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► To cite this version:

Olivier Rizzolo. The syllable is not a valid constituent: evidence from two Serbo-Croatian language games. Ulyana Savchenko, Magda Golezdzinowska, Richard Compton (eds.). Formal Approaches to Slavic Linguistics 15: The Toronto Meeting, Michigan Slavic Publications, pp.264-281, 2006. hal-01358958

HAL Id: hal-01358958

<https://hal.science/hal-01358958>

Submitted on 29 Sep 2016

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The Syllable Is Not a Valid Constituent: Evidence from Two Serbo-Croatian Language Games

Olivier Rizzolo

Université de Nice-Sophia Antipolis, UMR 6039

The purpose of this article is to show how the functioning of two Serbo-Croatian language games, Šatrovački and Utrovački, provides insight into the architecture of phonological representations.

In section 2, I start by briefly presenting language games: what are they? why are they of any interest to phonology? Then, the first language game addressed in this paper, i.e. Šatrovački, is introduced. After having given an account of its basic mechanism (section 3.1) and provided some illustration (section 3.2), I show why it calls for the existence of empty nuclei after word-final consonants (cf. section 3.5). Finally, the second language game presented here, i.e. Utrovački, is dealt with. After having introduced its general mechanism (section 4.1), I show that it questions the validity of the syllabic node as a syllabic constituent (section 4.3). Hence the data at hand cannot be accounted for in a classical syllabic framework. After looking back at data from Šatrovački (section 5), I show how a shift in perspective may offer a solution (section 6).

2 Language games

2.1 A brief definition

Language games are alternate linguistic systems; they are found in nearly every human language. Whether they are called ‘language games’, ‘ludlings’ (from Latin *ludus* ‘game’ and *lingua* ‘language’), ‘secret language’ or ‘speech disguise’, they boil down to the same reality: they are characterized by a relatively restricted sociolinguistic function, a small speaker population and an uncertain acquisitional process. In terms of formal structure, the morpho-phonological operations present in language games prove to be systematic and principle-governed and differ from ordinary languages in a quantitative way (number of operations) rather

than in a qualitative way (type of mechanisms¹). Thus language games, in other words, have ‘mini-grammars’ (cf. McCarthy 1986, Bagemihl 1995).

2.2 Why is their study of interest?

The major interest lies here: speakers of language games consciously (or half-consciously) manipulate abstract units such as syllables when they turn a standard language input into the corresponding language game output. This confirms their access to more abstract levels of representation than the phonetic level (cf. McCarthy 1986). Moreover, language games guarantee the synchronic and immediate nature of morpho-phonological operations. Such data as opposed to ‘ordinary’ phonological data do not raise the classical problem of the lexical and diachronic status of the item under observation: here everything is the result of an online cognitive operation (at least when a speaker builds a word that he never heard before). This state of affairs, the online construction, is of great interest when one wants to evaluate the status of abstract objects such as the syllable: speakers manipulate abstract objects; we can in return analyse their production and have a chance to observe what object was actually manipulated.

3 Šatrovački

3.1 Šatrovački: a sketch

Šatrovački is a Serbo-Croatian language game. It is mainly spoken in the area of Belgrade (Serbia) by an urban/suburban youth. Its basic mechanism is reversal and, therefore, it is close to French verlan (see among others Plénat 1992). We observe for those two languages:

- (1) French verlan: *mater* [mate] ‘to stare at (slang)’ > *téma* [tema], *herbe* [ɛʁb] ‘grass’ > *beuer* [bœʁ], *cigarette* [sigʁɛt] ‘cigarette’ > *garetsi* [gʁɛtsi].

¹ Among other mechanisms we do observe: reduplication, infixing/affixing, templatic activity, size constraints and metathesis.

- (2) Šatrovački: *piće* [pit̩ɕe] ‘drink’ > *ćepi* [t̩ɕepi], *jezivo* [jezivo] ‘horrible’ > *zivoje* [zivoje], *hleb* [xleɐb] ‘bread’ > *bəhle* [bəxleɐ].

The data under (2) immediately reveal the mechanism at stake in Šatrovački: syllables are reversed. Thus, an input with the shape $C_1V_1C_2V_2$ will simply turn into an output $C_2V_2C_1V_1$, e.g. *piće* [pit̩ɕe] ‘drink’ > *ćepi* [t̩ɕepi]. This is everything but surprising in the typology of language games; other languages, not genetically related to French and Serbo-Croatian such as Luganda (Niger-Congo) or Wolof (Niger-Congo)² show similar facts:

- (3) Luganda: [kimuli] ‘flower’ > [limuki], [mukono] ‘arm’ > [nokomu], [mubinikolo] ‘chimney’ > [lokonibimu]
- (4) Wolof: [sama] ‘my’ > [masa], [doom] ‘child’ > [mɛdoo], [yobbu ko] ‘bring it’ > [buko yoo]

All this clearly suggests that reversal is a type of a cross-linguistically well attested mechanism in the language game zoo. This last point is of course of interest in a typological perspective.

3.2 Šatrovački data: an overview

The data that are presented here come from field work with “native” speakers of Šatrovački that I have conducted in summer 2004.³ The corpus collected contains 194 words and is available as a whole in Rizzolo (2004).

There are three types of Serbo-Croatian inputs to be considered: mono-, bi- and trisyllabic. The distribution in the corpus is the following: monosyllabic inputs: 23, bisyllabic inputs: 152, trisyllabic inputs: 19.

² Data come from Roca (1994: 11) and Kenstowicz (1994: 447).

³ Data were collected with the help of two Serbo-Croatian speakers. One of them is a thirty year old man who works as an engineer in Germany; the other one is a twenty-eight year old woman who lives in France and who was trained as a linguist.

(5) Šatrovački: an overview

Šatrovački	standard Serbo-Croatian	gloss
	<i>monosyllables</i>	
cəvi	vic	joke
pəstri	strip	comic strip
təcve	cvet	flower
	<i>bisyllables</i>	
ćepe	piće	drink
fićka	kafić	café
šimpu	pušim	I smoke
	<i>trisyllables</i>	
rijamu	murija	police (slang)
šenjepu	pušenje	smoking
vanjedu	duvanje	smoking (slang)

Note on the spelling: c = [ts], ć = [tɕ], dž = [dʒ], č = [tʃ], š = [ʃ], ž = [ʒ].

Table (5) shows that nothing happens to bi- and trisyllabic inputs: they simply are reversed and remain bi- and trisyllabic. But it is self-evident that something happens to monosyllabic inputs: their outputs are systematically bisyllabic. One would like to understand a) for which reason monosyllabic items change in size and b) how it is achieved.⁴

3.3 Monosyllabic words: a close-up

All monosyllables contained in the corpus (20 items) are displayed in the following table.⁵

⁴ What happens to monosyllabic inputs is, of course, only one of the different interesting points illustrated by Šatrovački. Cf. Rizzolo (2004) for more material.

⁵ The corpus contains 23 monosyllabic items altogether. Three are missing hereafter *smor* ‘boredom (slang)’, *stvar* ‘thing’ and *džoint* ‘joint (slang)’ because they are not directly relevant for the purpose of the following discussion. The items *smor* and *stvar*, when reversed do not display a schwa, i.e. we do not observe *rəsmo* and *rəstva* but *rsmo* and *rstva* with a syllabic [r]. I show in Rizzolo (2004) that, far from being counter-examples, these two items are in fact evidence for the analysis that is about to be developed in section 3.5. The item

(6) Monosyllabic words

Šatrovački	standard Serbo-Croatian	gloss
bəhle	hleb	bread
čəbe	Beč	Vienna
cəvi	vic	joke
dəgra	grad	town
dəle	led	ice
dəra	rad	effect (slang)
dəspi	spid	speed (slang)
ftəli	lift	lift
gəsne	sneg	snow
kədžo	džok	joint (slang)
kəzna	znak	sign
pədo	dop	dope
pəglu	glup	stupid, adj.
pəstri	strip	comic strip
pətri	trip	trip (slang)
səbu	bus	bus
səpa	pas	dog
təcve	cvet	flower
žəmu	muž	husband
žəno	nož	knife

It is clear in table (6) that the bisyllabic output of CVC items is always achieved through the appearance of a schwa, e.g. hleb *bread* > bəhle, lift *lift* > ftəli, cvet *flower* > təcve. This piece of information is indeed a striking fact for *the inserted schwa does not belong to the phonemic inventory* of standard Serbo-Croatian. Knowing this, a natural question arises: where does this schwa come from and what is the purpose of this insertion? Answering this question is the goal of the next section.

džoint being the only one in the whole corpus displaying a glide, *džoint* [dʒojnt] has a specific treatment: its output [jintdʒo] displays an [i] epenthesis (Cf. Rizzolo 2004 for an analysis).

3.4 Schwa insertion: different candidate analyses

Before trying to figure out the reason for the schwa insertion, it is worth finding out its origin. Schwa insertion may be thought of in different ways. Two classical positions may be adopted: a lexical one and an epenthetic one. Let us explore the first of these two hypotheses, i.e. the lexical hypothesis: in such a position, monosyllabic words that end with a consonant on the surface underlyingly end with a schwa. In such a perspective, a word like *Beč* [betʃ] ‘Vienna’ would have the following representation:

(7) *Beč* /bɛtʃə / [bɛtʃ]

$$\begin{array}{cccc} C_1 & V_1 & C_2 & V_2 \\ | & | & | & | \\ \mathbf{b} & \varepsilon & \overline{\mathbf{t}\mathbf{f}} & \mathfrak{e} \end{array}$$

The final schwa would only be pronounced when its presence is required, i.e. during the reversal process. Thus we would observe:

(8) A lexicalist solution: schwa is underlyingly present after word-final consonants.

$/b\epsilon t\int\partial/$				$[b\epsilon t\int]$				$[\overline{t}\int\partial b\epsilon]$			
C_1	V_1	C_2	V_2	C_2	V_2	C_1	V_1	C_2	V_2	C_1	V_1
b	ϵ	$\overline{t}\int$	∂	$\overline{t}\int$	∂	b	ϵ	$\overline{t}\int$	∂	b	ϵ

Under (8) schwa is already present in the S-C input but not pronounced since not required. When the item is reversed its presence is now required: the schwa surfaces to break up initial consonant clusters such as **#čb*, **#dg* or **#pd*, which are systematically produced by reversal, i.e. $C_1VC_2 > C_2C_1V$. Indeed, if schwa was not pronounced the result of reversal for an input such as *Beč* [bɛtʃ] would be **[tʃbɛ]*. The initial cluster **#[tʃb]* which results from reversal does not exist in Serbo-Croatian and may thus be assumed to be impossible. Thus the schwa being already available underlyingly simply becomes audible to avoid the creation of clusters which are ruled out in S-C.

However this solution is rather unlikely since schwa cannot be present in the lexicon: it does not exist as a S-C phoneme. It would be strange indeed to propose an underlying schwa for the sole purpose of giving an account for 20 words!

If the lexical hypothesis is disqualified there still remains another classical proposal to examine: the epenthetic solution. One might suppose that the schwa observed in the Šatrovački forms represents an epenthesis of syllabic material (a slot) and melody. In such an approach the schwa would be inserted, again, to break up initial consonant clusters such as **#čb*, **#dg* or **#pd*, which are systematically produced by reversal, i.e. $C_1VC_2 > C_2C_1V$. This solution is illustrated under (9):

(9) Epenthetic solution: schwa is inserted after reversal to break up illicit initial consonant clusters resulting from this process

a) schwa is inserted between C_2 and C_1 b) schwa is inserted before C_2
 $/b\epsilon t\text{ʃ}/ > */t\text{ʃ}b\epsilon/ > [t\text{ʃ}\text{ə}b\epsilon]$ $/b\epsilon t\text{ʃ}/ > */t\text{ʃ}b\epsilon/ > [\text{ə}t\text{ʃ}b\epsilon]$

1) $C_1 \quad V \quad C_2$ > 2) $C_2 \quad C_1 \quad V$ b ε tʃ tʃ b ε	1) $C_1 \quad V \quad C_2$ > 2) $C_2 \quad C_1 \quad V$ b ε tʃ tʃ b ε
3) $C_2 \quad V \quad C_1 \quad V$ tʃ ə b ε	3) $V \quad C_2 \quad C_1 \quad V$ ə tʃ b ε

There are two logical ways for the schwa epenthesis as depicted under (9). Either it is inserted between C_2 and C_1 or it is inserted before C_2 . Let us consider the first possibility. The reversal of the item *Beč* $[b\epsilon t\text{ʃ}]$ with the shape C_1VC_2 gives birth to the output $*/t\text{ʃ}b\epsilon/$. The initial cluster resulting from the reversal, e.g. $*/t\text{ʃ}b/$ does not exist in Serbo-Croatian as we already know. In order to break up this illicit cluster there is an epenthesis of the vowel schwa between the consonants C_2 and C_1 . The output is then $[t\text{ʃ}\text{ə}b\epsilon]$, the attested one. In the second case the strategy applied is similar; the only difference lies in the location of the epenthesis: this time schwa settles before C_2 and C_1 . The resulting output $[\text{ə}t\text{ʃ}b\epsilon]$ has done away with the illicit cluster as well and does not violate any

constraint of S-C. However it is simply not attested. This double possibility for the realisation of schwa is the main drawback of the epenthetic solution: it fails to account for the fact that the insertion always occurs in the same location. In other words this approach cannot predict that the result of reversal for monosyllabic items will always have the shape $C_2\text{ə}C_1V_1$ as in *Beč* > *čəbe* and never $\text{ə}C_2C_1V_1$ as in the non-attested *Beč* > **əčbe*.

Still we can look further into the epenthetic direction and try to accommodate this hypothesis in a way that it can fully predict the location of schwa insertion. Doing so leads us to associate this approach to a typological reasoning of the kind that OT (Optimality Theory) embodies in the constraints *ONSET* and *NOCODA*: *CVCV* is much more unmarked than *VCCV* since, unlike *VCCV* which violates both constraints, it does not incur a violation of either constraint.

In this case, the representation under (9b) would be simply excluded by the two mentioned constraints.

The OT-based epenthetic approach seems to be a good candidate. Serbo-Croatian has indeed restrictions on initial consonant clusters: **#dg* or **#čb*, for example, do not occur and may thus be assumed to be ill-formed. Šatrovački also has restrictions on initial clusters: they are systematically broken up. If schwa were not inserted, we would observe, among others, the following monster clusters: *bhl*, *čb*, *dgr*, *dsp*, *ftl*, *gsn*, *kdž*, *kzn*, *pgl*, *pstr*, *ptr*. These are absolutely ruled out in S-C. Clearly the upgraded epenthetic approach looks like an ideal candidate: it explains how the schwa is inserted and can predict where it is inserted. Moreover this solution gives an answer to the question why a schwa is inserted: in order to break up illicit initial clusters resulting from reversal.

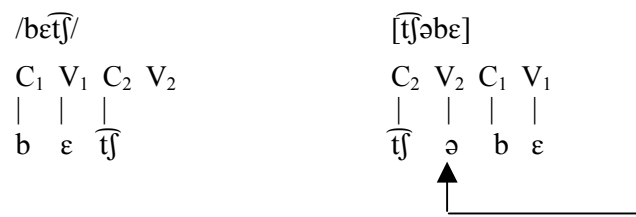
But if all this is true and if this approach is the right one, how to explain that perfectly licit Serbo-Croatian clusters such as, *#sp*, *#cv*, *#dr*, e.g. *sposoban* ‘capable’, *spasiti* ‘to save’, *spor* ‘slow’, *cvekla* ‘beetroot’ *cvileti* ‘to moan’, *cvet* ‘flower’, *drag* ‘dear’, *drama* ‘drama’, *dremati* ‘to nap’ are also broken up in Šatrovački: *pas* ‘dog’ > *səpa*, **spa*, *vic* ‘joke’ > *cəvi*, **cvi*, *rad* ‘work’ > *dəra*, **dra*. Therefore, I conclude that the reason for schwa insertion is not to be sought in constraints on initial clusters. Thus the epenthetic approach cannot be the correct solution to the problem.

3.5 Schwa insertion: the FEN solution

We have seen that the lexical and epenthetic hypotheses fail to solve the problem at stake here.

I claim that the solution lies in the acknowledgement of final empty nuclei (FEN). Among other voices, Government Phonology (e.g. Kaye 1990) holds that consonant-final words actually end in an empty nucleus.⁶ This nucleus can remain mute when occurring in word-final position; it is licensed to do so.⁷ But once it finds itself in a morpheme-internal situation it cannot remain mute gratuitously, it has to be taken care of: in the case at hand, through the vocalization of the empty nucleus.

(10) The FEN solution



Under (10), the nucleus V₂ can remain mute since it is final and thus licensed to do so. But after reversal this nucleus is now internal and must be expressed. Thus the schwa observed on the surface in Šatrovački is nothing but the spell-out of the lexical final empty nucleus, which has been moved from a final to an internal location. This way there is no need to call on markedness considerations to account for the fact that schwa is realized always in the same location: the FEN hypothesis accounts for that. Moreover, following this proposal allows unveiling the mysterious choice of schwa, i.e. a phoneme which is not present in the phonemic inventory of S-C in extenso: Kaye (1990: 313) proposes that an empty

⁶ Outside of Government Phonology, Dell (1995) and Oostendorp (2002) for example work with final empty nuclei.

⁷ This is a parameter: some languages do license FEN, some others do not. Languages which display final codas do license FEN; languages without final codas do not. Cf. Kaye (1990) for questions related to this topic.

nucleus, when segmentally expressed, is realized as schwa.⁸ Clearly this proposal is the ideal candidate: no extra material (epenthesis) is needed, no extra constraint (OT upgrade) is needed and the choice of schwa finds a natural explanation.

3.6 The FEN solution, yes but...

The FEN solution seems to be the correct way to explain the mechanism at stake here, i.e. to account for the presence of schwa in an unchanging position. Still, the compulsory expression of the empty nucleus in *morpheme-internal situation* may not be the real reason for the appearance of schwa.

When we consider the whole corpus, the distribution of S-C inputs according to the number of syllables is somehow striking. There is an overwhelming majority of bisyllabic inputs: 152 out of 194. Šatrovački, which is based on syllable reversal, therefore seems best designed for inputs with two syllables: '*we need to be (at least) two in order to play*'. Monosyllabic inputs clearly have just one syllable; they are not big enough. If those items want to have a chance to become good candidates for reversal, they have to increase in size in order to satisfy the minimal size constraint. This noticeable size problem is nothing but a wrong problem since the FEN hypothesis holds that monosyllabic items are bisyllabic underlyingly.

In conclusion, everything is the same, the FEN hypothesis still holds true. The difference lies in the fact that the motivation for the vocalization of the empty nucleus is not anymore its morpheme-internal position but a constraint on the minimal size of a Šatrovački output. In other words, minimal size is the trigger and FEN is the means.

Moreover, I said above that an empty nucleus in internal position has to be taken care of and that this is achieved through vocalization. Giving a segmental expression to an empty nucleus is not the only way to take care of it in a morpheme-internal empty nucleus: it can be properly governed by a following nucleus.⁹ In table (10) the empty nucleus V_2 in a

⁸ The author proposes that the unmarked realization of an empty nucleus is a high schwa, i.e. [i]. The mid schwa observed here is nothing but a coloured version of the latter.

⁹ Cf. among others, Kaye, Lowenstamm & Vergnaud (1990), Kaye (1990), Scheer (2004) for questions related to Government Phonology.

morpheme-internal position could be properly governed by the following nucleus V_1 . Thus it could remain mute. This implies that the FEN solution, without the minimal size argument, would not help solving the problem. Minimal size is the key to the vocalization of the empty site.

4 Utrovački

4.1 Utrovački: a sketch

As for Šatrovački, this language game is mainly spoken in Belgrade. Utrovački is based on moving and inserting syllables, e.g. words like *radio* [radjo] ‘radio’, *kobila* [kobila] ‘mare’, *sunce* [suntse] ‘sun’ turn into *udio za ranje*, *ubila za konje*, *unce za sunje*.¹⁰

The following informal description can be given for this process: substitute [u] for the first syllable, add *za* [za] ‘for’ at the end of the word, then add the first syllable and attach to it the [-nje] suffix, e.g: *kobila* > *ubila* > *ubila za* > *ubila za konje*.

4.2 Utrovački data: an overview

The data presented here come from a work with “native” speakers of Utrovački conducted in April 2005 by a Serbo-Croatian native speaker. 116 entries have been collected. There are five types of Serbo-Croatian inputs to be considered: mono-, bi-, trisyllabic and inputs with four and five syllables.

The distribution is the following: monosyllabic inputs: 19, bisyllabic inputs: 55, trisyllabic inputs: 37, inputs with four syllables: 4, inputs with five syllables: 1.

(11) Utrovački: an overview

Utrovački	standard Serbo-Croatian	gloss
<hr/>		
	monosyllables	
uv za krnje	krv	blood
urt za sponje	sport	sport
ud za granje	grad	town

¹⁰ The way outputs are represented, i.e. with graphic blanks, is nothing but my own decision to make them more easily parsable.

Utrovački	standard Serbo-Croatian	gloss
	bisyllables	
urta za kanje	karta	ticket
unka za crnje	crnka	brunette
urka za svinje	svirka	concert (slang)
	trisyllables	
ulica za minje	Milica	Milica
unktura za tinje	tinktura	tincture
urkoman	narkoman	drug addict
	four syllables	
untalone za panje	pantalone	trousers
ukadžija za drnje	drkadžija	asshole
udijator za ranje	radijator	radiator
	five syllables	
ubalebaroš za džanje	džabalebaroš	parasite (slang)

4.3 Which unit is actually moved?

Even a quick look at table (11) clearly shows that whatever the size of the input (1, 2, 3, 4 or 5 syllables), the unit that is manipulated in this language game is not a syllable in its classical conception. Let us have a closer look:

(12) What is moved

- a) Monosyllables: *smor* > *ur za smonje* => *moved* [smo]
- b) Bisyllables: *svirka* > *urka za svinje*, *pivo* > *uvo za pinje* => *moved* [svi], [pi]
- c) Trisyllables: *sandale* > *undale za sanje*, *Milica* > *ulica za minje* => *moved* [sa], [mi]
- d) Four syllables: *pantalone* > *untalone za panje*, *radijator* > *udijator za ranje* => *moved* [pa], [ra]
- e) Five syllables: *džabalebaroš* > *ubalebaroš za džanje* => *moved* [dža]

If we looked only at the words ‘pivo’, ‘Milica’, ‘radijator’ and ‘džabalebaroš’ we could conclude that the object that was moved is the (first) syllable. For example when ‘pivo’ turns into ‘uvo za pinje’, ‘pi’ undoubtedly represents the first syllable of the item ‘pivo’. The same holds true for the other three examples mentioned. But if we look at all the

examples listed under (12) and consider the words ‘smor’, ‘svirka’, ‘sandale’ and ‘pantalone’ then we cannot conclude that the object that is moved is the first syllable of the S-C input. If this were the case we would observe for those words the following (unattested) outputs:

(13) If the syllable were moved (what would be the first syllable in familiar theories is italicized)

- a) *smor* > *u za smornje, ur za smonje
- b) *svirka* > *uka za svirnje, urka za svinje
- c) *sandale* > *udale za sanje, undale za sanje
- d) *pantalone* > *utalone za panje, untalone za panje

Clearly, as shown by the examples under (13), moving the first syllable, i.e. an onset plus a rhyme, leads to a wrong result. Doing so for an input like *svirka*, which is constituted of two syllables, *svir* and *ka*, and whose first syllable contains a complex onset ‘sv’ and a complex rhyme ‘ir’, where ‘i’ is the nucleus and ‘r’ the coda, would derive the unattested output ‘*uka za svirnje’, when the attested output is ‘urka za svinje’.

Moving the whole syllable leads to the wrong result. Which unit when moved does then lead to the right result? A closer look at the data reveals that whatever the shape of the first syllable, either CV or CVC, the only material that is moved is an Onset/Nucleus pair. This implies that the coda of the first syllable, in other words an internal coda, is never moved. One wants to know why this is so.

4.4 Why do we not move a syllable?

This question may at first sound somehow trivial or unmotivated. One could ask in the same way ‘why would we move a syllable?’. But the point is that there are reasons to be puzzled by such a state of affairs. First, the syllable is the constituent one refers to when one wants to describe casual phonological processes such as stress assignment, vocalic quantity or say ATRity. This same constituent was reintroduced in the phonological theories in the seventies because major processes (part of them the ones mentioned) could not receive a natural description. Thus the syllable gained the status of a privileged phonological site and this common view still prevails today. In other words, the syllable is a fundamental tool of the phonological gear. How could phonological

operations in a S-C language game suggest that the acclaimed syllable is not a patented actor? Second it seems that Šatrovački does manipulate syllables (*cf.* below, section 5) and so do French *verlan* and different other language games. In this direction Blevins (1995) writes: ‘Laycock’s (1972) survey of language games notes at least twenty cases where *the syllable is the target* of affixation, truncation, substitution or movement’. So the question raised above is not that unmotivated: we naturally expect the syllable to be the object moved in *Utrovački*. Clearly here the target is not a proper syllable but a syllable without its coda. Since in classical syllabic frameworks the coda is dominated by the rhyme and the rhyme is itself dominated by the syllable node, it should not be possible to move only the onset and the nucleus, to the exclusion of the coda. Thus if we are supporters of a classical syllabic theory we want to understand what can be the reason for this breaking of the rhyme in *Utrovački*. In order to make some progress, it will prove useful to look back at Šatrovački. This is the purpose of the next section.

5 A look back at Šatrovački

When I presented Šatrovački I said that an informal description of this language game can be: syllables are reversed. And indeed, a look back at table (5) shows that nothing refutes this statement. But a closer look at the same table reveals that there are no inputs with an internal coda.¹¹ Thus it could simply be the case that a crucial piece of information is lacking: we simply do not know how inputs with an internal coda behave.

I must admit, at this point, that the data under (5) are incomplete, on purpose, for expository reasons: items with an internal coda are not displayed. Still such items do exist: out of 152 bisyllabic inputs 36 display an internal coda.¹² Will this coda move with the syllable or not?

The general shape of bisyllabic inputs with an internal coda is $C_1VC_2.C_3V$ with C_2 being a coda (no increasing sonority from C_2 to C_3). If the syllable is manipulated by Šatrovački we would expect the outputs to have the shape $C_3V.C_1VC_2$. This is never the case. What we always

¹¹ There is one: ‘pečurka’. But the coda is in the wrong place: we would need it in the first syllable since this syllable and no other is going to move (*cf.* Rizzolo 2004 for an explanation).

¹² Trisyllables don’t display an internal coda in the first syllable (*cf.* the preceding footnote for the relevance of this fact).

observe is $C_2C_3V.C_1V$, e.g. a word like *mečka* ‘Mercedes (slang)’ gives *čkame* and never **kameč*. Some of the outputs illustrating this are listed under (14):

(14) Bisyllabic inputs with an internal coda

Serbo-Croatian	Šatrovački	gloss
mečka	čkame	Mercedes (slang)
pička	čkapi	vagina (slang)
hladno	dnohla	cold
piksla	kslapi	ashtray (slang)
lopta	ptalo	ball
fotke	tkefo	photos (slang)
Slavko	Vkosla	Slavko
govno	vnogo	turd

The illustrations given in this table speak for themselves: an internal coda is never moved. Furthermore, what is particularly striking indeed is that some of the initial consonant clusters resulting from the reversal do not exist at all, do not exist anymore in synchrony, or are scarcely attested in S-C.

This last point is depicted below:

(15) Resulting clusters

- a) the cluster doesn’t exist: **#ksl*, *piksla* ‘ashtray’ > *kslapi* ; **#vk* *Slavko* ‘Slavko’ > *vkosla*
- b) the cluster doesn’t exist anymore in synchrony: **#vn*, *govno* ‘turd’ > *vnogo* (*unutra* ‘inside’ < *vnutra*)
- c) the cluster is scarcely¹³ attested: *#tk*, *fotke* ‘pictures (slang)’ > *tkefo* (e.g. *tkanje* ‘weaving’) ; *#pt* *lopta* ‘ball’ > *ptalo* (e.g. *ptica* ‘bird’) ; *#dn* *hladno* ‘cold’ > *dnohla* (e.g. *dno* ‘bottom’)
- d) the cluster is frequent in S-C: *#šk*, *peškir* ‘towel’ > *škirpe* (e.g. *škola* ‘school’) ; *#zn*, *krzno* ‘fur’ > *znokr* (e.g. *znoj* ‘sweat’)...

¹³ ‘scarcely’ means that there are few roots (roughly less than five) displaying such an initial cluster.

Hence Šatrovački does not manipulate syllables. Moreover the choice of Onset/Nucleus pairs leads to the creation of unusual or unattested initial clusters. Through the glasses of somebody evolving in a classical syllabic framework it seems impossible to explain how it could be. We will see in the next section that there is a way to understand why the syllable is not the relevant object if we put on different glasses.

6 Towards a solution: a look through different glasses

Šatrovački exclusively manipulates Onset/Nucleus pairs, not full syllables, and so does Šatrovački. This is so, even if the result of the reversal operation gives birth to unusual or unattested initial clusters.

Finding a solution may require a change in point of view: the validity of the syllable as a constituent must be questioned. Indeed the data show that a coda is never moved with its nucleus. This fact suggests that neither the syllable, nor the rhyme nor the coda qualify as syllabic constituents. This state of affairs is precisely inherent in a theory called CVCV (Lowenstamm 1996, Scheer 2004, Szigetvári 2001, among others). In this framework, the only constituents are non-branching onsets and non-branching nuclei which strictly alternate. As a consequence, the syllabic arborescence does not exist anymore. Thus, in such theories the coda is not a constituent anymore¹⁴ and the minimal unit is an Onset/Nucleus pair. It is worth noting that the syllabic generalizations that were expressed in an arboreal framework are not lost at any rate in the CVCV theory. Simply, the mechanism that allows us to describe a coda, a branching onset, a long vowel or a closed syllable is different: the arboreal functionality is henceforth expressed in terms of lateral relationships which are embodied by two main forces known as government and licensing.¹⁵

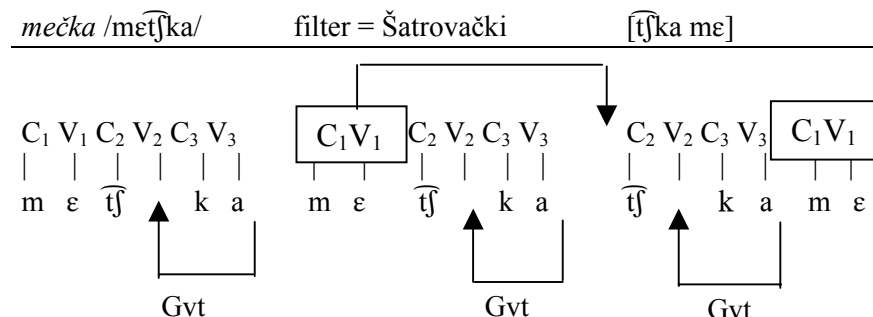
When examined through these new glasses the data presented here lose their exceptional character: there is nothing more natural than moving an Onset/Nucleus pair when this unit is postulated to be the minimal building block. In other words the question ‘why do we not move syllables?’ receives a natural answer: because the syllable is not the minimal unit, (it cannot be since) it is not a proper constituent.

¹⁴ At least in structural terms. There is a formal apparatus to identify what classically refers to the coda.

¹⁵ Cf. Scheer (2004) for questions related to this topic.

With these new glasses, the reversal of an input such as *mečka* ‘Mercedes (slang)’ will be described as follows:

(17) *mečka* ‘Mercedes (slang)’ > *čkame* with the CVCV glasses



Under (17) the Onset/Nucleus pair $C_1 V_1$ is the minimal building block. This is the unit which is manipulated by Šatrovački/Utrovački speakers. The nucleus V_2 is empty and therefore has to be taken care of: this is achieved through government from the following full nucleus V_3 .

7 In conclusion

The goal of this paper was twofold: 1) to present two Serbo-Croatian language games, 2) to show how their functioning provides an insight into the architecture of phonological representations.

As concerns the first aspect, i.e. the descriptive one, we have witnessed the basic functioning of two ludlings: one based on syllable reversing, Šatrovački and another one based on moving and inserting syllables, Utrovački.

As concerns the theoretical part of this paper, two major points were made: 1) data from Šatrovački are good evidence for the existence of Final Empty Nuclei, 2) both Šatrovački and Utrovački suggest that the classical conception of the phonological architecture with its arboreal constituency is not adequate. Looking through classical glasses does not help explaining why the unit manipulated by two language games is not the syllable. However, putting on new glasses and examining the same data through a different filter shows that the data at hand are not

surprising. The theory known as CVCV (Lowenstamm 1996, Scheer 2004, Szigetvári 2001, among others) predicts that the syllable is not a valid constituent and that the minimal unit is an Onset/Nucleus pair – exactly what is moved by the two language games examined.

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Olivier Rizzolo
UMR 6039-Bases, Corpus et Langage
UNSA-U.F.R. Lettres, Arts et Sciences Humaines
98 Bd Edouard Herriot-BP 3209
06204 NICE CEDEX
rizzolo@unice.fr