# Phonologically motivated lexical repair strategies are conservative\*

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#### Abstract

We examine the derivation of intransitive verbs from adjectives in Hungarian. Two phonologically unrelated suffixes are added to adjectival stems in almost complementary distribution: -ul~ūl and -od~ed~öd-. We show that this suffixation abides with various phonological and morphological constraints in addition to being lexically conservative: the stem of the intransitive verb must occur also as the stem of its transitive counterpart.

**Keywords:** allomorph selection; lexical conservatism; prosodic conditioning; deadjectival derivation; Hungarian

Resum. Les estratègies de reparació lèxica motivades fonològicament són conservadores

En aquest article, examinem la derivació de verbs intransitius a partir d'adjectius en hongarès. Dos sufixos fonològicament no relacionats, -ul~ūl and -od~ed~öd-, s'afegeixen als radicals adjectivals en una distribució gairebé complementària. Demostrem que aquesta sufixació compleix diverses

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restriccions fonològiques i morfològiques, a més de ser lèxicament conservadora: el radical del verb intransitiu també ha d'aparèixer com a radical del seu equivalent transitiu.

Paraules clau: selecció al·lomòrfica; conservadorisme lèxic; condicionament prosòdic; derivació deadjectival; hongarès

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In this paper we examine the derivation of intransitive verbs from adjectives in Hungarian. There are two harmonically alternating suffixes -ul~ül and -od~ed~öd-, which have the same meaning and are essentially in complementary distribution but are radically different in their phonological makeup. We interpret this as lexical allomorphy, which is phonologically (prosodically) conditioned based on the syllable count of the stem. Vowel-final adjectives are an interesting case here since hiatus is not tolerated, triggering two types of repair: vowel deletion and consonant insertion. This can interact with the prosodic constraint since deletion changes the syllable count of the stem. The type of repair appears to be stem-specific but we argue that it is essentially predictable because it is lexically conservative (cf. Steriade 1999, 2008; Breiss 2021, 2023) in that the repaired stem of the intransitive verb must also occur in a specific, designated member of its paradigm. 1 the transitive form. Given the particular repair and the prosodic constraint, the intransitive form can be predicted. The paper is organised as follows: in §1 we briefly discuss and illustrate phonologically conditioned lexical allomorphy and lexically specific repair; deadjectival intransitive derivation in Hungarian is described in detail in §2; §3 examines the predictability of the types of repair; §4 and §5 focus on these types of repair, truncation and and insertion and in §6 we compare the extended notion of lexical conservatism that we employ in the analysis and the classical version proposed by Steriade (1999) – and applied to noncategorical data in a stochastic model by Breiss (2023).

#### 1. Background

Languages may exhibit phonologically conditioned lexical allomorphy, that is, the phonological selection of phonologically unrelated, highly dissimilar allomorphs that cannot realistically be derived from a unique underlying representation (e.g.,

 Throughout the paper we use the term paradigm in its extended sense which includes derivational forms, too (cf. Steriade 2000). Paster 2006; Nevins 2011; Smith 2015; Scheer 2016). The phenomenon may be exemplified by the data in (1) from Turkana (Dimmendaal 1983).

#### (1) Abstract nouns derived from intransitive verb of state

```
C(C)VC
a. monosyllabic root
                                        -isi
                                                                        'brightness'
                                                        a-kwaŋ-isi
b. polysyllabic root C_{\alpha}V_{\gamma}C_{\alpha}V_{\gamma}C_{\beta} -u a-wowok-u 'lightness'
                           CV_{\gamma}CV_{\gamma}C_{\alpha} -V_{\gamma}C_{\alpha} a-ŋarab-ab 'roughness'
c. polysyllabic root
```

The suffix -isi is added to a monosyllabic root in (1a). Longer roots containing a repetition of an identical CV sequence select a totally different allomorph of this suffix, -u, as in (1b), while others in which the successive consonants are not identical are suffixed with the reduplication of the root-final VC sequence, as in (1c). Thus the phonological shape of the root determines which suffix allomorph is selected, but these allomorphs themselves do not resemble each other (they could hardly be derived from the same underlying form in a generative framework).

We also find cases where a phonologically dispreferred form is repaired differently stem specifically because the repair mechanism applied is lexically determined by the stem. Note that in the Finnish example below the repair is also suffixspecific since it is only triggered by the plural in (2a-c), not by the conditional in (2d), Pater (2010).

## (2) Finnish \*[ai] if [i] is plural

```
a. /tavara+i+ssa/ [tavaroissa]
                                     a > o
                                                         'thing-PL-INE'
b. /jumala+i+ssa/ [jumalissa]
                                          a > \emptyset
                                                         'God-PL-INE'
                   [itaroissa] \sim [itarissa]  a > o \sim \emptyset  'stingy-PL-INE'
c. /itara+i+ssa/
d. /anta+isi/
                   [antaisi]
                                            no repair 'give-COND'
```

The phonologically similar stems in (2a) and (2b) select different repairs to avoid [ai]: changing the sequence to [oi] in the first case and omitting the first vowel altogether in the second. A third stem in (2c) applies both strategies variably. However, when the phonologically similar conditional suffix is added to a stem ending in [a], no repair is applied at all, as in (2d).

English also provides examples for the reparation or lack thereof of a phonologically dispreferred form: the stress of the second syllable of the verbs in (3a) disappears in the nominalised forms (as evidenced by vowel reduction), presumably in order to avoid adjacent stresses. Nevertheless, in phonologically similar forms in (3b) stress and the quality of the vowel remains unchanged. Here the adjacency of three stressed vowels is apparently tolerated (Pater 2000).

## (3) English stress clash avoidance and tolerance

```
a. sègmént ~ sègm[ə]ntátion
                              infórm ~ inf[a]rmátion
b. àugmént ~ àugmèntátion
                              impórt ~ ìmpòrtátion
```

As in the Finnish examples in (2), the difference in the behaviour of the English nouns in (3) cannot be ascribed to any phonological difference in the word forms, the two stem types must be lexically distinguished.

Steriade (1999) notes that in derivation some properties of a novel form (i.e., one that is lexically unlisted or if listed so infrequent that it has to be computed online) are based on a remote base, a listed allomorph that is available within the paradigm rather than the compositional source, the local base, if this leads to a reduction of markedness.

#### (4) Novel form uses remote base if available

	listed f	forms	novel form
	local base	remote base	
a.	rémedy	remédial	remédiable
b.	párody	*paródial	*paródiable (párodiable)

While rémedy and párody are prosodically identical (both are dactyls), the location of stress is different when -able is suffixed to these stems: it moves to the penult in the stem *remédi*-, but it remains on the antepenult in the stem *párodi*-. Steriade claims that this can be explained by making reference to the availability of the form remédial, whose stem can function as a remote base for the novel form suffixed with -able and thereby avoid a potential lapse violation, while the absence of its counterpart \*paródial in the extended paradigm of párody makes such repair impossible. Thus the creation of novel forms is lexically conservative in this sense. Breiss (2021, 2023) argues that lexical conservatism is probabilistic. The availability of a remote base is not deterministic: the likelihood of the application of a remote base depends on several factors including the lexical properties of the remote base (its semantic similarity, frequency), priming, etc., but crucially also whether the speaker knows that word form. The stem *cómpensate*, with antepenultimate stress, will retain or not the location of stress when suffixed with -able depending on the speaker's acquaintance with the potential remote base *compénsatory*; if the speaker is aware of this word, then it is likely that she will have *compénsable*, if not, then the form *cómpensable* is more likely, where stress remains on the first vowel as in the stem (the local base).

Lexical conservatism plays a crucial role in the selection of the lexically conditioned repair strategies interacting with the phonologically conditioned lexical allomorphy of intransitive derivation we describe in §2. The situation in English just described and that in Hungarian is different on at least three counts: (i) markedness (lapse) in English is either resolved, (4a), or not, (4b), that is, sometimes there is an actually occurring default outcome, which leaves the phonologically marked form unrepaired, while in the Hungarian suffixation discussed here markedness (hiatus) is repaired, (ii) in Hungarian there is more than one repair mechanism, all of which resolve the phonologically marked configuration (hiatus), which does not occur in verb forms; and although lexical conservatism is responsible for selecting the optimal repair, (iii) the selection is also conditioned by an independent factor (syllable count), which results in extreme cases of lexical allomorphy.

In this paper we are examining intransitive verbal forms (INTR) as compared to transitive ones (TR), i.e., examine how and to what extent an INTR form can be predicted assuming that the corresponding TR form is known. It would also be possible to examine the reverse case, predicting INTR forms from the corresponding TR ones but theoretical considerations and the statistics of the lexicon favour the TR→INTR direction.<sup>2</sup> An alternative would be to examine the two types of derivation together in a parallel fashion without a directional bias. Hungarian appears to be a typological mixture of the "western" type of relationship between TR and INTR forms, where TR forms are unmarked and INTR forms are derived from them and the "eastern" type where TR forms are derived from INTR forms (as suggested by Haspelmath 2001). However, using morphosyntactic and semantic arguments, Komlósy (2000) has shown that TR forms are primary in Hungarian, which makes the directionality we pursue in the paper plausible.

#### 2. The phenomenon

The derivation of an intransitive verb from an adjectival stem in Hungarian<sup>3</sup> selects a prosodically conditioned allomorph as is shown by the data in (5).<sup>4</sup>

(5) Allomorphy in intransitive verb formation

```
monosyllabic stem:
                               polysyllabic stem:
-ul~ül ("L allomorph")
                              -od~ed~od- ("D allomorph")
tág 'wide' ~ tág-ul '-INTR'
                              komoj 'serious' ~ komoj-od(-ik) '-INTR(-NDF.3SG)
kék 'blue' ~ kék-ül
                              fehér 'white' ~ fehér-ed(-ik)
                              tömör 'solid' ~ tömör-öd(-ik)
s\ddot{u}k 'tight' \sim s\ddot{u}k-\ddot{u}l
```

Monosyllabic stems select the allomorphs -ul~ül, which we will refer to as the L allomorph, while polysyllabic stems select the phonologically unrelated allomorphs -od~ed~öd-, the D allomorph (the choice between the vowels of the two and three variants, respectively, is dictated by vowel harmony). The present tense indicative nondefinite third person singular form, which is the citation form of verbs in the language, is suffixless in case of the L allomorph, but the verbs created by the D

- 2. A reviewer has pointed out that evidence (presumably experimental) other than lexical data would ultimately be needed to make an argument for the base of the derivation, but we must leave that for future research.
- 3. We use the standard orthography, but replace consonant digraphs with single (often háčeked) letters. Accent marks (single and double) indicate vowel length.
- 4. The distribution in (5) is further modified or complicated by some minor narrow-scope subregularities (e.g., the D allomorph often does not occur after d/t-final stems: \*selid-ed-, selid-ül 'tame-INTR', \*šüket-ed-, šüket-ül 'mute-INTR', a similarity avoidance effect) and poetic, archaic, lexicalised, or idiosyncratic forms, which we disregard here. Furthermore, we focus on deadjectival use: the phonologically identical verb-forming intransitive suffixes can also be denominal, rarely deverbal and in some cases occur with bound stems whose category is undeterminable - these cases also fall outside the scope of this paper. The meaning of this productive deadjectival derivation is 'become X<sub>ADI</sub>' and the derived verb is often accompanied by a perfectivising preverb, which we suppress in the examples cited for simplicity.

allomorph take the suffix -*ik* in the same form. Henceforward we will only indicate -*ik* by the hyphen after the D allomorph.

The intransitive verbal derivation illustrated in (5) is not fully productive, but this is not unusual for a derivational suffix. For instance, the L allomorph cannot be suffixed to the monosyllabic stems *ross* 'bad' (\**ross-ul* intended meaning: 'become bad') or *kiš* 'small' (\**kiš-ül* intended meaning: 'become small') and the D allomorph cannot be suffixed to the polysyllabic stems *hamiš* 'false' (\**hamiš-od-*) or *irid*' 'envious' (\**irid*'-*ed-*), for example.<sup>5</sup>

There is a general ban on hiatus in Hungarian verbal paradigms.<sup>6</sup> This means that a repair is needed for both L and D allomorphs when they are suffixed to vowel-final stems. Two potential repair mechanisms are applied, the deletion of the stem-final vowel, as in (6a), and the insertion of a hiatus-filling consonant (a geminate consonant in one case), as in (6b).

## (6) Repairing hiatus

#### a. vowel deletion

```
barna 'brown' ~ barn-ul sapora 'prolific' ~ sapor-od-
fakó 'pale' ~ fak-ul — laššú 'slow' ~ lašš-ul somorú 'sad' ~ somor-od-
šuňi 'sly' ~ šuň-ul fančali 'annoyed' ~ fančal-od-
```

#### b. consonant insertion

```
— gizda 'nasty' ~ gizdá-š-od-, furča 'weird' ~ furčá-bb-od-
bő 'large' ~ bő-v-ül forró 'hot' ~ forró-š-od-, olčó 'cheap' ~ olčó-bb-od-
— karčú 'slim' ~ karčú-š-od-, laššú ~ laššú-bb-od-
cuki 'sweetie' ~ cuki-š-od-
```

Although examples may be lacking with all the final vowels in some cases, there does not seem to be any systematic constraint on vowel deletion: any stem-final vowel can be truncated before both the L and the D allomorphs of the intransitive verbaliser suffix. As for consonant insertion, there are examples for the insertion of v,  $\check{s}$ , and the geminate bb. This is not a natural class, and while v is found as a hiatus breaker elsewhere in the language,  $\check{s}$  and bb are not. We will return to the provenance of these consonants in §5.

- 5. Some of these forms are lexically blocked (\*ross-ul by roml-ik 'deteriorate'), or can be expressed with the comparative form of the stem (ross-abb-od- 'bad-CMPR-INTR', kišš-ebb-ed- 'small-CM-PR-INTR') others may only be paraphrased by longer expressions (\*hamiš-od-/\*irid'-ed- by hamiš-šá/irid'-d'é válik 'false/envious-TRANSL become').
- There are only two forms with hiatus created by suffixation, dicő-ül 'get glorified' and dicő-ít 'glorify', both based on the now archaic stem dicő 'glorious'.

## 3. The predictability of repair

The prosodic constraint on the selection of the INTR allomorph holds for the surface stem, that is, the stem which has been repaired by either of the hiatus reparation strategies. Consonant insertion does not modify the syllable count of the stem, therefore a polysyllabic adjective will always take the D allomorph when hiatus is resolved by insertion but since vowel deletion does change the syllable count, a polysyllabic adjective may select the L allomorph if it is truncated to avoid hiatus and hence becomes monosyllabic or may select the D allomorph if the truncated stem is still polysyllabic. We provide the allomorph selection of four stems in (7).

#### (7) Possible and impossible INTR forms

stem	repair	L allomorph	D allomorph
fakó 'pale'	deletion: yes insertion: unspec.	<b>fak-ul</b> * <sup>PR</sup> fakó-š-ul	* <sup>PR</sup> fak-od- ??fakó-š/bb-od-
sigorú 'strict'	deletion: yes insertion: unspec.	* <sup>PR</sup> sigor-ul * <sup>PR</sup> sigorú-š-ul	<b>sigor-od-</b> ??sigorú-š/bb-od-
karčú 'thin'	deletion: no insertion: yes	* <sup>LX</sup> karč-ul * <sup>PR</sup> karčú-š-ul	* <sup>PR</sup> karč-od- <b>karčú-š</b> /??bb <b>-od-</b>
mohó 'greedy'	deletion: no insertion: no	*LXmoh-ul *PR/LXmohó-š-ul	*PR/LXmoh-od- *LXmohó-š/bb-od-

The asterisked forms in (7) do not exist. Those labelled "\*PR" are excluded by the prosodic constraint on allomorph selection: the stem is either too long (polysyllabic) for the L allomorph, or too short (monosyllabic) for the D allomorph. A stem is labelled "\*LX" when truncation or insertion is lexically excluded stem specifically, e.g., the form \*karčul is labelled "\*LX", because this stem is lexically excluded from truncation. This leaves us with a single possibility for karčú, and two possibilities each for fakó and sigorú. Of these latter forms in variation one is common (fakul and sigorodik) while the other occurs marginally (??fakó-š-od-, ??fakó-bb-od-, ??sigorú-š-od-, ??sigorú-bb-od-, ??karčú-bb-od-) since for these stems insertion is unspecified (i.e., not excluded). These forms are rare because the possibility of deletion lexically inhibits the forms with insertion. The stem mohó is lexically excluded from both deletion and insertion, thus in this case neither the L nor the D allomorph can be added to the stem, resulting in a paradigm gap. The pattern illustrated in (7) shows that if we know which type of repair is available for a specific stem (and assume the effect of the syllable count based prosodic constraint), we can predict whether it will take the L allomorph or the D allomorph.

The type of repair is stem specific but we submit that the repair selected for an intransitive verb form is predicted by lexical conservatism: an INTR form selects the repair that occurs elsewhere in a designated form, a specific remote

#### 4. Truncation

We find that in a large set of stems the truncated INTR form is accompanied by a truncated TR form. There exist more than fifty such adjectival stems, some of which are listed in (8). The transitive verb-forming suffix is the harmonically invariant -ít. Thus: *barn-ul* 'become brown', *barn-*ît 'make brown', etc.

#### (8) Both INTR and TR contain truncated stem (not exhaustive list)

stem	INTR	TR
barna 'brown'	$barn$ - $ul$ $\leftarrow$	barn-ít
ferde 'skew'	ferd-ül ←	ferd-ít
fakó 'pale'	fak-ul ←	fak-ít
laššú 'slow'	lašš-ul ←	lašš-ít
<i>šuňi</i> 'sly'	šuň-ul ←	šuň-ít
sapora 'prolific'	$sapor-od-\leftarrow$	sapor-ít
somorú 'sad'	somor-od- ←	somor-ít
kešerű 'bitter'	kešer-ed- ←	kešer-ít
gömböjű 'round'	gömböj-öd- ←	gömböj-ít
kunkori 'curly'	kunkor-od- ←	kunkor-ít
+over 40 others		

There is a much smaller set where, although the truncated TR form does exist, the L or D suffixed INTR form cannot be derived from a truncated stem. These are shown in (9).

## (9) Only TR contains truncated stem (exhaustive list)

stem	INTR <sup>7</sup>	TR
<i>šűrű</i> 'dense'	*šűr-ül	sűr-ít
köňňű 'easy'	*köňň-ül	köňň-ít
apró 'tiny'	*apr-ul	apr-ít
tarka 'colourful'	*tark-ul	tark-ít
kurta 'short'	*kurt-ul	kurt-ít
ronda 'ugly'	*rond-ul	rond-ít
tele 'full'	*tel-ül	tel-ít
homorú 'hollow'	*homor-od-	homor-ít

There is another large set of adjectival stems which are not truncated before either the TR or the INTR suffix. The fourth logically possible set, containing stems that are truncated before the INTR, but not before the TR suffix, is only marginally attested. The four cases are summarised in (10), where (angle brackets) enclose truncated material and examples with truncation are set in bold. (Note that although the root is truncated in  $k\ddot{o}n\ddot{n}(\ddot{u})-ebb-ed$ ,  $hoss(\dot{u})-abb-it$  and  $hoss(\dot{u})-abb-od$ - below. this truncation does not occur before and is unrelated to the TR or the INTR suffix – this is why these examples appear in the "not truncated" column and/or row.)

# (10) Possible truncated and untruncated stems in INTR and TR forms

		before INTR (-ul~ül; -od~ed~öd-)			
		truncated	not truncated		
before	truncated	a. FREQUENT lašš⟨ú⟩-ít, lašš⟨ú⟩-ul somor⟨ú⟩-ít, somor⟨ú⟩-od-	b. INFREQUENT <b>šűr⟨ű⟩-ít</b> , šűrű-š-öd- <b>köňň⟨ű⟩-ít</b> , köňň⟨ű⟩-ebb-ed-		
TR (-it)	not truncated	c. MARGINAL lilá-š-ít, <b>lil(a)-ul</b>	d. FREQUENT karčú-š-ít, karčú-š-od- hoss(ú)-abb-ít, hoss(ú)-abb-od-		

The majority of verbs derived using these suffixes are either truncated in both their INTR and TR form, (10a), or not truncated in either form, (10d). These robust patterns, framed in (11a,d), are the lexically conservative ones. One of the nonconservative patterns, (10b), where the TR stem is truncated but the INTR stem is not, only occurs in a handful of verbs, and the other nonconservative pattern, (10c), where the INTR stem is truncated without a truncated TR stem (a remote base), is even weaker: it is only marginally attested. The strength of the

Some of these stems (e.g., apró) completely lack morphological INTR forms (gap) and apply periphrasis, others form them with insertion (e.g., šűrű-š-öd-, köňň-ebb-ed-).

<sup>8.</sup> There are only a few examples: árva 'orphan': INTR árv-ul, but no TR \*árv-ít, kuka 'mute': INTR kuk-ul, but no TR \*kuk-it, and lila 'purple': INTR lil-ul but no TR \*lil-it, etc. Some other apparent examples are not real members of this set for semantic reasons: their meaning is not the expected 'become X'.

patterns (10a,d) compared to that of (10b,c) substantiates the claim that there is indeed a clear correlation between TR and INTR forms (i.e., they are not derived independently). The extreme scarcity of items of type (10c) – even compared to those of type (10b) – suggests that the relationships is directional; we submit that these data are best compatible with the hypothesis that the INTR form is based on the TR form.

Though it occurs much more rarely, truncation of a yowel-final adjectival stem is also found outside the verb-forming INTR (and TR) derivations discussed so far. We here mention two such cases, the suffixation of the adverbialiser  $-an\sim en\sim n$  and the comparative suffix -abb~ebb~bb. (It is again vowel harmony that is responsible for the vowel alternations.) In (11) we list all possible cases comparing the occurrence of verbal and nonverbal truncation. The shaded cells contain truncated stems.

## (11) Verbal and nonverbal remote bases and truncation

stem types with respect to	vert	oal	nonverbal		
truncation	INTR	TR	ADVZ	CMPR	
verbal & nonverbal	lašš⟨ú⟩-ul, ifj⟨ú⟩-ul	lašš⟨ú⟩-ít, ifj⟨ú⟩-ít	lašš⟨ú⟩-an, ifj⟨ú⟩-an	lašš⟨ú⟩-abb, ifj⟨ú⟩-abb	
(5 stems)	köňň⟨ű⟩-ebb-ed-	köňň⟨ű⟩-ít	köňň⟨ű⟩-en	köňň⟨ű⟩-ebb	
	hoss(ú)-abb-od-	hoss(ú)-abb-ít	hoss(ú)-an	hoss(ú)-abb	
a. both TR & INTR (>50)	somor(ú)-od- sürk(e)-ül	somor⟨ú⟩-ít sürk⟨e⟩-ít	somorú-an sürké-n	somorú-bb sürké-bb	
b. only TR (8)	šűrű-š-öd-	šűr⟨ű⟩-ít	šűrű-en	šűrű-bb	
c. only INTR (3)	lil(a)-ul	?lilá-š-ít	lilá-n	lilá-bb	
d. no truncation (>100)	karčú-š-od- forró-š-od-	karčú-š-ít forró-š-ít	karčú-(a)n forró-(a)n	karčú-bb forró-bb	

The data in (11) show that verbal and nonverbal truncation are independent of each other, thus cannot be encoded in the phonological representation of stems: verbal truncation may occur without nonverbal truncation (e.g., somor-od- vs. somorúan) and vice versa nonverbal truncation may occur without truncation immediately before the verbal TR and/or INTR suffixes (e.g., hoss-an vs. hoss-abb-od-, not \*hoss-ul). This corroborates the claim that the remote base of the INTR form is not a nonverbal base. (10) and (11) show that the presence of a truncated TR

The numbers in the first column of this chart and elsewhere in this paper indicate the type frequency of the relevant deadjectival verb forms based on the Szószablya webcorpus (Halácsy et al. 2004). It is important to point out that the numbers indicate the unambiguous cases. However these counts are bound to be approximate due to several factors that hinder counting. There are many forms that may or may not fit the patterns discussed here so they have to be individually filtered because (i) there is a large set of lexicalized and semantically opaque forms and (ii) many of them do not have an adjectival stem or their stem is ambiguous. As a result it is almost impossible to provide a definitive list of the relevant forms.

form in a paradigm makes the presence of a truncated INTR form highly probable (measured in type frequency), although there is a weak pattern of paradigms with a truncated TR form but no truncated INTR form. It is also clear that the bias for truncation cannot be attributed to the stem alone (either by its underlying representation or by lexically indexed constraints) since the same stem can have truncated and untruncated alternants in the same paradigm affix specifically, that is, suffixes and stems codetermine the possibility of truncation.

#### 5. Insertion

We have seen that the hiatus created by affixing the vowel-initial INTR and TR suffixes to vowel-final adjectival stems can be resolved either by truncation (the deletion of the stem-final vowel) or by consonant insertion. We examine the latter in this section. Three consonants can be identified in insertion, -v-, -š-, and -bb-, the latter two of which are not typical hiatus-filling consonants in Hungarian. Examples are given in (12).

## (12) Hiatus-filling consonants

```
paradigm-specific augment (stem of the remote base is bound)
```

```
a. -v-:
          hő-v-ül ←
                             bő-v-ít, cf. *bőv
          karčú-š-od- ←
b. -š-:
                             karčú-š-ít. cf. *karčúš
```

productive **morpheme** (stem of the remote base is free)

```
bordó-š-od- ←
c -š:
                            bordó-š-ít, cf. bordó-š 'claret-ish'
d -hh:
         olčó-hh-od- ←
                            olčó-bb-ít, cf. olčó-bb 'cheap-CMPR'
```

The morphological status of these three hiatus fillers is not uniform. While -v- is not a morpheme, it is found in other cells of the paradigm prevocalically (e.g., %bő-v-en '-ADVZ', %bő-v-ek '-PL', bő-v-ebb '-CMPR') and it creates a bound stem, \* $b\tilde{o}v$ , see (12a); -bb is (identical to) the comparative suffix and whenever it is added to avoid hiatus before the INTR or TR suffix, it also creates a free stem, the comparative form of the adjective in question, see (12d). 10 The third consonant, -š-, may appear both as a meaningless augment, as in (12b), where it merely creates a bound stem, or as the meaningful adjectiviser suffix whose meaning is by and large identical to the English suffix -ish or -like, as in (12c), where the stem of the INTR and TR forms is free. Note that in many cases 'make/ become X' and 'make/become more X' are hardly distinguishable semantically, so ADJ-INTR and ADJ-CMPR-INTR mean pretty much the same thing. Likewise 'make/ become X' and 'make/become X-ish' are semantically extremely close. This suggests that even these suffixes are often augment-like since they are 'bleached' semantically in TR and INTR forms, that is, when they also fill hiatus. Thus, the main function of these consonants is repair.

<sup>10.</sup> Note that the availability of a comparative form does not entail that TR or INTR derivation is possible: mohó 'greedy', mohó-bb '-CMPR', but \*mohó-bb-ít, \*mohó-bb-od-.

As in the case of vowel deletion discussed earlier, here, too, there is a correlation between the bases of INTR and TR forms. We give examples in (13) to illustrate this (examples with the same type of insertion are in shaded cells; the meaning of the parenthesized forms is not the same as the one below it).

(13)	Insertion:	verbal	remote l	bases and	d correspo	onding	nonverbal	forms
------	------------	--------	----------	-----------	------------	--------	-----------	-------

stem	types	ver	bal	nonverbal		
wrt in	sertion	INTR	TR	ADVZ	CMPR	
v augmant	verbal & other	bő-v-ül	bő-v-ít	%bő-v-en	bő-v-ebb	
v-augment	only verbal	ja-v-ul	ja-v-ít	jó-l	jo-bb	
š-augment	only verbal (infrequent)	karčú-š-od- forró-š-od- önálló-š-od- ed'serű-š-öd-	karčú-š-ít forró-š-ít önálló-š-ít ed'serű-š-ít	karčú-n forró-n önálló-an ed'serű-en	karčú-bb forró-bb önálló-bb ed'serű-bb	
š-morpheme	verbal & other (frequent)	franciá-š-od-	franciá-š-ít	(franciá-ul) franciá-š-an	(franciá-bb) franciá-š-abb	
(ADJZ)		bordó-š-od-	bordó-š-ít	(bordó-n) bordó-š-an	(bordó-bb) bordó-š-abb	
bb-mor-	verbal & other (frequent)	olčó-bb-od-	olčó-bb-ít	(olčó-n) olčó-bb-an	olčó-bb	
pheme (CMPR)		hoss(ú)-abb-od-	hoss(ú)-abb-ít	(hoss⟨ú⟩-an) hoss⟨ú⟩-abb-an	hoss(ú)-abb	

(13) shows that nonverbal forms with insertion corresponding to the INTR/TR forms are not always available so they cannot serve as remote bases for INTR/TR forms. Furthermore, some nonverbal forms (in the same extended paradigm that the INTR forms repaired by insertion are part of) also occur without insertion as an alternative to the form where hiatus is repaired by insertion (*franciá-bb* 'more French', *franciá-š-abb* 'more French-like').<sup>11</sup>

While there is only one type of hiatus repair by deletion in the relevant forms (truncation of the stem-final vowel), there is more than one type of repair by insertion (-v-, - $\check{s}$ -, or -bb-). Thus, there is not only a competition of repair between deletion and insertion but also between the three types of insertion – which, we claim, is also resolved by lexical conservatism.

It is interesting to compare the type (lexical) frequency of the stems whose paradigm contains a form with a specific type of insertion that could potentially serve as a base for a TR/INTR form (stem "availability") with the likelihood with which this actually happens (the probability of an existing TR/INTR form given that a

11. As noted above: 'make/become X' and 'make/become X-ish' are semantically extremely close. However, while bordó 'claret' and bordó-š 'claret-ish' are different in meaning, there is no way to maintain this difference in the TR and INTR forms where consonant insertion must occur to counter hiatus: bordó-š-od-, bordó-š-ít.

corresponding form exists (the "conditional probability" of the repair). Curiously, availability and likelihood seem to be in an inverse relationship here: the lower the type frequency a given type of stem whose paradigm contains a form with a specific type of insertion is, the more likely it is that a corresponding TR/INTR form also exists in the same paradigm. For instance, the type frequency of paradigms with remote bases containing -v- is low but when such a stem does occur in the paradigm, -v- is always used to repair hiatus in the TR/INTR form. By contrast, there are a high number of stems with a -bb base since (comparable) adjectives almost always have a free -bb- stem (a comparative form) but this stem is not always available for repair, i.e., it does not always occur in the TR form to serve as the remote base for repair in the INTR form (e.g., karčú-bb, but TR karčú-š-ít. \*karčú-bb-ít, therefore INTR karčú-š-od-), or it may not occur in either the TR or INTR forms (see footnote 10). Repair by -š- is in between the two extremes of this hierarchical arrangement: an -š- stem does not always occur in the paradigm elsewhere than the TR and INTR forms, but when it does occur in the TR form, it will serve as the remote base for the INTR form, i.e., there is a corresponding INTR form. This hierarchy of repair by insertion is shown in (14).

## (14) Hierarchy of repair by insertion

	frequency	stem	meaningful	availability (of stem)	likelihood of repair
-v-	rare	haund	***	wawale.	high (always if available)
-š-	infrequent	bound	no	rarely	
-8-	frequent	£	yes ('-ish/like')	.1	1
-bb-	productive	free	yes (CMPR)	always	low

We summarise all the repairs discussed so far in (15). The stem of the INTR form is the stem of the TR form in all cases repaired by either vowel truncation or consonant insertion. In some cases of consonant insertion, this stem is a free form; this is typically either a comparative adjective or an adjective derived by the adjectiviser -s. While the stem of the INTR (and TR) forms may occur in other, nonverbal forms of the paradigm, this is typically not the case except when -v- is inserted: the resulting bound stem is used in many forms.

(15) Summary	of hiatus	repair of	of INTR	forms	and	other	corresponding	forms
(shaded)								

repair patterns		target	target verbal remote base		ing nonverbal forms
		INTR	TR	free form	bound stem
V-truncation		lašš-ul	← lašš-ít	laššú	~ lašš-abb, lašš-an
		fak-ul somor-od-	← fak-ít ← somor-ít	fakó somorú	
		bő-v-ül	← bő-v-ít	bő	~ bő-v-ebb, bő-v-ek
	-v-	ja-v-ul	← ja-v-ít	jó	
C-insertion	-š-	karčú-š-od-	← karčú-š-ít	karčú	
C-misci tion	-5-	franciá-š-od-	← franciá-š-ít	~ franciá-š	
	-bb-	jo-bb-ul olčó-bb-od-	← jo-bb-ít ← olčó-bb-ít	∼ jo-bb ∼ olčó-bb	

#### 6. Conclusions and extensions

In this paper we have argued that the choice between the competing repairs of hiatus (between deletion and insertion and also between the various types of insertion) is due to pressure by paradigm uniformity akin to the phenomenon analysed by Steriade (1999), Pertsova (2005), Breiss (2021, 2023), etc. As a conclusion it is important to review the differences between our use of paradigm uniformity and the concept originally proposed and also to explore the consequences of these differences. It must be stressed, however, that our extended version of paradigm uniformity is not intended to replace or supersede the original in any way; the choice depends on the phenomenon analysed.

The original analysis, which we can call Classical Lexical Conservatism (CLC), 12 has the following components and mode of operation. In CLC there is a "target form" whose phonological properties the analysis aims to predict. This form is an unlisted one in the paradigm examined, i.e., one that is unknown to the speaker, one she has not memorised (a novel form or one whose token frequency is extremely low) or one that does not exist in the sense that it is underivable (a paradigm gap, Pertsova 2005, 2016, Rebrus et al. 2023). Listed allomorphs are those that occur in a listed form in the paradigm, i.e., a form that is frequent enough for the speaker to have memorised it (as a member of the paradigm). This suggests that there may be differences between individual speakers as to which forms are listed (cf. Breiss 2021, 2023). The *local base* for the target form is a base allomorph that

<sup>12.</sup> It is an important difference between Steriade (1999) and Breiss (2021, 2023) that in the latter lexical conservatism (both in terms of the data and the model applied) is stochastic rather than categorical. In the present discussion we abstract away from this difference.

occurs in a listed form in the paradigm and is the expected base for the derivation of the target form ("exponents of derivatives' immediate syntactic subconstituents", Stanton & Steriade 2014; "the compositional source", Breiss 2021). The *remote base* of the target form is a base allomorph that occurs in a listed form in the paradigm other than the form that contains the local base (and is different from the local base). The remote base is not an allomorph that occurs in a specific, designated listed form, it is any base that is available in the paradigm ("forms lexically related to derivatives, but distinct from their local bases", Stanton & Steriade 2014). In CLC, lexical conservatism is a relationship between surface forms when in order to satisfy a phonological (markedness) constraint the target form "recruits" (Breiss 2021) a remote base instead of its expected local base, i.e., a remote base occurs in the unlisted target form instead of its local base.

Our approach in this paper is an extended version of Classical Lexical Conservatism (we will refer to it as Extended Lexical Conservatism, ELC). In our analysis the target form (the INTR form) is not necessarily an unlisted or rare form of the paradigm that the speaker does not know or at least is uncertain about. It may be a novel form that the speaker creates "online", but the same (implicational) relationship of conservatism holds even when the target is known (listed). In this latter case the nature of this relationship is like the one usually assumed in paradigm-based analyses that employ constraints of paradigmatic uniformity and contrast, where these constraints define the paradigm consisting of listed forms (e.g., Downing et al. 2005). There is no default local base identifiable independently of what is required by the phonological constraint: the base(s) distinct from the base of the TR form that occur(s) in the paradigm cannot be considered more of a compositional source for the derivation of the INTR target form than the base of the TR form (the remote base). The remote base is not just any base that occurs in any form in the paradigm: it is the base in a specific designated form, the TR form. In ELC, lexical conservatism is a relationship between surface forms (as in CLC) when in order to satisfy a phonological (markedness) constraint, the target form (the INTR form) uses the base allomorph of a designated listed form (the TR form) even though there may be other base allomorphs available in the paradigm some of which may also satisfy the phonological constraint. If the target form is unlisted, it is derived using the remote base; if it is listed, its base correlates with the remote base. We have also suggested that the phonological constraint (hiatus avoidance) can be satisfied through different repairs (V-deletion, three kinds of C-insertion) some of which sometimes may cooccur in the same paradigm but typically they are confined to different paradigms. In both cases we can see them as competing (intra-paradigmatic or trans-paradigmatic) repairs and in both cases it is the TR remote base that determines (i.e., also occurs in) the base of the target INTR form. The need for the repairs is motivated by the phonological constraint penalising hiatus, but the choice between the different types of repairs is determined by ELC.

Thus, ELC is an extension of CLC to cases when (i) the target form must follow the pattern of a privileged form of the paradigm (designated remote base) and

(ii) there is no default form of the paradigm (local base) whose "expected" pattern the pattern of the remote base overwrites.

Given these options, lexical conservatism can be seen "vacuously" satisfied in any phonologically conditioned base allomorphy (lexical or otherwise), i.e., the phonologically conditioned alternation of bases in the different forms of a paradigm is the case when extended lexical conservatism may be assumed to be applying but it has no nonvacuous effect. Since there is no identifiable default local base and no designated remote base for the target form: the choice of any one of the base allomorphs is a lexically conservative one, and therefore it is only the phonological constraint that determines the selection of allomorphs. To give an extremely simplified example, consider the selection of the VC base allomorph before consonant-initial suffixes in a class of Hungarian stems, which is motivated by the ban on triconsonantal clusters. Two types of stem alternants occur in these paradigms, one ending in CC (e.g., bokr-ok 'bush-PL') and one, ending in VC (bokor-ban 'bush-INE'). The former occurs only before vowel-initial suffixes and only the latter before consonant-initial ones. Lexical conservatism cannot select between the forms bokor-ban and \*bokr-ban, since both base allomorphs {bokr. bokor are available within the paradigm. Thus lexical conservatism is always satisfied, whichever base allomorph is selected, and it is only the phonological constraint \*CCC that determines the selection (whatever the dominance relation is between conservatism and \*CCC).

This view about the character of the local and remote bases can lead us to speculate about the logical possibilities of their combination and the resulting types of conservatism effects. The four possibilities are listed in (16).

#### (16) Local and remote bases

	(default) local base exists	remote base is designated
CLC	yes	no
ELC	no	yes
allomorphy	no	no <sup>14</sup>
???	yes	yes

The first three types are exemplified by the phenomena analysed, e.g., by Steriade (1999), INTR derivation discussed in this paper, and allomorphy (lexical or nonsuppletive), respectively. Arguably, the fourth possibility is the case in Romanian discussed by Steriade (2008), where some segmental alternations in derivation can only occur when certain specific inflected forms of the lexeme in question also display the alternation.

The view of allomorphy as a (vacuous) case of conservatism fits in well with the interpretation of phonologically motivated defectiveness as a lexical conserva-

<sup>14.</sup> This is a simplification since in some cases of allomorphy the selection is not exclusively conditioned by phonological markedness, since the base of a designated *set* of forms can also function as a remote base (cf. Rebrus & Törkenczy 2011; Rebrus et al. 2024).

tism effect. In this view, this type of paradigm gap arises when there is no lexically conservative repair (i.e., no appropriate remote or local base within the paradigm) to satisfy the phonological constraint (Pertsova 2005, 2016; Rebrus et al. 2023). Such gaps also occur in the INTR cells of the paradigms we discussed, when no repair (neither V-deletion nor any type of C-insertion) is licensed by the TR remote base of the paradigms of some stems (see the last rows of in each of (17a), (17b), and (17c)). These stems have no INTR forms with either the L or the D suffix allomorphs, e.g., hű (\*h-öd-, \*hű-š-öd-, \*h-ül, \*hű-š-ül, \*hű-bb-ül, \*hű-v-ül, etc.), apró (\*apr-ul, \*apró-š-od-, \*apró-bb-od-, etc.), d'öňörű (\*d'öňör-ül, \*d'öňör-öd-, \*d'öňörű-bb-öd-, etc.). These gaps furnish further evidence for the connection between INTR and TR forms.

Phonologically motivated defectiveness may be *covert*, too, when no allomorphs satisfying the phonological constraint are available in the paradigm, but the paradigm gaps are conventionally and systematically masked by forms/expressions whose morphosyntactic/semantic descriptions match those of the cells. These "substitute" forms/constructions may be (i) periphrastic (Rebrus & Törkenczy 2009) or (ii) members of other paradigm classes (Iverson 1981). This idea can be extended and allomorphy (especially lexical allomorphy) can be interpreted as covert defectiveness at the allomorph level since *some allomorph* cannot be used in a form to fill a given cell while the complementary one(s) will systematically and conventionally appear in the same cell (Rebrus & Törkenczy 2009) thereby "covering" the allomorphic gap.<sup>15</sup>

We can see this type of covert defectiveness occurring the INTR cells of the paradigms we have examined (in addition to the overt gaps discussed above): the lack of a D-suffixed form is systematically and conventionally masked by an available L-suffixed form and vice versa. This can be seen in (17). We have divided forms into three groups according to the number of syllables of the adjective stems: monosyllabic, (17a), bisyllabic, (17b), and longer, (17c), and marked the possibility of vowel deletion and consonant insertion (with "+" and "-") in the second (V-del) and third (C-ins) columns also showing the type of insertion in subscript when the latter repair is possible. Overt gaps occur in all the three groups – this is an unpredictable lexical property of the relevant stems and they seem to regularly correspond to overt gaps in the TR cells, too. Covert gaps (allomorphy) are generally characteristic of groups (17a) and (17c) such that the distribution of the D vs. the L allomorph is generally determined by a prosodic constraint based on syllable count. Covert gaps are typical in group (17b), but this time the complementary distribution sometimes involves D allomorphs vs. an L allomorph as in (17a,c) and sometimes different types of D allomorphs only (since the prosodic constraint excludes the L allomorph), (17) also shows that variation (overabundance) also occurs, sometimes there is more than one INTR form (i) one with an L suffix and one with a D suffix  $(la\check{s}\check{s}-ul \sim la\check{s}\check{s}\acute{u}-bb-od)$ , i.e., overabundance but no allomorphic (covert) gap, or (ii) more than one form with an L suffix  $(ja-v-ul \sim jo-bb-ul)$  or (iii) more than one form with a D suffix

(olčó-š-od-~olčó-bb-od-), i.e., overabundance with an allomorphic (covert) gap. Our analysis suggests that if multiple INTR forms occur, there should be more than one remote base (TR form) available.

(17) Paradigmatic properties of INTR forms with vowel-final ADJ s
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stems	V-del	C-ins	L-suffix	D-suffix	properties
a. monosyllabic (D-suffix gaps)	-	+ <sub>v</sub>	bő-v-ül	_	covert gap
	_	+ <sub>v/bb</sub>	ja-v-ul/jo-bb-ul	_	covert gap & overabundance
	-	_	_	_	overt gap (e.g., hű)
b. bisyllabic (gaps and/or overabundance)	+	_	fak⟨ó⟩-ul	_	covert gap
	+	+ bb	lašš(ú)-ul	laššú-bb-od-	overabundance (no gap)
	_	+ <sub>š</sub>	_	šűrű-š-öd-	covert gap
	_	+ bb	_	könn⟨ű⟩-ebb-ed-	covert gap
	_	+ <sub>š/bb</sub>	_	olčó-š/bb-od-	covert gap & overabundance
	-	_	_	_	overt gap (e.g., apró)
c. >2 syllables (L-suffix gaps)	+	_	_	somor⟨ú⟩-od-	covert gap
	_	+ <sub>š</sub>	_	korserű-š-öd-	covert gap
	+	+ <sub>š</sub>	_	sigor(ú)-od- sigorú-š-od-	covert gap & overabundance
	_	_	_	_	overt gap (e.g., <i>d'öňörű</i> )

Finally, we have to point out that the algorithm assigning INTR forms to adjectival stems is ultimately stochastic: the grammaticality status of morphological repair of less frequent or unlisted forms is often uncertain or gradient (intra- and interspeaker dependent), which provides a further connection to the status of forms potentially filling paradigm gaps.

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