spreading of **I** is shown by a series of rightward pointing angled brackets, as can be seen between the element **I** and the dot. In (13a) *sünhöz*, the lexically specified **A.U** of the suffix vowel is supplemented by an **I** spreading from the stem. The resulting **I.U** combination is licensed by the same combination present in the stem vowel, as expressed in the generalization in (12). However, in (13b) *hithez*, the lack of an element **U** in the stem vowel prevents the **U** of the suffix from being licensed. Here it can also be seen that the two processes are of a different nature, namely the spreading of **I** is an instance of fortition, whereas the deletion of **U** is an example of lenition, that is, it is different from what is traditionally regarded as harmony (although see Harris 1990 for a similar proposal).

The example in (14) shows that suffixes with the long *ó~ő* alternation satisfy (12). Following Charette 1989, we claim that as far as **U**-licensing is concerned, long vowels start a new governing domain, as they do for Umlaut in Korean or for local harmony in Pulaar. The head position of a branching nucleus is thus not in a governed position, and accordingly it does not need external licensing for its element **U**. The dependent position of the branching nucleus, on the other hand, does not contain a separate **U** element, since it only shares the **U** element of the head (similarly to the way **I** is shared as a result of spreading), and is thus in no need of extra licensing either.

(14) *hitből* 'belief + Elative'



Notice that long vowels do not behave the same way with respect to **I**-spreading, namely, they do not start a new domain for that process. Here, we can again follow Charette (1989) in claiming that unbounded harmony is unlike a binary (or local) relation in that it is indifferent about intervening governing domains, such as long vowels.

3.2 Licensing and Optimality

The analysis as presented so far is not totally satisfactory. For one thing, it is not explicit enough. For example, there is nothing that tells us that it is the deletion of the element **U** that is required. Another problem is that the statement in (12) is rather complex.

However, if we look at this statement more closely, it can remind us of one type of problems Optimality Theory was designed to account for, namely, the "Do do something, only when necessary", or "repair strategy" type (as opposed to the "Do something except when banned" type) (cf. Prince & Smolensky 1993, p.23). That is, the element **U** is deleted from a governed **A**, **I**, **U** combination only when it is not licensed by a governing **U** and **I**. That is, it is possible to break down the complex constraint in (12) into simpler ones which have to be ranked in a specific order on the basis of their dominance. This is, in fact, easily accomodated in Government Phonology, since this theory is also constraint-based.

The first constraint we need expresses the fact that the combination of **I** and **U** is restricted. This constraint, which employs the licensing we illustrated in (13), is given in (15).

(15) LICENSE (I, U)
The combination of **I** and **U** in a governed position is licensed by a governing **U**.

This constraint is motivated by the fact that *ü* and *ö* are the most marked vowels of the inventory. They occur less frequently in the inventories of the world's languages. Maddieson (1984), in a representative sample of 317 languages, found only 24 and 23 such languages respectively. (In these numbers we included both the lax and tense variants of these vowels.) Languages that lack these vowels can be represented by assigning the elements **U** and **I** to the same autosegmental tier, and thus preventing these elements from combining in the same segment (see e.g. KLV 1985). Although in Hungarian, these elements *are* allowed to combine, their combination in a weak position requires some external support, expressed by licensing in Government Phonology. Note that opposed to

(12), (15) does nor require the presence of a governing **I**. This is so, because such an **I.U** combination can only appearin a governed position as a result of **I**-spreading, that is, if there is an **I** in governing position. And the spreading itself will be accounted for by another constraint discussed below. (We will also return to the absence of specification of **A** in (15) later.)

In ternary suffixes, LICENSE (**I**, **U**) is never violated. What can be violated is the constraint prohibiting the deletion of the element **U**, given in (16).

(16) PARSE (**U**)
The element **U** present in a segment is phonetically realized.

Among the phenomena examined here, deletion of other elements does not occur, and thus the constraints referring to them (namely, PARSE(**A**) and PARSE(**I**)) are not relevant at this point. (That is, they are so highly ranked that they never can be violated.)

The interaction of these constraints in (15 and (16) is illustrated in (18). (The small *v*'s in this table and the following ones stand for the absence of an element on a particular tier, and simply present for expository purposes.) The configuration violating LICENSE (**I**, **U**) is in fact the result of a third constraint which we do not explicitly define here. We only give the cover constraint **I**-HARMONY in (17), which forces the spreading of **I** into governed positions, as we have discussed before.

(17) **I**-HARMONY (cover constraint)
"Spread **I** into governed positions!"

The violation of this constraint is fatal because of its dominance in the hierarchy, as shown in (18c), the form *hithoz*. Among the remaining candidates where **I**-HARMONY is satisfied through the spreading of I, the decision has to be made via the interaction of the other two constraints. (18a) *hithöz* violates LICENSE (**I**, **U**), while (18b) *hithez* violates PARSE (**U**). Since it is (18b) which is the grammatical form, we have to rank LICENSE (**I**, **U**) above PARSE (**U**).

(18) *hithez* 'belief + Allative'

h v t + h **A** z v **U** **I** v	**I**-HARMONY	LICENSE (**I**, **U**)	PARSE (**U**)
a. h v t + h **A** z v **U** **I** >>>>• *hithöz*		*!	
b. h v t + h A z v <**U**> ☞ **I** >>>> • *hithez*			*
c. h v t + h **A** z v **U** **I** v *hithoz*	*!		

Thus (18) motivates the ranking of constraints in (19).

(19) **I**-HARMONY >> PARSE (**U**)
LICENSE (**I**, **U**) >> PARSE (**U**)

In the dialect without **U**-deletion, the third one in (11), the two constraints LICENSE (**I**, **U**) and PARSE (**U**) are ranked in the opposite order. This means that no optimal form in this dialect will violate PARSE (**U**), that is, LICENSE (**I**, **U**) will have no effect, and **U**'s will not delete even if they are not preceded by a governing **U**. Thus here it is the candidate *hithöz* in (18a) which will be the winner.

(20) and (21) show that when LICENSE (**I**, **U**) is satisfied, the decision is made solely by PARSE (**U**). One difference is that in (20) **I**-HARMONY is also active, while in (21) it is not. Aa a consequence, the winners in (20) vs. (21) satisfy LICENSE (**I**, **U**) in a different way. Namely, in (20a) by a governing **U**, while in (21a) LICENSE (**I**, **U**) is satisfied vacuously.

(20) *sünhöz* 'hedgehog + Allative'

s v n + h **A** z **U** **U** **I** v	I-HARMONY	LICENSE (I, U)	PARSE (U)
a. s v n + h **A** z **U** **U** ☞ **I** >>>> • *sünhöz*			
b. s v n + h **A** z **U** <**U**> **I** >>>> • *sünhez*			*!
c. s v n + h **A** z **U** **U** **I** v *sünhoz*	*!		

(21) *babhoz* 'bean + Allative'

b **A** b + h **A** z v **U** v v	LICENSE (I, U)	PARSE (U)
a. b **A** b + h **A** z v **U** ☞ v v *babhoz*		
b. b **A** b + h **A** z v <**U**> v v *babhaz*		*!

Now we can return to the issue that in the original formulation of (12) it was the combination of **I** and **U** with **A** which demanded licensing, and not just the simple combination of **I** and **U**. This was so, because suffixes containing the vowel *ü* do not decompose. The first example in (3) illustrates this case. However, the constraints as given so far predict the deletion of **U** in these cases too. Notice though that such a deltion would change the status of the remaining elements within the structure of the segment, namely, it would change an **U**-headed *ü* into an I-headed *i*. Such structural changes are seriously disfavoured. We wish to make exactly this fact responsible for the lack of deletion in these suffixes. The relevant constraint is given in (22).

(22) *SWITCHING

Elements preserve their position within the structure of the segment.

This means that apart from the deletion of **U**, elements preserve their status as being heads or operators. In other words, when an **U** head is deleted, headship still remains on the **U**-tier resulting in an empty-headed expression. Note that we restrict the scope of *SWITCHING to already existing structure, that is, a spreading head can still take on the role of operator in a governed position, while the already specified heads and operators within governed positions cannot change their role as a result of spreading. The candidates of the previous examples thus all satisfy *SWITCHING. (23) illustrates the operation of this constraint, by the example of the Poss. 1st Pl. *-unk/ünk*.

(23) *hitünk* 'belief + Poss. 1st Pl.'

h v t + v n k v **U** **I** v	**I**-HARMONY	*SWITCHING	LICENSE (I, U)	PARSE (U)
a. h v t + v n k v **U** ☞ **I** >> • *hitünk*			*	
b. h v t + v n k v <**U**> **I** >> • *hitink*		*!		*
c. h v t + v n k v **U** **I** v *hitunk*	*!			

The contrast between (23a) *hitünk* and (23b) *hitink* shows that *SWITCHING cannot be lower ranked than LICENSE (I, U). At this point, we have no evidence whether *SWITCHING is above LICENSE (I, U) or they are unranked, since in this case PARSE (U) already decides. The contrast between (23a) *hitünk* and (23c) *hitunk*, on the other hand, motivates the ranking of **I**-HARMONY above LICENSE (I, U). These ranking is given in (24).

(24) *SWITCHING >> LICENSE (I, U)

The motivation for the ranking between **I**-HARMONY and *SWITCHING is shown in (25). This example involves the suffix vowel alternation *á~é* in the Adessive suffix *-nál/nél* which is the only instance of violation of *SWITCHING.

(25) *hitnél* 'belief + Adessive'

h v t + n **A** l v v **I** v	**I**-HARMONY	*SWITCHING
a. h v t + n **A** l v v ☞ **I** >>>> • *hitnél*		*
b. h v t + n **A** l v v **I** v *hitnál*	*!	

Since (25a) is the grammatical form, we know that violating **I**-harmony is worse than violating the other constraint. Thus, we get the ranking in (26).

(26) **I**-HARMONY >> *SWITCHING

From the examples (19), (24) and (26) we get the linear ordering illustrated in (23).[4]

4 Summary

In this paper, we have shown that ternary suffixes in Hungarian do not involve a restricted version of labial harmony, as suggested before -- at least not in the traditional sense of harmony as spreading. Instead, by combining the insights of Government Phonology and Optimality Theory, we analysed the behaviour of these suffixes as a result of appropriate vs. inappropriate licensing of the combination of the elements **I** and **U** in a governed position.

[4] In fact, the constraint *SWITCHING is different from the other ones in that it involves comparison of the input and output forms. Maybe further research will prove that it is rather a principle of reprsentation than a violable constraint. This would of course require a diffrent reprsentation for the vowel pair *á~é*.

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