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The Rhythmic Law in Czech: Vowel-final Prefixes

1. Introduction

The goal of this paper is to evidence two intricate distributional regularities of Czech that have not been identified so far. First, I show that the length of vowel-final prefixes depends on the kind of suffix attached to the stem. Namely, if the first suffix is of nominal character, the prefix shows length. If on the other hand a verbal suffix is added, the prefixal vowel is short. The second generalisation I bring to light is a sub-regularity of the first: once it is understood that words of verbal character (e.g. verbs, participles) are not eligible for prefixal length, it appears that being a nominal item (nouns, adjectives) is just a necessary condition for provoking prefixal length. The sufficient condition is of phonological nature: nominal items exhibit prefixal length only if their root-vowel is short. In other words, there is an absolute prohibition of two consecutive long vowels cohabitating in the particular morphological site [prefix+root]. Elsewhere in the language, there is no restriction on sequences of long vowels: *získávání, díkůvzdání*.

This generalisation is obviously parallel to what is known as the Rhythmic Law in Slovak, and possibly both are an instatiation of the same phonological mechanism. The Rhythmic Law (e.g. Rubach 1993) states that a long vowel is shortened if it is preceded by another long vowel. It does make no reference to morphological information at all. At first glance, the Czech situation seems to be the reverse: when two long vowels meet, the fist one is shortened. I show that both sets of data may be unified if morphological structure is taken into account: all instances of the Rhythmic Law concern sequences of long vowels whereby the first is root-internal, and the second of suffixal nature. Hence, the Czech and Slovak situation may be unified by simply stating that sequences of long vowels are prohibited if one of them occurs in the root. In such a situation, the affixal vowel (prefixal in Czech, suffixal in Slovak) shortens. Obviously, this is not a correct synchronic description because e.g. the length of Czech suffixal vowels is free. I argue that it represents a diachronic stage where both Czech and Slovak (and possibly Polish?) were one.

Another aspect of the morphological conditioning of affixal length concerns its templatic character. In languages that are known to be templatic such as Semitic, templaticity is defined as a procedure whereby a certain amount of (vocalic or consonantal) space is allocated to a certain morphological category. In this sense, Czech is templatic: the morphological category [prefix+root]$_{noun}$ exhibits the constant vocalic weight of exactly three morae. If the root is short, the prefix will be long; if the root is long, the prefix will be short. The overall weight is "three" in any event.

Unfortunately, space restrictions prohibit the very intricate and lengthy demonstration that is necessary in order to sort out 39 different suffixes and their numerous combinations. Therefore, this article only ambitions to show the rough regularity at stake, leaving a detailed demonstration for a place where no space restrictions obtain (cf. Scheer 2000).

2. Prefixal Alternations in Czech

In order to approach the alternations in prefixal vowel length, it is useful to be aware of another vocalic alternation that is observed in the complementary set of prefixes: consonant-final prefixes present a vowel – zero alternation at their right margin, as shown under (1) (cf. Scheer 1996,1997 for a complete description).

(1)   e   ø
      √BR   od**e**-brat   bez**ø**-bradý
               take away   beardless
      √DR   roz**e**-drat   roz**ø**-drobit
               tear up   crumble
      √ŠL   vz**e**-šlý   roz**ø**-šlapat
               open (flower)   crush
      √DM   roz**e**-dmout   roz**ø**-dmýchat
               blow up   fan
      √PŘ   roz**e**-přít   roz**ø**-přahat
               strut   remove

This alternation follows the distribution shown under (2).

(2)   a.   the prefix is vocalised iff the root-initial cluster is underlyingly √CøCV
      b.   the prefix remains unvocalised iff the root-initial cluster is underlyingly √CCV

In other words, the prefix is vocalised iff the root occurs in zero-grade and thus the first
consonant of the cluster is root-initial, but the second root-final. The underlying structure of
the root may be controlled by different means (cf. Scheer 1996,1997), one of which is the
occurrence of a vowel within the initial cluster in related forms. Compare the following
[√CC-] – [√CvC-] alternations shown by roots such as √br-át - √ber-u, against other roots
with the same initial cluster but that never alternate, e.g. √brad-ý.

(3)

	roots provoking the vocalisation of prefixes		roots provoking the non-vocalisation of prefixes
√CC-	two instances of the same root		
√BR-	ode-brat	od-b**í**rat	bez-bradý
	take away pf	take away ipf	beardless
√DR-	roze-drat	roz-d**e**ru	roz-drobit
	tear up inf	tear up 1st sg	crumble
√HR-	přede-hra	h**e**r	od-hrabat
	prelude NOMsg	game GENpl	sweep away
√HN-	ode-hnat	od-h**á**nět	roz-hněvat
	expel pf	expel ipf	enrage
√PR-	ode-prat	od-p**e**ru	vz-pruha
	prewash inf	prewash 1st sg	incentive
√SN-	beze-sný	s**e**n	pod-sněžník
	sleepless	dream NOMsg	snowdrop
√ŠL-	vze-šlý	š**e**l	roz-šlapat
	open (flower) adj	go past active participle	crush
√ZD-	pode-zdít	z**e**d'	od-zdola
	underpin inf	wall NOMsg	from below
√DN-	beze-dný	d**e**n	—
	bottomless	bottom GENpl	

The alternation to be investigated in more detail below is also conditioned by the root. It is
just as general as the one affecting consonant-final prefixes: all vowel-final prefixes present in
Czech may occur with a long or a short vowel.

(4)

prefix	VV			V	
o-	ú-tes	cliff, reef		o-tesat	cut
do-	dů-kaz	proof		do-kázat	prove
po-	pů-hon	writ of summons		po-hnat	sue, prosecute
pro-	prů-jezd	passage (while driving)		pro-jezdit	drive through
při-	pří-sada	ingredient		při-sadit	adjoin
za-	zá-pad	West		za-padnout	fall
na-	ná-nos	alluvial deposits		na-nosit	wash ashore, compile
vy-	vý-plata	salary		vy-platit	pay

3. Za-: First Generalisation Regarding Verbs

I have examined in detail one of the prefixes shown, i.e. *za-*. This choice is arbitrary, and its results need to be confronted with all other prefixes. The corpus on which my analysis is based represents the exhaustive record of the dictionary Ulbrich (1978), whose numeric result is as follows: out of a total number of 1575 items prefixed by *za-*, 759 are verbal (verbs, adverbs, participles), and 816 nominal (nouns, adjectives). Only 14 verbal items possess prefixal length, against 745 short instances. By contrast, the distribution of length is balanced for nominal items: 434 out of 816 are short, against 382 words with prefixal length.

The following table provides some illustration of the situation: all items representing a given root are shown in two columns, one containing nominal, the other verbal instances. Among both categories, items bearing long vs. short prefixes are graphically distinguished.[1]

(5)	Nouns		Verbs	
√	VV	V	VV	V

bav	zábava
	  zabavení
	  zabavitelný
				zabavit, -ovat

drh	zádržka zádržný zádrh zadrhlý		zadrhnout,-ávat zadrhovat zadržet,-ovat	

duch	záducha
	záduší
	záduśní
	zádušný
	  zadušení
	  zadušený
	  zadýchaný
			zadusit
			zadušovat se
			zadychat	

hyb	záhyb
	  zahynutí
	  zahnutý
			zahnout
			zahýbat
			zahynout	

hř	záhřevný
	  zahřatí
	  zahřívací
	  zahřívač
	  zahřívadlo
			zahřát,-ívat	

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[1] The sheer number of words I mention and their graphic appearance in tables of the kind below do hardly allow for glosses to be integrated in the text. For the sake of exposition and concentration due to space limitations, I therefore omit regular translations.

	Nouns		Verbs	
√	VV	V	VV	V
chod	záchod		zacházet	
		zacházení		
		zacházka		
chran	záchrana		zachránit	
	záchranný		zachraňovat	
		zachránce		
		zachránkyně		
		zachránění		
		zachraňovací		
klad	základ		zakladat	
	základka			
	základna			
	základní			
		zakladací		
		zakladatel		
		zakladatelka		
les	zálesácký		zalesnit,-ňovat	
	zálesák			
		zalesnění		
		zalesněný		
		zalesňovací		
lib	záliba		zalíbit	
	zálibnost			
	zálibný			
		zalíbení		

On account of the numeric situation, a first and obvious generalisation is in order: prefixal length never occurs in verbal items. The 14 words disregarding this "rule" fall into three adverbs, *zá-hodno, zá-hy, zá-roveň,* and 11 verbs, *zá-ležet, zá-lohovat, zá-pasit, zá-platovat, zá-polit, zá-sobit, zá-sobovat, zá-tkovat, zá-viset, zá-vodit, zá-vidět.* The set of verbs singled out by this means calls for several comments. First, all of the misbehaving verbs but one, *zá-sobit,* are imperfectives. This is rather unexpected since prefixation in Slavic usually means that the derived item is perfective. Moreover, those verbs that allow for a derivation of a perfective version double the already existing prefix *za-: za-zá-tkovat, za-zá-vodit.* The second prefixation, then, obeys the regularity: being prefixed to a verb, the second *za-* is short. This kind of double-prefixation of the same item is not common at all in the language. Indeed, things look as if the first and long *zá-* were not considered as a prefix, but as a part of the stem: nothing would prohibit its length under this assumption, and the imperfective character of the verb would not hurt the intuition that prefixation means perfectivisation. A verb like *závodit* could be regularly imperfective because it is not prefixed. There would be no strange double-prefixation of the same item either, *za-* in *za-závodit* being the only prefix. Finally, it is worth mentioning that out of 759 verbal items, the 11 misbehaving verbs do not seem to be arbitrarily chosen since two roots are represented two times: √leh (*zá-lež-et, zá-loh-ovat*) and √sob (*zá-sob-it, zá-sob-ovat*).

4. The Distribution of Prefixal Length in Nouns

As stated in the introduction, prefixal length in nominal items whose distribution is apparently anarchic turns out to be regular when looking at the categorial properties of suffixes. For instance, *zá-bav-a* is denominal, as witnessed by its nominal case-ending *–a*. By contrast, *za-bav-en-í* is deverbal since the first suffix is the past passive participle *–en*, followed by the nominalising *–í*, cf. *ná-draž-í*. The entire item *za-bavení* is nominal only because of the second suffix. Hence, if we want to know whether it is true that all deverbal nouns occur with short prefixes, while all denominal nouns show prefixal length, we must carefully identify all suffixes present in the 816 nouns at stake, and classify them according to their nominal or verbal character. The prediction, then, is that the first suffix attached to the root determines whether the prefixal vowel of the noun is long or short. If this first suffix is verbal, the prefix will be short; if it is nominal, the noun will exhibit prefixal length.

Before going into further detail, a distinction must be made between two classes of suffixes. Traditionally, stem-building suffixes, *kmenotvorné přípony*, are opposed to regular suffixes. This contrast refers to the common Indo-European distinction between root and stem: the stem is a root plus a stem-building suffix: [root + stem-building suffix]$_{stem}$. The reason for recognizing this kind of special affixes is the fact that they may be identified distributionally, but their meaning (Signifié) is unrecoverable, lost in ancient history of Indo-European. This notion of stem-building suffixes without (definable) Signifié is the basis of Benveniste's (1935) theory of the IE root.

For instance, there can be no doubt that the existence of a suffix in Cz *hřeb-en* "comb", Pol *grzeb-ień* "comb", Rus *gréb-en* \ "comb" has to be recognized since the same root occurs in these languages, as well as elsewhere, without *-en*: Cz *hrob* "grave", Rus *grob* "grave", Pol *grzeb-ę* "1st sg scratch, dig", Sanskrit *greb-em* "scratch, claw", *grob* "grave", Germ *grab-en* "dig", *Grub-e* "pit, hollow, hole". On these grounds, Pokorny (1959:455sq) reconstructs the IE root *ghrebh "scratch, dig, claw". The same suffix *-en* is also found in other instances of IE morphology: Lat *hom-ō*, GEN *hom-in-is* "man (vs. animal)" vs. Goth *gum-a*, Old Icelandic *gum-i*, Old High Germ *gom-o* (cf. Germ *Bräuti-gam*), all "man (vs. animal)", Toch A *śom* "boy" (Pokorny 1959:415). Hence, the *-en* at stake must be interpreted as a suffix that does not modify the meaning of the root, or, rather, whose meaning remains mysterious.

Among the 39 suffixes that occur in the corpus mentioned, five are stem-building. They are singled out in the following list that identifies the suffixal pool. A special treatment is required since they do not participate in defining a stem as nominal or verbal, although they do possess a nominal or a verbal identity in the sense that their occurrence is restricted to either nouns or verbs. This behaviour does not come as a surprise because they were real suffixes enjoying a Signifiant and a Signifié in ancient IE times and have become opaque since then. By the time inner-Slavic prefixation took place, no Signifié was left, and the initially complex [root+stem-building suffix] unanalyzable. Hence, stem-building suffixes were (and are) still physically present, but did not inject semantic and categorial information into the derivation anymore. They are thus "invisible" to inner-Slavic morphological processes, and to phonological consequences thereof.

(6) | List of suffixes occurring in the 816-noun corpus | | | |

	nb	Signifié	Signifiant(s)	Example compare with	
stem-building	1.	-n- kmenotvorný verbal	-n-	za-bouch-**n**-u-t-ý	bouch-at
	2.	-n, -t kmeny	-en, -t	lok-**et**, led-**en**	neh-et, Germ Nag-el
	3.	-v nominal with open root	-v	zá-chvě-**v**	chvě-t, pě-t – z-pě-v
	4.	-j nominal with open root	-j	zá-vo-**j**	< OCS *j\, dí-t - dě-**j**
	5.	-k kmenotvorný adj.	-k-	hoř-**k**-ý	hoř-it, těž-it - těž-**k**-ý
regular suffixes	6.	past passive participle	-Vn, -t	za-barv-**en**-í, za-br-**án**, za-běh-**an**-ý, za-bi-**t**-ý	
	7.	imperfective	-j-	za-bí-**j**-et, zabi-**j**-ák	
	8.	Nominative case ending	-ø,-a,-í,-o	zá-bav-**a**, zá-bal-**ø**, zá-dveř-**í**, zá-jmen-**o**	
	9.	nominal masc.	-t	zá-vi-**t**, zá-vis-**t**, pas-**t**, s-mr-**t**, zá-kry-**t**	
	10.	agentive, diminutive	-ek	zá-meč-**ek**, zá-vod-**č**-í, za-čát-**eč**-ník	
	11.	adjective	-n-	hod-**n**-ý, prv-**n**-í	
	12.	(primary) adjective	-ý, -í	mal-**ý**, prv-n-**í**	
	13.	thematic vowel	-i-,-a-,-u-, -ě-	bav-**i**-t, čern-**a**-t, tisk-n-**ou**-t, vid-**ě**-t, vis-**e**-t	
	14.	infinitive	-t	děl-a-**t**	
	15.	agentive	-(t)el	uč-i-t-**el**	
	16.	verbal formant	-ov-	kup-**ov**-a-t	
	17.	iteratives	-áv-, -ív-	hr-**áv**-a-t, chod-**ív**-a-t	
	18.	past active participle	-l	pad-**l**	
	19.	adjective z přechodníku	-ujíc,-ajíc, -ejíc	za-pad-**aj-íc**-í	
	20.	nominal	-l-	zá-vis-**l**-ý, sed-**l**-o, dí-**l**-o, tep-**l**-ý, cit-**l**-iv-ý	
	21.	nominalising neuter	-dlo	let-a-**dlo**	
	22.	adjective	-ov-, -iv-	zá-pas-**ov**-ý, za-dum-č-**iv**-ý	
	23.	adjective	-ský	zá-moř-**ský**	
	24.	agentive	-ník	zá-kaz-**ník**	
	25.	nominalising fem.	-ice	lv-**ice**, holub-**ice**	
	26.	agentive	-ák	za-les-**ák**	
	27.	diminutive	-ík	Honz-**ík**	
	28.	locative	-iště	let-**iště**	
	29.	qualitative	-ost	hloup-**ost**	
	30.	agentive masc.	-ár, -ář	mlyn-**ář**, zásob-**ár**-na	
	31.	agentive	-eč	za-hál-**eč**, za-hř-ív-a-**č**	
	32.	abstract	-ství/o	minister-**stv-o**, za-stup-i-t-el-**stv-í**	
	33.	locative fem.	-na	kavár-**na**, zá-klad-**na**, za-jišť-ov-**na**	
	34.	collective	-ina	zelen-**ina**, prázd-n-**iny**	
	35.	mediating	-o-	zá-pad-**o**-německý	
	36.	agentive	-eň	pís-**eň**, bás-**eň**	
	37.	abstract	-ba	hud-**ba**, stav-**ba**	
	38.	agentive fem.	-kyně	za-chrán-**kyně**	
	39.	instrumental	-em	Petr-**em**	

The particular segmentation of each one of the 816 nouns is certainly a delicate matter, and sometimes it will probably be hard to achieve a consensual morphological structure. Space

limitations prohibit a detailed discussion, which is available in Scheer (2000). However, I wish to point out a few things regarding some suffixes that would probably be considered "strange" by most Slavic speakers. The suffix number 9 in the above list, nominal masc. *–t* < CS *$t \setminus$, tX, identifies nouns such as *zá-vi-t, zá-kry-t, zá-vis-t, zá-vi-t-ek, zá-vi-t-ník* as denominal items (Holub&Kopečný 1952:473). Parallel derivations based on the same suffix are *by-t* "flat", *smr-t* < *sX-mør-t \setminus$ "death" (cf. *u-mír-at* "die", Lat *mor-s, mor-t-is*), *moc* < **mog-t \setminus$ "power", **nok-t \setminus$ > *noc* "night" (gt, kt > c, cf. **mog-ti* > *moci* "can"), *sla-t-ina* < **sol-t-ina*, (cf. *sůl*, Engl *sal-t*), *pas-t* < **pad-tX* "trap", *čes-t* < *čet-t \setminus$ "honor" (tt, dt > st, cf. *krás-ti* "steal inf", *krad-u* "id., 1st sg"). This suffix is not to be confused with the homophone past passive participle *–t* < tX (number 6) attached to open stems as illustrated for instance in *on byl bi-t, kry-t* "he was beaten, covered". Both may be distinguished by their Signifié, and by the fact that the verbal noun in *–í* is always derived from the past passive participle, never from the nominal *–t* < tX (*bav-it - bav-en - bav-en-í* "entertain, past pass. part., entertainment" vs. *krý-t – kry-t – kry-t-í* "cover, past pass. part., coverage").

Another suffix which is not particularly familiar is the nominal *–l*, number 20 in the above table, as in *zá-vis-l-ost, zá-vis-l-ý, zá-nět-l-iv-ý*. This suffix is different from the homophone past active participle, number 18 in the above table, because the latter never occurs without the thematic vowel of the infinitive: *vis-e-t, děl-a-t* "hang, do inf" – *vis-e-l, děl-a-l* "hqng, do past act. part.". Hence, the nominal *–l* identifies in occurring without the thematic vowel in formations such as *báz-l-iv-ý, cit-l-iv-ý, sed-l-o, dí-l-o* (cf. *sed-ět, dí-t se*), *tep-l-ý* (cf. *top-it*).

Illustration of these two suffixes clearly indicates that the segmentation at hand cannot be synchronically active. This kind of suffixation is not productive at all, and no Czech speaker is aware of the morphological status these items had at some earlier stage of the language. Hence, the prefixal alternations discussed in this paper are not part of the synchronic phonological system, and the entire complex [prefix+root] must be regarded as instantiating one single lexical entry. This result is in line with the status of consonant-final prefixes that comes out of the analysis of the vowel-zero alternation they host, cf. Scheer (1996).

On account of this kind of morphological information and granting the classification shown in table (6), the following numeric result obtains.[2]

(7)	nb of nouns with prefixal V	nb of nouns with prefixal VV	
deverbal	388	10	
denominal	46	372	
TOTAL	434	382	816

Hence, out of 816 nouns, 760 are regular to the extent that they show short prefixes if they are deverbal, whereas prefixal length is a consequence of their being denominal. Only 56 nouns disobey.[3] These fall into several classes. First, the generalisation mentioned at the outset emerges: out of the 56 misbehaving nouns, 24 are denominal and should thus bear a long prefix, but do not, and in addition possess a long root-vowel. Scanning the entire corpus for words whose prefix and root-vowel are long gives a one hundered percent negative result. The prohibition of *[[...VV]$_{prefix}$[...VV...]$_{root}$] is absolute.[4] A good illustration thereof is provided by prefix number 10, the nominal *–ek*, which should provoke prefixal length in

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[2] As a consequence of the above discussion, stem-building suffixes do not appear in the table below. Hence, the suffixes that "count" are not those attached to the root, but those attached to the stem.

[3] The entire list is as follows: *zadávka, zaprodajný, zahálka "idler fem", zahálka "idleness", zaháleč, zahálečnost, zahálčivost, zahálečství, zahálčivý, zahálečný, zahálečský, zahanbení, zahanbený, zahrádka, zahrádkář, zahrada, zahradní, zahradnice, zahradník, zahradnický, zahradnictví, zahraničí, zahraniční, zacházka, zachránce, zachránkyně, zachvěj, zajížd'ka, zakázka, zakázkový, zakarpatský, zákonitost, zákonitý, záležitost, zanáška, zaoceánský, zapadák, zapadákov, zarážka, zásaditý, zásobení, zásobovací, zásobovatel, zastavárenský, zastavárna, zastavární, zastávka, zatáčka, zátkovací, zátkovnice, zavalý, zavazák, zavděk, závodění, zavíjec, zavírák.*

[4] The only apparent counter-examples reduce to nothing: *zá-nártí = zá-ná-rt-í* where √rt is the root (*ná-rt = na rtu* "on tiptoe") and *ná-* a second prefix. The two words *zá-půjčka* and *zá-půjční* also involve two prefixes (cf. *půjčit* < *za-po-žč-it*). In the same way, the *–í* of *záň* and *zášti* is not radical, cf. Old Czech zářuj, CS *za-š\d-t-\je.

nouns. Table (8) below shows that the entire record of nouns whose first suffix is *–ek* is in strict complementary distribution: the prefix is long iff the root is short, and vice-versa.

(8)	*zá - √…VV…*	
	za - √…VV…	*zá - √…V…*
	zadávka, *zahálka "idler fem", zahálka "idleness"*, zahrádka, zahrádkář, zacházka, zachránce, zachránkyně, zajížď'ka, zakázka, zakázkový, zanáška, zarážka, zastávka, zatáčka, zavíjec	zádržka, zádumčivec, zádumčivost, zádumčivý, záhumenek, záchytka, zájemce, zájemkyně, základka, záklopka, zákonodárce, zákožka, zákrsek, zákusek, záložka, zálepka, zámeček, zámyčka, záměnka, záměrka, záminka, zámotek, zánožka, západka, zápalka, záporka, zápisek, zápletka, zápletkový, zápražka, záprška, záprtek, zápůjčka, zármutek, zárodečný, zárodek, zárodkový, zářivka, zásilka, zásmažka, zásuvka, zástěrka, zástěrkář, zástěrkový, zástrčka, zástřešek, zástupce, zástupkyně, zášijek, zátočka, zátylek, závazek, závdavek, závodčí, závorka, závěrečný, závěrka, závěsek, závěska, závlačka, zázvorka

The remaining 32 disobeying nouns instantiate 18 roots. In the following list, the number of nouns representing each root is given in brackets: √da (1), √han (2), hrad (6), hran (2), chvě (1), karpat (1), kon (2), lež (1), oceán (1), pad (2), sad (1), sob (3), stav (3), tk (2), val (1), vaz (1), vděk (1), vod (1). It is striking to observe that four of the nine roots that were singled out in section 3 because they were showing verbal forms with long prefixes also misbehave here: √lež, √sob, √tk and √vod give deverbal nouns that should bear short prefixes, but show length: *zá-lež-i-t-ost, zá-sob-en-í, zá-sob-ov-ac-í, zá-sob-ov-a-t-el, zá-tk-ov-ac-í, zá-tk-ov-n-ice, zá-vod-ěn-í*. The recurrent refusal of these particular roots to accept short prefixal vowels can hardly be regarded as accidental. We must therefore consider the possibility for certain roots to be "locked", i.e. to admit, for a reason to be discovered, only short or only long vowels. A candidate for the opposite prefixal value is the root √hrad: whatever the category or the first suffix, this root does never occur with prefixal length. Examples of denominal nouns from this root that nevertheless show short prefixes are *za-hrad-a, za-hrad-n-í, za-hrad-n-ice, za-hrad-ník, za-hrad-nic-k-ý, za-hrad-nic-tv-í*.

The remaining misbehaving nouns deserve more discussion, which space restrictions prevent me from providing. One more point is in order, though. It is quite obvious that recent loans such as √karpat and √oceán in *za-karpat-ský* and *za-oceán-ský* bear no prefixal length although they should because precisely they are loans. This is consistent with the view expressed earlier that the morphological structure which is relevant for the distribution of prefixal length is not the one that is synchronically operating. A reasonable hypothesis would be that new words will always receive short prefixes, whatever their morphological and derivational status.

The following algorithm represents the way prefixal length is derived in Czech. I wish to make clear that I do not assume an algorithm of that kind being active in the speaker's grammar. It merely represents the logical structure of the events as they are observed from the outside.

(9)			yes	no
			result:	prefix is
morphology	1.	last suffix (=word) verbal?	V	forth
	2.	first suffix verbal?	V	forth
phonology	3.	√…VV…?	V	forth
lexicon	4.	root locked?	V	VV

That is, for a given prefixed noun, first check whether its last suffix is verbal. If it is, the prefix will be short. If it is not, determine whether its first suffix is verbal. Again, if it is, the

prefix remains short. If it is not, phonology comes into play: if the root-vowel is long, prefixal shortness obtains. If not, the lexicon decides: in case the root is "locked" in the sense of the foregoing discussion, the prefix is short. Only denominal nouns bearing a short root-vowel and whose root is not "locked" possess prefixal length.

5. The Rhythmic Law in Slovak

A regularity concerning vowel quantity in Slovak is known as the Rythmic Law, e.g. Rubach (1993) and the literature therein. The formal description of the phenomenon given by Rubach (1993:43) states that "long vowels shorten if they are preceded by a long vowel". I have collected the various instances of the Rhythmic Law in Slovak morphology according to Rubach's data. The result is given under (10).

(10)

			Rhythmic Law		
			$\sqrt{}$…V… + suffix VV	$\sqrt{}$…VV… + suffix V	compare with
Adjec-tives	primary	NOM sg	mal-ý	múdr-y	
		GEN sg	mal-ého	múdr-eho	
		DAT sg	mal-ému	múdr-emu	
	secon-dary	NOM sg	čísel-n-ý	mlieč-n-y	císl-o, mliek-o
		GEN sg	čísel-n-ého	mlieč-n-eho	
		DAT sg	čísel-n-ému	mlieč-n-emu	
	-ský		dvor-ský	švéd-sky	
nouns	DAT pl	fem	bab-ám	lúk-am	bab-a, lúk-a
		neuter	zlat-ám	vín-am	zlat-o, vín-o
	LOC pl	fem	par-ách	lúk-ach	par-a
		neuter	zlat-ách	vín-ach	
	NOM pl	neuter	zlat-á	vín-a	
	diminu-tive	-ík	hotel-ík	telefón-ik	
			chleb-ík	džbán-ik	
	agentive	-ník	hut-ník	montáž-nik	hut-a, montáž
verbs	present gerund	-úc	nes-úc	rýp-uc	niest', rýpat'
	present	1st sg -iem	plet-iem	driem-em	
		-ím	pros-ím	chvál-im	prosit', chválit'
		-ám	vol-ám	rát-am	
		3rd pl -ú	plet-ú	driem-u	

These examples show that the traditional formulation given by Rubach is correct.[5] However, it is purely linear and makes no reference to morphological structure at all. It is true that the simple description of the facts does not call for morphological information. Still, it is intriguing that all instances of the Rhythmic Law, as witnessed by the data shown, concern a sequence of two vowels whose first member is located in the root, and the second in a suffix. In the next section, I show how the Slovak and the Czech data may be accounted for by a single phonological process that is not linear but makes reference to morphology.

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[5] There are some true exceptions involving the agentive/ nominalizing –ár, the GENpl fem –í, the 3rd pl present -ia and the present gerund -iac as in *mliek-ár, básn-í, kúp-ia, súd-iac*, cf. Rubach (1993:174f). Other deviating sequences of long vowels are only apparent and may be reduced, cf. Rubach (1993:201ff). The agentive/ nominalizing –ár is also singled out because it sometimes provokes shortening "in the wrong sense": *slovník - slovnik-ár, milión - milion-ár* (Rubach 1993:171f).

6. The Root is the Master in both Czech and Slovak

Both the distribution of prefixal length in Czech and the one of suffixal length in Slovak may be viewed as obeying a simple regularity if the purely linear character of the Rhythmic Law is abandoned in favour of a morphological condition.

(11) Affixal Length in Czech and Slovak
   a. the length of affixes (=prefixes and suffixes) depends on the length of the morphological head of the structure, i.e. the root. If the root is long, the affix is short; if the root is short, the affix is long.
   b. hence, the overall weight of the morphological item [affix + root] is constant: 3 morae in all cases.[6]

This very general statement calls for some comments. First, as shown in the above discussion, Czech prefixes conform to (11) only in case the word is a denominal noun. This categorial condition remains entirely mysterious: why should nouns provoke length rather than short vowels, and why should verbs go along with shortness rather than with length?

Second, the only illustration I have adduced for (11) concerns Czech prefixes and Slovak suffixes. However, (11) covers four logical possibilities: what about the two missing configurations, i.e. Czech suffixes and Slovak prefixes?

The former actually are involved in an alternation concerning vowel length. Or rather, they preserve a trace of a formerly phonological alternation which is nowadays demoted to a system governed by lexical, idiosyncratic and morphological conditions. The alternation at stake occurs in one particular morphological instance, i.e. the feminine –a declension (*žena*). Case markers bearing a long vowel such as INSTsg -*ou*, DATpl –*ám* and LOCpl –*ách* provoke the shortening of the root-vowel of lexically long roots: NOMsg *blán-a, čár-a, kráv-a, dír-a, hlín-a* have INSTsg *blan-ou, čar-ou, krav-ou, děr-ou, hlin-ou*, DATpl *blan-ám, čar-ám, krav-ám, děr-ám, hlin-ám*, LOCpl *blan-ách, čar-ách, krav-ách, děr-ách, hlin-ách* (e.g. Trávníček 1947:481ff). However, this alternation is far from being regular. Some words do not alternate at all, cf. *báb-a, báb-ou, báb-ám, báb-ách*. Some speakers do produce alternations for the words shown, others don't, to the effect that for some words, both long and short forms coexist: *krav-ou* and *kráv-ou, děr-ou* and *dír-ou, hlin-ám* and *hlín-ám* etc. And to further complicate the picture, some short case markers do also provoke shortening, e.g. INSTpl *blan-ami, krav-ami, hlin-ami*. In short, we face a typical case of a lexicalised alternation that is not phonologically controlled anymore.[7]

Its interpretation in regard of (11) is not clear either. On one hand, there should be no doubt about the fact that it does constitute a trace of the prohibition of sequences of long vowels in the particular morphological site [affix + root]. The morphological condition on this alternation, assimilating it to (11), is evidenced by the fact that there is no general prohibition of sequences of long vowels in Czech, as long as they do not involve the morphologically sensitive site mentioned: *děl-**án-í**, ház-**ím**, do-týk-**ám**, váz-**án-í**, z-pív-**án-í**, získ-**áv-án-í**, dík-ů-vz-d-**án-í**. On the other hand, the directionality is odd: a sequence of two long vowels instantiating the site [root + suffix] does not provoke the shortening of the affix, but of the root, contra (11). The interpretation of this fact is not obvious, I believe that it may be understood only in diachronic terms. Whatever the diachronic events to be sorted out, the

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[6] With one restriction on Slovak suffixes: the *maximal*, not overall length of the Slovak item [root+affix] occupies a volume of three morae. If a short root meets a short suffix, no lengthening is observed.

[7] This view is also supported by the following observations: 1) if long and short forms coexist, the latter is always considered archaic (*víra-věrou,vírou, vláha-vlahou, vláhou*), 2) first names do not alternate at all (*Bára, Háta, Jára, Lída, Míla, Réza, Tóna*), 3) loans do not alternate (*Čína, Jáva*), 4) very frequent words do not alternate (*káva, máta, šťáva, třída, hrůza, půda, křída*).

žena-alternations shown do instantiate the third logical possibility offered by (11), i.e. a trace of the Rhythmic Law in Czech suffixes.

Finally, the fourth logical instance of (11) is predicted to concern Slovak prefixes. As a matter of fact, vowel-final prefixes in Slovak alternate just as they do in Czech. Rubach (1993:166) has kept track of these alternations, uttering correctly the nominal condition: "a prefix vowel is lengthened when it appears in an open syllable of a noun". He gives examples such as *zá-bava* "fun" (*za-bavit* "have fun"), *vý-plata* "pay (noun)" (*vy-platit* "to pay"), *ú-trata* "loss" (*u-tratit* "lose"), *prie-chod* "crossing" (*pre-chodit* "cross"), but concludes that "prefix lengthening has a considerable number of exceptions". Of course, I suspect Slovak prefixes to behave exactly as Czech prefixes do, Rubach's exceptions simply being deverbal nouns and those bearing a long root-vowel. Words like *za-kukl-en-ý* (departicipial), *za-klad-a-t-el'* (deinfinitival, vs. *zá-klad* "base") illustrate the former, items such as *za-klín-ač, za-hál'-ač* the latter class. I have not established the relevant Slovak corpus in order to be able to make a firm statement. A quick look at the relevant pages of a Slovak dictionary, however, shows that the prohibition *[[...VV]$_{prefix}$ [..VV..]$_{root}$] appears to be just as surface-true for *za-* in Slovak as it is in Czech.

7. Conclusion

The preceding pages have identified two distributional regularities concerning Czech vowel-final prefixes that had not been evidenced so far. On one hand, the categorial and derivational properties "noun vs. verb" and "denominal vs. deverbal" determine the possibility for a word to occur with a long prefix. Only denominal nouns may possess prefixal length. However, its realisation hangs on another condition, which is not of categorial but of phonological kind: denominal nouns occur with long prefixes only if their root-vowel is not long. The corresponding restriction *[[...VV]$_{prefix}$ [..VV..]$_{root}$] is surface-true in Czech. Hence, it appears that the distribution of prefixal length is distributed according to a hierarchiesed pool of categorial, derivational and phonological conditions in the sense of (9). While the phonological prohibition of two consecutive long vowels in the particular morphological site [prefix + root] is transparent, the reason why nominality rather than verbality should go along with length remains entirely mysterious. Its treatment appeals to areas of grammar that are poorly understood, i.e. the interfaces between phonology, morphology and syntax.

In a second step, the similarity of the alternation discussed with the well known Rhythmic Law in Slovak has been identified. Both are prohibitions of sequences of long vowels in a particular morphological environment, i.e. [prefix+root] in Czech, [root+suffix] in Slovak. The two processes are obviously related, and the generalisation covering all data has been stated under (11): the morphological compound [affix+root] enjoys a constant vocalic quantity in both languages, i.e. 3 morae. This move modifies the usual interpretation of the Slovak facts in replacing their purely linear statement by a formulation that makes crucial reference to morphological structure. In both Czech and Slovak, directionality of the shortening process is irrelevant. The length of the morphological head of the structure, i.e. the root, is lexical and free. The dependent affixes contribute the missing vocalic quantity.

Manifestations of the prohibition of two consecutive long vowels within the site [affix+root] have also been identified for Czech suffixes and Slovak prefixes. While the latter demand further research but seem to work like their Czech cognates, the former entail consequences for the root vowel, not the affix, against expectation.

The reason I invoke for this fact is more general. It underlies the entire set of data discussed in this article: none of the alternations mentioned are synchronically active. What we see today are traces of an ancient system that was subject to phonological conditions. It is reasonable to assume that the time by which the alternations were synchronically active was the common ancestor of Czech and Slovak, or even of the entire West Slavic family. In any case, we do not possess any direct testimony of this stage of the language. Numerous facts lead to this view: 1) the segmentation that is needed in order to understand the distribution of

prefixal length in Czech vowel-final prefixes is synchronically opaque; 2) loans are not affected by the alternation (*za-karpat-ský, za-oceán-ský*); 3) the suffixal alternation (*blána – blan-ou*) in Czech is subject to numerous non-phonological conditions (only the *žena*-declension is affected, unproductive, different speakers produce different forms etc.); 4) the Slovak data are also subject to lexical exceptions, cf. the abnormal behaviour of the agentive/nominalizing *–ár* mentioned. In short, (11) is not a generalisation governing the phonology of actual Czech and Slovak, but regards a former (common) stage of these languages.

Finally, the restriction "3 morae and only 3 morae for the morphological item [prefix+root]" that is valid for Czech denominal nouns is of truly templatic nature in the semiticists' sense. A templatic language is a language where a given volume of melodic (consonantal or vocalic or both) space is allocated to a certain morphologically defined form. For instance, "3 and only 3 consonants" is a common restriction imposed on the semantically unmarked form I in many Semitic languages such as Classical Arabic. Thus, roots which possess only two consonants lexically fill in the third slot by either creating a glide or doubling their second consonant, cf. the root √hm "stir, discomfit" in Biblical Hebrew which appears as both /h-m-m/ and /h-w-m/ (Frajzyngier 1979,2). In this sense, the melodic restriction "3 and only 3 morae" associated with the morphological object "[prefix+root]" is templatic (cf. Scheer 1998 for more discussion).[8] Languages are usually devided into templatic and non-templatic, and this opposition is assumed to follow genetic kinship, e.g. Afro-Asiatic = templatic vs. Indo-European = non-templatic. The Czech situation casts doubt on a strict division of that kind. Rather, it suggests that languages that are reputed to be non-templatic may well host a templatic system in a particular and very restricted area of their morphology. Or, in other words, everybody knows that all "templatic" languages also recur to concatenative morphology. It may well be that "non-templatic" languages do also make use of templatic morphology. The difference, then, should not be described as a principled opposition, but rather as one where the amount of templaticity a language possesses is variable.

References

Benveniste, E. (1935): Esquisse d'une théorie de la racine. In: Benveniste, Emile: *Origines de la formation des noms en Indo-Européen*. Fifth edition 1984, Paris: Maisonneuve, 147-173.

Frajzyngier, Z. (1979): Notes on the RRR stems in semitic. *Journal of semitic studies* 24, 1-12.

Holub, J. & F. Kopečný (1952): *Etymologický slovník jazyka českého*. Praha: SNU.

Rubach, J. (1993): *The Lexical Phonology of Slovak*. Oxford: Clarendon.

Scheer, T. (1996): *Une théorie de l'interaction directe entre consonnes*. Ph.D. thesis, Université Paris 7.

Scheer, T. (1997): Vowel-zero alternations and their support for a theory of consonantal interaction. *Certamen Phonologicum III, edited by P.M. Bertinetto, L. Gaeta, G. Jetchev and D.Michaels*. Torino: Rosenberg & Sellier, 67-88.

Scheer, T. (1998): Governing domains are head-final. In: Cyran, E. (ed): *Structure and Interpretation. Studies in Phonology*. Lublin: Folium, 261-285.

Scheer, T. (2000): *De la Localité, de la Morphologie et de la Phonologie en Phonologie*. Habilitation thesis, Université de Nice.

Trávníček, F. (1947): *Mluvnice spisovné češtiny*. Část I. Praha: Melantrich.

Ulbrich, R. (1978): *Langenscheidts Taschenwörterbuch der tschechischen und deutschen Sprache. Erster Teil Tschechisch-Deutsch*. 10th edition, Berlin, München, Wien, Zürich, New York: Langenscheidt.

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[8] Although one difference remains: the morphological item "[prefix+root]" has no associated Signifié, i.e. is not a morpheme, whereas most of the Afro-Asiatic templates do possess a meaning.