

INTONATION AND LENGTH IN THE SLOVENE GENITIVE PLURAL

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One of the most complex prosodic systems among the Slavic languages is the accent pattern of Contemporary Standard Slovene (CSS) as represented by the central Slovene dialects and the literary language (Pleteršnik 1894) before the intonational distinctions were lost (Slovenski pravopis 1950; Stankiewicz 1959). It has been claimed that the three intonational patterns of Slovene, the long rising ($\acute{\text{}}$), the long falling ($\grave{\text{}}$), and the short stressed ($\`$), can be derived simply from underlying distinctions in length and the placement of stress (Stankiewicz 1979, Halle 1971).

On the basis of the genitive plural forms which exhibit alternations of both length and intonation, I will show that not only is it unnecessary to postulate phonemic length distinctions for CSS, but that an analysis which treats length as completely rule-derived can predict the direction of possible change in this system. The analysis given here claims that CSS has a special rule of lengthening in the genitive plural category. This rule, at one time phonetically motivated, is now morphologically conditioned. Since the rule implements a true functional distinction between the NSg and the GPl only in a small number of nouns, e.g., *kònj* NSg, *kónj* GPl, that is, it is NOT the sole marker of the grammatical category and therefore functionally unmotivated (Kestowicz 1981), one expects the application of this rule to be eventually curtailed.

Long vowels in CSS are generally found before other vowels.¹ In some paradigms a long stem vowel is maintained throughout. In others there may be an alternation of length. Examples are given in (1).

(1) Nsg lípa	Npl lípe	Nsg ràk	Npl ráki
A lípo	A lípe	A ráka	A ráke
G lípe	G lîp	G ráka	G rákov
D lípi	D lípam	D ráku	D rákom
I lípo	I lípami	I rákom	I ráki
L lípi	L lípah	L ráku	L rákih
	'linden tree'		'crab'

Long stem vowels are much more frequent in the GPl than in the NSg, both before a vocalic desinence, e.g., *râkov*, and before no overt desinence, e.g., *kónj*.

Stress in Slovene can be lexically marked in the underlying representation or it can be assigned by one of two stress rules, the OXYTONE rule and the CIRCUMFLEX rule (given in A).²

(A) OXYTONE rule

$$\phi \rightarrow \text{*/} \quad \text{a) } \partial\text{C}]_{\text{stem}} + (\text{V}) \bar{\text{V}} (\text{CV})$$

$$\text{b) }]_{\text{stem}} + \text{V} \bar{\text{V}} (\text{CV})$$

c)]_{stem} + ^[-] am
ah
ami
ama
ov

d) C(V) ^[-] VC]_{stem}

CIRCUMFLEX rule

$\phi \rightarrow \check{V}_i /$ a) ##CVC ___ V_i (Strong cases, listed)
b) ##C ___ V_iC##

The three types of stress derivations are briefly given in (2).

(2) /l[̇]ip+a/ + lengthening → /liip+a/ → lípa, n sg
/gor+a/ + oxytone → /g[̇]or+a/ + lengthening → /go[̇]or+a/ → góra, n sg
/gor+o/ + circumflex → /gor+[̇]oo/ + other rules /gor+[̇]o/ gorô, acc sg

Long vowels in CSS are stressed, therefore there is a particularly strong association between stress and length. This may be analyzed as the result of the application of a phonological lengthening rule. Stressed vowels, except /ə/, become long before another vowel. The rule can be written as the Vowel Lengthening before Vowel Rule (VLV) given in (B).

(B) Vowel Lengthening Before Vowel Rule (VLV)

V → V / ___ C₁V (not applicable to /ə/)
[+stress] [+long]

In the history of the language, VLV is a fairly late rule, entering Slovene sometime in the 16th century. It thus followed the retraction of the oxytone or end-stress from the last syllable to the preceding one.

Let us now address the alternations found specifically in the GPI of CSS nouns. The alternations are primarily of two types, that of length and that of intonation. For purposes of this paper we will compare the NSg with the GPI. Both cases historically lost a jer desinence. In terms of phonological changes, given the identical phonological environment, i.e., loss of a final vowel and resulting newly closed syllables, one might expect a similar phonological development in these two cases. But whereas there may be short stressed stem vowels in the NSg, as in *bòb* 'bean' or *otròk* 'servant', there are no (non-ə) short stressed stem vowels in the GPI. The GPI category seems to be associated with length.

The two cases also differ with respect to intonation. There is a shift from rising intonation in the NSg to a falling one in the GPI, and a shift from falling in the NSg to rising in the GPI. There are also paradigms with no intonation shift.

Let us first discuss the alternation of length. The data are given in (3).

(3) <u>nom sg</u>	<u>gen pl</u>	<u>gloss</u>
góra	gór	mountain
véža	věž	tower
žéna	žen	woman
kósa	kôs	scythe
nóga	nóg	leg

Although on the surface both forms of the paradigm exhibit long stem vowels, it is the alternation of the mid open /e/, /o/ with the closed or raised /e̞/, /o̞/ that argues for an underlying short vowel in these forms. We know from the history of the language that there was a raising process by which long mid vowels became closed/raised /e̞/, /o̞/. This process took place before the 16th century, that is, before the VLV rule came into the grammar. The alternation in the mid vowels is linked to vowel length at some point in the development of the language, and in a synchronic analysis this alternation is linked to differences in vowel length at various stages of the derivation.

The forms *góra*, *kósa* and *véža* may be derived from an underlying short vowel by the application of the VLV rule. Note that any rule raising long mid vowels must be ordered to apply before the VLV rule here. In this respect the GPL forms are interesting. They also exhibit a long vowel, but it cannot be derived by the VLV rule since there is no vowel following the stem vowel.

One could postulate some overt vocalic desinence in the GPL to motivate the VLV rule, and then this desinential vowel could be subsequently deleted.³ This analysis would then claim that lengthening in the GPL is the same process as is found elsewhere in the paradigm. But note that this analysis results in an ordering paradox with respect to the raising of the mid vowels, in that for the NSg RAISING must precede the VLV rule, but in the GPL it seems that RAISING must follow the VLV rule.

The other possibility is to consider the long vowel in the GPL to be derived by a special rule of lengthening. The rule is a type of morphologized phonological rule in that it is no longer phonetically motivated, perhaps as a type of compensatory lengthening, but it is now simply conditioned by the morphological category of the GPL, given in (C).

(C) Genitive Plural Lengthening (GPL)

$$V \rightarrow \bar{V} / \text{ ______ } C\# \{ \text{gen pl} \}$$

More important is the fact that the GPL rule offers an account of the alternation in the mid vowels. One would simply order the rules as follows, (4):

- (4) GPL
RAISING
VLV

This analysis claims that GPL is a different type of rule from VLV. It is not likely that in further phonological development these two rules will become associated as part of the same process. There is other indirect evidence that two lengthening rules are operative in Slovene. Certain dialects still show a difference between the old rising pitch found in the GPL, and the new rising pitch found on long vowels as in (5):

<u>gen pl</u>	<u>gloss</u>	<u>nom sg</u>	<u>gloss</u>
(5) nóg [nux]	leg	kóza [kuoza]	goat
kónj [kuin]	horse	ósəm [uosəm]	eight
vód [wut]	water		

The second type of alternation found in the GPI is the alternation of intonation. Data are given in (6) and (7). The nouns in (6) are the traditionally acute stress pattern, and in this analysis they occur with stress already marked in the underlying representation. Nouns in (7) are mobile types and are assigned stress by the OXYTONE or by the CIRCUMFLEX rule.

(6)	<u>nom sg</u>	<u>gen pl</u>	<u>gloss</u>
	lípa	líp	linden
	kóža	kôž	fur
	jáma	jâm	hole
	lopáta	lopât	shovel
	ríba	rîb	fish
	igráča	igrâč	toy
(7)	<u>nom sg</u>	<u>gen pl</u>	<u>gloss</u>
	zôb	zôb	tooth
	môž	môž	husband
	lâs	lâs	hair
	vôz	vôz	cart
	cf. kónj	kónj	'horse'

Note that the nouns in (6) exhibit metatony from rising to falling intonation in the GPI, while those in (7) have a shift from falling in the NSg to rising in the GPI. Differences in intonation have been accounted for by a difference in the placement of stress (Stankiewicz 1979). Stankiewicz identifies forms which retain end stress in the GPI, e.g., / $\text{ok}\#n + \#$ / and / $\text{sél} + \#$ /, and these are said to surface with a rising accent, *ókán*, *sél*. Forms in which the stress is shifted to the stem, e.g., /*vesâl*/ and /*sél*/, exhibit a long falling intonation, e.g., *vesâl*, *sêl*. The nouns discussed by Stankiewicz are not acute nouns, but there is a shift of intonation in this group also. It is difficult to motivate a type of stress shift in the fixed acute paradigm. There may also be objections to postulating an abstract segment / $\#$ / which is somehow capable of bearing stress.

Recall that our analysis so far has motivated two lengthening rules for CSS: i) the GPL rule and ii) the VLV rule. The former is a morphologically-conditioned rule while the latter is a more general phonological rule. The GPL rule was shown to be applicable in the mobile nouns given in (3). As a marker of the GPI category, we would expect the GPL rule to be applicable to the derivations of all GPI forms.

Let us first consider the acute nouns in (6). In many analyses, this group is considered to have underlying long vowels⁴. But it is not necessary to postulate underlying long vowels here. Recall that there is a general rule of lengthening stressed vowels before another vowel in Slovene, VLV. It may then be possible to take the stem vowels in these paradigms as underlyingly short. This vowel occurs with a mark for stress in the underlying representation. In most of the paradigm the VLV rule applies.

Rewritten in terms of mora structure, the rule has the following form, (D):

$$(D) \text{ VLV } \phi \rightarrow V_1 / \text{---} \check{V}_1 \text{ C V} \quad (x = \text{stress})$$

In the GPl, where there is no vowel, the GPL rule applies. In terms of moras it can be rewritten as follows, (E):

$$(E) \text{ GPL } \phi \rightarrow V_1 / \text{CV}_1 \text{---} (\text{C})\# \quad \text{gen pl, masc, fem.}$$

The derivation of *lípa* and *líp* is given in (8):

(8)		/líp+a/ nsg	/líp/ gpl
GPL		—	líp
VLV		líp+a	—
		<u>lípa</u>	<u>líp</u>

The sequence $V\check{V}$ is interpreted as rising intonation, $\check{V}V$ as falling intonation (for more discussion, see Becker 1978). Thus the shift in intonation is a direct consequence of the GPL and no rules of stress-retraction or other metatony rules (Halle 1971) are needed for this paradigm⁵. This analysis has two main advantages: i) it does not need to postulate stress shifts in a fixed paradigm, and ii) the GPL, which is needed elsewhere in the grammar (3), applies regularly in this paradigm too.

There would be additional support for this analysis if the intonation shift exemplified by the nouns in (7) could be derived by the interaction of rules already established for CSS. This is actually possible, as is shown in (9). The falling intonation is derived by the CIRCUMFLEX rule.⁶ Nouns, and particular cases subject to this rule, are specially marked in the lexicon. The CIRCUMFLEX rule precedes the OXYTONE rule in that its application is much more restricted.

(9)		/las/ nsg	/las/ gpl
GPL		—	laas
CIRC		lãas	—
OXY		—	laãs
		<u>lâs</u>	<u>lás</u>

The rising intonation in the GPl of nouns in (3) can likewise be derived by rules already motivated for the grammar. The derivation of *žéna* and *žén* is given in (10):

(10)		/žen+a/ nsg	/žen/ gpl
GPL		—	žeen
Raise		—	žęęn
OXY		žéna	žęęň
VLV		žeěna	—
		<u>žéna</u>	<u>žén</u>

This analysis claims that intonational differences within the two mobile paradigms are the result of differences in the assignment and application of the two lengthening rules. The intonation shift from rising in the NSg to falling in the GPl of the fixed paradigm is also derivable by the interaction of the lengthening rules and the place of stress.

There is a very significant correlation of stress and length in Slovene. Note that the VLV rule applies only to stressed vowels. Moreover, there are no short stressed vowels in the GPl of these paradigms. Given this close relationship between stress and length and the necessity of postulating a VLV rule, it is possible to postulate underlying short stem vowels. This system considers length completely rule-derived, whether by the GPL rule or by the VLV rule. It is not necessary to assume underlying distinctions of length in CSS (except for some morphological desinences, see Becker and Bethin 1984).

The GPL rule is morphologically conditioned and thus differs from VLV. It is expected that subsequent changes in the language may differentiate between the two rules. Morphologically-conditioned rules are most likely to remain in the grammar if they uniquely serve as markers of a morphological category. Since most CSS paradigms exhibit an overt opposition between the NSg and the GPl in the form of an overt desinence in one of the two cases, the GPL rule is not the sole marker of the GPl. It is therefore subject to possible curtailment (Kenstowicz 1981). Were this to happen, length in Slovene would then be derived by the VLV rule alone. This would mean the restructuring of the system, since it is clear that Slovene did at one time have underlying distinctions of length. The restructured system would entail a reanalysis of the alternation in the mid vowels, previously derived by the RAISING rule, in that now underlying distinctions in length or those derived by the GPL rule could no longer be exploited to account for the mid vowel alternation. The two types of mid vowels, the open/lower /e/, /o/ and the closed/raised /ɛ/, /ɔ/ would then become phonemic.

The analysis of CSS given here, which does not postulate underlying distinctions of length, claims that length in Slovene is rule-derived. The loss of the GPL rule leaves a system in which all length is derived by VLV. Exactly such a system is actually found in the colloquial dialect discussed in Stankiewicz (1959:75-76). The system has no underlying long vowels. The only vowels that are phonetically long are stressed vowels found in position before another syllable, in other words the outputs of the VLV rule. The closed/raised mid vowels are phonemic in this system. In colloquial Slovene differences in length and stress have been replaced by simple differences in stress. This linguistic change is predictable and in some ways more easily understood given an analysis of CSS which postulates stress as an underlying distinction and treats length as rule-derived.

In conclusion, the preceding discussion has shown that differences in length as well as differences in intonation in the GPl of CSS may be accounted for by a GPL rule. There is no need to postulate metatony rules (stress retraction rules), or an underlying desinence in the GPl. It was suggested, moreover, that this analysis makes certain predictions about the probable direction of linguistic change in Slovene, namely, it predicts that the GPL rule may be curtailed without affecting the more general VLV rule. This restructured system would consider the placement of stress fundamental and, indeed, this seems to be the case for colloquial Slovene (Stankiewicz 1979).

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1. The alternation of long vowels in the NSg with short vowels elsewhere is rather infrequent and best derived by a lexically conditioned minor rule of lengthening in the NSg. These are clearly historical remnants. Examples of this length are

- found in: *bôg, bogâ* 'God'; *dôm, domû* 'home'; *grâd, gradû* 'town'; *môž, možâ* 'husband', *strâh, strahû* 'fear'. There are many NSg forms which do not show length: *brât, brâta* 'brother'; *přst, přsta* 'finger'; *klèn, kléna* 'wedge', etc.
2. A more detailed discussion of the synchronic rules and their application in Slovene is found in Becker and Bethin (1984).
 3. This analysis is reminiscent of the reconstruction of the jers. Not only is the postulation of an "abstract" vowel here to motivate the VLV rule in the GPI somewhat ad hoc, but even the historical facts do not support this proposal, since the GPI jer desinence was lost long before the VLV rule came into the language.
 4. The occurrence of the closed/raised mid vowels throughout the fixed paradigm suggested to some analysts that the vowels should be analyzed as underlyingly long (Halle 1971). They are then subject to the RAISING rule. For our analysis, the closed/raised mid vowels in this paradigm would have to occur as such in the underlying representation. Given the nature of the phonological developments in Slovene, this indeed seems to be the case.
 5. This would also be true in the event that the vowels were postulated as long underlyingly. The GPL yields "extra" long vowels: $V\check{V} \rightarrow V\check{V}V$. Mora deletion conventions (Becker 1978) would simplify this to $\check{V}V$, which then surfaces with falling intonation.

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