Epenthesis in Serbo-Croatian neuter noun inflection

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Serbo-Croatian (SC) neuter nouns exhibit stem allomorphy; in this paper I show that these allomorphs are not listed but rather predictable. Contra **[1]**, **[4]**, **[5]**, however, who also find patterns but resort to positing distinct inflectional subclasses, I argue for morphologically conditioned consonant insertion, which treats all SC neuter nouns in a uniform way.

Neuter nouns in SC inflect similarly to masculine nouns: their stems, mostly consonant-final, receive largely the same case endings, which are vowel-initial – the difference being the nominative suffix in both singular and plural, and the accusative and vocative patterning after the nom. (Table 1).

Table 1. Inflection of masculine *zavod* 'institute' and neuter *selo* 'village' in SC

	MASCULINE		NEUTER	
	SG.	PL.	SG.	PL.
NOM.	zavod	zavod-i	sel-o	sel-a
GEN.	zavod-a	zavod-a:	sel-a	sel-a:
DAT.- LOC.	zavod-u	zavod-ima	sel-u	sel-ima
ACC.	zavod	zavod-e	sel-o	sel-a
VOC.	zavod-e	zavod-i	sel-o	sel-a
INS.	zavod-om	zavod-ima	sel-om	sel-ima

However, a significant number of neuter nouns inflect by the following pattern; the nom.sg. receives no suffix, and there is an extra consonant (absent from nom.) in the oblique cases:

Table 2. Inflection of SC neuter nouns *ime* 'name' and *uže* 'rope'

	SG.	PL.
NOM.	uʒe	*irregular*
GEN.	uʒe-t-a	*(collective nouns are used)*
DAT.- LOC.	uʒe-t-u	
ACC.	uʒe	
VOC.	uʒe	
INS.	uʒe-t-om	

	SG.	PL.
NOM.	ime	ime-n-a
GEN.	ime-n-a	ime-n-a:
DAT.- LOC.	ime-n-u	ime-n-ima
ACC.	ime	ime-n-a
VOC.	ime	ime-n-a
INS.	ime-n-om	ime-n-ima

In the literature, these have been proposed to be: (a) V-final stems with stem extenders, forming a subclass of neuter nouns on their own **[1]**; (b) C-final stems with truncation in the nom.sg. **[4]**; (c) C-final stems with CV extenders **[5]**. These are all problematic: (a) subdivisions should be avoided if the paradigm complexity can be described as resulting from predictable stem allomorphy; (b) the motivation for truncation is unclear, as well as how we would restrict it only to the pertinent cases; (c) we would have two different nom.sg. suffixes, *o* and *e*, with no way of predicting their distribution – nor that of the stem extenders. I claim that the pattern is uniform: stems that exhibit this behavior are *e*-final; those that are extended with *n* end in *me*. Stems that are extended with *t*, on the other hand, can have a number of different consonants preceding the stem-final *e.* This makes *t* the default, *elsewhere* stem extender for *e*-final stems.

I argue that stem extenders are morphologically conditioned**;** in neuter nouns, *n* and *t* are inserted after an *e*-final stem if another suffix is added onto it. That is to say, *e*-final stems are extended with a C in order to receive additional suffixes (this goes beyond inflection; e.g. adjective formation with *-ski* would give *imenski* from *ime* 'name'). V-final stems are normally extended with an oral stop (*t*), but in a more specific context (*me*-final stems), a nasal stop (*n*) is used.

Exceptions in both cases (e.g. *dugme* 'button' – *dugmeta*; *kafe* 'café' – *kafea*) adhere to *exceptional-case default* **[3]**, by which lexical exceptions to a rule tend to abide by the more general rule (i.e. *t*-insertion instead of *n*-insertion; no C insertion instead of *t*-insertion).

The form of the stem apparently influences the surface form of a neuter noun, while the shared case endings indicate that all masculine and neuter nouns belong to the same inflection class; in this paper, this is formally accounted for in Paradigm Function Morphology (PFM; **[6]**). A paradigm function takes the form of a set of realization rules, which are organized in successive blocks; for instance, the analysis of IME's {gen sg} form *imena* in SC involves 3 successive steps – choosing the basic stem *ime*, inserting the stem extender *n*, suffixing the {gen sg} exponent *a*.

Rules in different blocks are in syntagmatic opposition; rules belonging to the same block are in paradigmatic opposition. The choice among rules is governed by Pāṇini's principle **[2]** – if two rules are in competition, the rule that applies in a narrower class of cases wins. Pāṇini's principle can be appealed to in order to account for the distribution of stem extenders in SC: for all neuter nouns whose stem ends in *e*, if the stem ends in *me*, the inserted consonant is *n*; otherwise it is *t*.

Rules of basic stem choice are clauses in the definition of the function ***Stem***, which applies to a cell in a lexeme's paradigm to yield the basic stem choice for the proper realization of the cell in question. For SC neuter nouns in Tables 1 and 2, the rules of basic stem choice are in (1).

(1) a. ***Stem***(<ZAVOD, σ:{}>) = <*zavod*, σ>
b. ***Stem***(<SELO, σ:{}>) = <*sel*, σ>
c. ***Stem***(<UŽE, σ:{}>) = <*uʒe*, σ>
d. ***Stem***(<IME, σ:{}>) = <*ime*, σ>

Rules of exponence then define how affixes are added onto stems (Table 3). They apply if they can; otherwise, stem X remains unchanged in the default case (Identity Function Default principle [IFD]):

Table 3. Rules of exponence for SC Class I nouns

Block I
I1. I, $X_{N\ [CLASS\ I]}$, {nom sg n} → X*o*, if X has the form Y*C*
I2. I, $X_{N\ [CLASS\ I]}$, {acc pl m} → X*e*
I3. I, $X_{N\ [CLASS\ I]}$, {gen sg} → X*a*
I4. I, $X_{N\ [CLASS\ I]}$, {dat sg} → X*u*
I5. I, $X_{N\ [CLASS\ I]}$, {ins sg} → X*om*
I6. I, $X_{N\ [CLASS\ I]}$, {gen pl} → X*a:*
I7. I, $X_{N\ [CLASS\ I]}$, {dat pl} → X*ima*
I, X_U, {} → X [IFD]

Crucially, *t*/*n* insertion would not be realized by a rule like those in Table 3, as the addition of these consonants presumably does not realize any morphosyntactic property; instead, this sort of generalization might be captured by means of a morphological metageneralization (2) – a rule that applies on a whole class of realization rules. Morphological metageneralizations also account for regularities in the application of ordinary morphophonological rules **[6]**.

(2) Where R is in Block I, (3) ∈ ϕ_R.

(3) Where $RR_{n,\tau,C}$(<X,σ>)=<Y',σ>,
if X is a basic stem having the form W*me*, and Y is XZ, then <Y',σ>= $RR_{n,\tau,C}$(<X*n*Z,σ>);
if X is a basic stem having the form W*e*, and Y is XZ, then <Y',σ>= $RR_{n,\tau,C}$(<X*t*Z,σ>).

Finally, as can be seen in Tables 1 and 2, many cells exhibit syncretism; this is modeled by rules of referral, which explicitly relate the realization of one cell to that of another cell. For instance:

(4) **I8.** I, $X_{N\ [CLASS\ I]}$, σ:{nom sg} → Y, where [I: <X,σ/{acc sg}>] = <Y,σ>
I9. I, $X_{N\ [CLASS\ I]}$, σ:{dat pl} → Y, where [I : <X, σ/{ins pl}>] = <Y, σ>
I10. I, $X_{N\ [CLASS\ I]}$, σ:{acc pl m} → Y, where [I : <X, σ/{voc sg m}>] = <Y, σ> (etc.)

The present approach is a means to avoid stipulating listed stems, accounting for the data as following a uniform pattern – assuming unpredictable stem allomorphs would basically reduce the phenomenon to an accident. Assuming a stem formation generalization , the generalizations can be expressed explicitly and overtly, and with PFM, the data can be accounted for in a direct and parsimonious way. Ultimately, the approach outlined here can be extended to any realizational framework that uses ordered rules.

Selected references: **[1]** Barić, E. *et al.* (1995). *Hrvatska gramatika*. Zagreb: Matica hrvatska. **[2]** Bonami, O., & Stump, G. T. (2016). Paradigm Function Morphology. In A. Hippisley, & S. T. Gregory (Eds.), *Cambridge Handbook of Morphology* (pp. 449-481). Cambridge: CUP. **[3]** Brown, D. & Hippisley, A. (2012). *Network morphology*. Cambridge: Cambridge University Press. **[4]** Brozović, D. (2006). *Neka bitna pitanja hrvatskoga jezičnog standarda.* Zagreb: Školska knjiga. **[5]** Šljivić-Šimšić, B. (1984). Neuter nouns in -∅ or neuter nouns in -e with extended stems in Standard Serbo-Croatian*. Folia Slavica, 6*(3), 372-388. **[6]** Stump, G. T. (2001). *Inflectional morphology: A theory of paradigm structure.* Cambridge: CUP.