A formal analysis of Croatian serial verbs

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1. Introduction

Croatian (Cr) contains multi-verb constructions of the type exemplified in (1), featuring two imperative verbs which function as a single unit.

(1)	a.	Odi	kupi	novin	e!	
		go2sg.imp	buy2sg.imp	news	papers	
		'Go buy news	'Go buy newspapers!'			
	b.	Dođi	Dođi vidi		sliku!	
		come2sg.imp	see2sg.imp	this	picture	
		'Come see th	is picture.'			

Similar constructions can be found in other Balkan languages, such as Modern Greek (2), definitely (2a) and maybe (2b), as well as non-Balkan languages (e.g. English [3]).

(2)	a.	Ela	pes	mu!
		come	.2sg.imp say.2sg.imp	me.gen
		'Com	ne tell me!'	
	b.	Ja	kita!	
		hey	look.2sg.imp	
		'Hey	look!'	

(3) a. Come see this! b. Go get me a Coke!

We argue that Cr constructions such as those in (1) fall within the broader cross-linguistic typology of *Serial Verb Constructions* (SVC). SVCs are constructions consisting of two (or more) verbs, without any marker of syntactic dependency between them, which together function as a single syntactic, semantic and prosodic unit. The verbs within an SVC thus form a single predicate, denote a single event, and project a mono-clausal structure (Aikhenvald 2006, 2018).

2. Cross-linguistic properties of SVCs

SVCs have been observed in a number of typologically diverse languages, most prominently in the isolating languages of West Africa (such as Igbo [4]) and South-East Asia (such as Tetun Dili [5] and Taba [6]).

(4)	Ó	ti-gbù-rù	nwóké	áhù.
	he	beat-kill-past	man	that
	'He be	at that man to o	death.'	

(Igbo; Lord 1975: 28)

(5) *Tuda bola mai.* throw ball come 'Throw the ball over here.' (Tetun Dili; Hajek 2006: 243)

(6) *n-babas welik n-mot do* 3sg.-bite pig 3sg.-die real. 'It bit the pig dead.' (Taba; Bowden 2001: 297)

SVCs across languages were found to exhibit (more or less consistently) the following properties (Zwicky 1990, Comrie 1995, Aikhenvald 2018):

- (i) SVCs consist of two (or more) verbs without any syntactic link or marker of dependency between them;
- (ii) each verb contained within an SVC can also function as the sole verb in the clause;
- (iii) SVCs function as a single predicate and thus denote a single event;
- (iv) SVCs occur within a single clause (i.e. mono-clausal structure);
- (v) verbs within an SVC share at least one core argument (object or subject);
- (vi) SVCs can inflect across tenses and other grammatical categories.

Cr constructions of the type exemplified in (1) will be shown to exhibit the bulk of the properties in (i-vi), thus justifying the use of the SVC label in this language as well:

3. SVCs vs coordinate clauses in Cr:

Firstly, the verbs contained within a Cr SVC can also function as the sole predicate within the clause (in accordance with the SVC criterion in [ii]):

(7)	Odi	ŀ	kupi		novine.
	go2sg	g.imp ł	ouy2sg	g.imp	newspapers
	'Go b	uy newsp	apers.	,	
(8)	a.	Odi		van.	
		go2sg.ir	np.	outside	e
	b.	Кирі		novine	•
		buy2sg.	imp	newsp	apers

As for the criterion in (i), i.e. no syntactic link between verbs within an SVC, it could be argued that the SVC-type clause in (7) is syntactically equivalent to the coordinate clause (CC) in (9), the only difference being that the coordinator i 'and' is silent in the former case and phonetically realized in the latter.

(9) Odi **i** kupi novine. go2sg.imp and buy2sg.imp newspapers 'Go and buy newspapers.'

Nevertheless, we show that (7) and (9) constitute distinct grammatical entities (despite their surface similarity): (9) exhibits properties typical of CCs, i.e. bi-clausal structure and bi-eventive interpretation, whereas (7) exhibits the characteristics typical of SVCs, i.e. mono-clausal structure and single event interpretation.

3.1 Open vs closed verb set

Both verbs within Cr CCs have an equal status and are drawn from an unbounded lexical verb set. Each of them functions as the predicate of its clause.

(10)	Odi/	požuri/	uzmi	novce i	kupi	novine.
	go2sg.imp	hurry-up2sg.imp	take2sg.imp	money and	buy2sg.imp	newspapers

In the case of Cr SVCs, the first verb is drawn from a bounded and very restricted set of functional verbs, i.e. verbs of motion (the second verb functioning as the lexical head of the construction).

(11) *Odi/* **požuri/* * *uzmi* novce kupi novine. go2sg.imp hurry-up2sg.imp take2sg.imp money buy2sg.imp newspapers 'Go/hurry up/take the money (and) buy newspapers.'

Most SVCs across languages are *asymmetric* in this sense, containing one 'major' component, i.e. a verb drawn from an unrestricted verb set, and one 'minor' component, chosen from a closed subset of verbs (Aikhenvald 2018).

3.2 Single vs double event interpretation

Cr SVCs also correspond to the SVC criterion in (iii), i.e. the verbs contained within a Cr SVC compose a single predicate and denote a single event. One indication of this is the ban on the use of conflicting spatio-temporal markers in Cr SVCs (12a), all of which is allowed in CCs (12b):

(12)	a.	*	Tamo	odi	kupi		novine	2	tu.	
			there	go2sg.imp	buy2s	g.imp	newsp	apers	here	
			'Go th	ere and buy no	ewspape	ers here.	,			
	b.		Tamo	odi	i	kupi		novine	2	tu.
			There	go2sg.imp	and	buy2s	g.imp	newsp	apers	here
			'Go th	ere and buy no	ewspape	ers here.	,			

3.3 Subject control

Cr SVCs can only feature one (pro) subject (13a); CCs are compatible with two subjects (13b):

(13)	a.	Odi	kupi	/ * kupi	te	novine.
		go2sg.imp	buy2s	g.imp buy2	2pl.imp	newspapers
	b.	Odi	i	kupi /	kupite	novine.
		go2sg.imp	and	buy2sg.imp	buy2pl	.imp newspapers

3.4 Clitic climbing

Clitic climbing from the lower to the higher verb (which typically only occurs in mono-clausal environments) is allowed in Cr SVCs (14a) and disallowed in CCs (14b):

(14)	<i>Odi</i>	<i>mi</i>	<i>kupi</i>	(<i>mi</i>)	<i>novine</i> .
	go2sg.imp	to-me-cl	buy2sg.imp	to-me-cl	newspapers
		CLITI	C CLIMBING		

b.	Odi	(* mi)	i	kupi	mi	novine.
	go2sg.imp	to-me-cl.	and	buy2sg.imp	to-me-cl.	newspapers
	'Go (and) bu	y me newspape	ers.'			

(13-14) thus show us that Cr SVCs, unlike CCs, constitute mono-clausal structures (SVC criterion in [iv]).

4. Parallels between SVCs and other anaphoric clause structures in Cr: Formal analysis

The anaphoric properties observed in Cr SVCs in 3 are largely shared by infinitives (15a) and control subjunctives (15b) (the latter being more typical of Serbian).

(15)	a.	Odi	kupi	novine.	[SVC]
		go2sg.imp	buy2sg.imp	newspapers	
	b.	Odi	kupiti	novine.	[Inf]
		go2sg.imp	buy-inf	newspapers	
	c.	Odi	da kupiš	novine.	[C-Subj]
		go2sg.imp	subj. buy2.	sg newspapers	

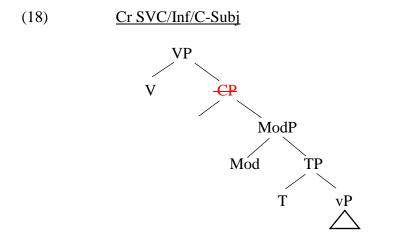
All of these clauses are compatible with a single subject only (as shown by the use of indices in [16]).

(16)	a.	<i>Odi</i> _i <i>kup</i> go2sg.imp buy	<i>pi_i novine</i> y2sg.imp newsp		[SVC]
	b.	Odi _i kup	piti _{i/*j} novine	2.	[Inf]
		go2sg.imp buy	y-inf newsp	apers	
	c.	Odi_i da	kupiš₁∕ *	kupite _j novine.	[C-Subj]
		go2sg.imp sub	bj. buy2.sg	buy2.pl newspapers	
	d.	Ivan _i mora _i /	počinje _i	raditi _{i/*j} .	[Inf]
		Ivan must3sg.	begin3sg.	work-inf.	
	e.	Ivan _i mora _i /	počinje _i	da radi _i / * rade _j .	[C-Subj]
		Ivan must3sg.	begin3sg.	subj work3sg. work3pl.	
		'Ivan must/is begi	ginning to work.'		

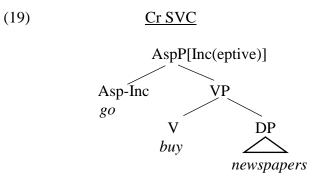
Clauses such as those in (16) are also incompatible with separate spatio-temporal marking:

(17)	a.	*	Ivan je	jučer	morao/počeo	raditi	sutra.	[Inf]
			Ivan is	yesterday	had-to began	work-inf	tomorr	OW
	b.	*	Ivan je	jučer	morao/počeo	da radi		sutra. [C-SUBJ]
			Ivan is	yesterday	had-to began	subj work?	Bsg.	tomorrow
	c.	*	Odi	jučer	kupi	novine	sutra.	[SVC]
			go2sg.imp	yesterday	buy2sg.imp	newspapers	tomorre	ow

These data (among others) show us that Cr infinitives and control subjunctives pattern with SVCs in that they project a mono-clausal structure and denote a single event. From a formal standpoint, these clauses constitute a single CP domain (i.e. matrix CP), while the embedded CP is truncated from the structure.



Cr SVCs are structurally smallest and most syntactically integrated out of all these complementsboth verbs are generated within the lowest vP/AspP structure:



Asp-Inceptive encodes the temporal immediacy of the action, hence the acceptability contrast in (20):

(20)	a.	Odi	kupi	novine	odmah.		
		go2.sg.imp	buy2sg.imp	newspapers	immediately		
		'Go buy newspapers immediately.'					
	b. *	Odi	kupi	novine	sutra /	sljedeći	tjedan.
		go2sg.imp.	buy2sg.imp	newspapers	tomorrow	next	week
		'Go buy newspapers tomorrow/next week.'					
				VS.			
	с.	Kupi	novine	sutra /	sljedeći	tjedan.	
		buy2sg.imp	newspapers	tomorrow	next	week	
		'Buy newspapers tomorrow/next week.'					

5. Conclusion

Cr SVCs share the bulk of the properties observed with their cross-linguistic counterparts. They also pattern with other anaphoric control structures found in Cr (i.e. infinitives and control subjunctives).

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