Clitic Placement, Syntactic Discontinuity, and information structure
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Contents

1 Introduction

- In this paper, we look at the phenomenon in New-Shtokavian, which in the *ije*-kavian variant currently represents the Croatian standard language, the *e*- and *i*-kavian variants are spoken in e.g. Bosnia-Herzegovina, Serbia.

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- **Second Position Clitic Placement:** clausal clitics, i.e. pronominalized verbal arguments or auxiliary verbs, seem to be subject to a second position placement constraint, which renders them in either a position after a clause-initial syntactic constituent, or after the initial phonological word, as is illustrated in (1a,b) for a sentence initial subject NP, and in (1c,d) for an initial object NP

(1)   a. *Novi auti **su** stigli u skladište.*
        new cars be.3pl arrive in storage
        'New cars arrived to the storage.'

    b. *Novi **su** auti stigli u skladište.*
        new be.3pl car arrive in storage

    c. *Novi auto **su** naši susjedi kupili.*
        new car be.3pl our neighbours buy
        'Our neighbours bought a new car.'

    d. *Novi **su** auto naši susjedi kupili.*
        new be.3pl car our neighbours buy

- **Problem:** If clitics would be indeed placed after the first phonological word, this would induce problems for various syntactic theories, e.g. related to level autonomy, syntactic placement constraints, or to the fact that clitics contributing information to the sentence level appear to be inside a subconstituent of arbitrary complexity and embedding depth.

- The prosodic clitic placement assumption has led to proposals of a complex prosody-syntax interface in various frameworks, e.g. (Bögel et al. 2010, Halpern 1995).

- **Here:** We argue for
    a. **syntactic clitic placement**,
    b. a **syntactic analysis of split constituent constructions** with clitics apparently being placed after the first phonological word, and
    c. relate such constructions to specific information structure relevant word order variation,
    d. **a prosody-syntax interface without complex word rearrangement.**

2 Previous analyses

There has been extensive work on second position clitics in general, and in the recent years in particular e.g. Anderson (2005), Franks and King (2000), Halpern and Zwicky (1996), van Riemsdijk (1999).

Assumptions and hypotheses related to so called second position clitics in Bosnian, Croatian, and Serbian (or Serbo-Croatian) can be roughly divided into:

- Purely Phonological Accounts: O'Connor (2002), Radanović-Kocić (1988, 1996)

- Purely Syntactic Accounts: Ćavar and Wilder (1992), Progovac (1996)

- Mixed Phonological-Syntactic Accounts: Bögel et al. (2010), Halpern (1995), Schütze (1994), Zec and Inkelas (1990)

- Some work on such clitics has hinted at implications for information structure (e.g. Diesing et al. 2009)

Prosodic Inversion Accounts (Halpern 1995):

- In syntax clitics are enclitics and placed either after the first syntactic constituent or sentence initially.

- If placed sentence initially, the enclitics cannot prosodically attach to a host.

- Prosody moves the clitics after the first prosodic word ("prosodic inversion") as a last resort operation.

- Based on this type of operation and the related assumptions and stipulations, some approaches have to rely on a complex prosody-syntax interface, e.g. Bögel et al. (2010).

Figure 1: Complex prosody-syntax interface (Bögel et al. 2010)
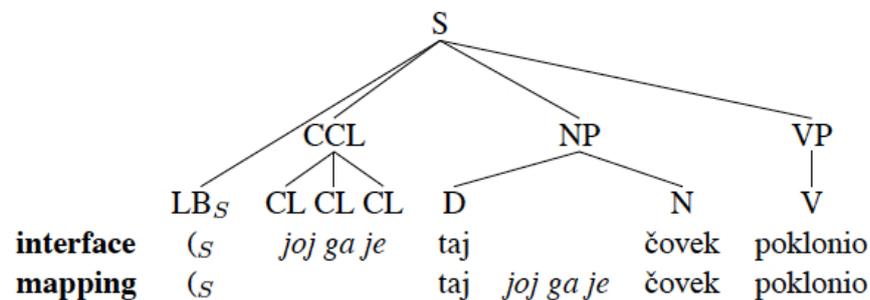
Problems of the Prosodic Inversion analysis

- Conceptual Stipulations:
  - The clitic (cluster) is realized syntactically in sentence initial position.
  - Complex mapping between syntax and prosody (e.g. word-order rearrangement)

- Empirical: Cannot explain examples in which clitics are placed after the second or third phonological word or syntactic constituent

(2)   **Split complex DPs (placement after second or third phonological word)**

    a. *Taj naš veliki **nam** prihod neće   tako puno pomoći.*
       this our big   us   income not-will.3sg this much help.inf
       "This big income of ours will not help us that much."

    b. *Takav veliki brzi **mi** auto nije   posebno potreban.*
       such   big   fast me car   not-be.3sg specially necessary
       "I don't need such a big fast car that much."

3 Split Constituents

Discontinuously rendered constituents in syntax are the reason, why clitics seem to attach to the first prosodic word (Fanselow and Ćavar 2001, 2002).

(3)   **Adjectives split by clitic and sentential adverb**

    a. *Novi **su**   **danas** auti stigli   u skladište.*
       new be.3pl today   cars arrive.ptc in storage

    b. *Novi **su**   **nedavno** auto naši susjedi   kupili.*
       new be.3pl recently car   our   neighbours buy.ptc

(4)   **Demonstratives split by clitic and sentential adverb**

    a. *Taj **je**   čovjek nazvao.*
       this be.3sg man   call.ptc

    b. *Ti   **su**   **danas** auti stigli.*
       those be.3pl today   cars arrive.ptc

(5)   **Discontinuous DPs (documented in early papers by Wayles Browne):**

    a. *Ivan **je**   kupio   neki plavi auto.*
       I.   be.3sg buy.ptc some blue   car
       "Ivan bought some blue car."

    b. *Kakav   **je**   Ivan kupio   auto?*
       what-kind-of be.3sg I.   buy.ptc car
       "What kind of car did Ivan buy?"

    c. *Kakav   **je**   Ivan auto kupio?*
       what-kind-of be.3sg I.   car   buy.ptc

(6) **Discontinuous PPs:**

    a. *Ivan **je** živio u velikom gradu.*
       I.   be.3sg live.ptc in big   city
       "Ivan lived in a big city."

    b. *U kakvom **je** Ivan živio gradu?*
       in what-kind-of be.3sg I.   live.ptc city
       "What kind of car did Ivan buy?"

    c. *U kakvom **je** Ivan gradu živio?*
       in what-kind-of be.3sg I.   city   live.ptc

(7) **Discontinuous PPs with Clitics:**

    a. *U kakvom **je** gradu Ivan živio?*
       in what-kind-of be.3sg city I.   live.ptc

    b. *U kakvom on gradu živi?*
       in what-kind-of he city   live.3sg

    c. *U kakvom to gradu Ivan živi?*
       in what-kind-of there city   I.   live.3sg

    d. **Gradu Ivan živi u nekom.*
       city   I.   live.3sg in some.

(8) **No discontinuity by splitting off the P alone:**

    a. **U Ivan živi nekom gradu.*
       in I.   live.3sg some   city

    b. **U Ivan nekom gradu živi.*
       in I.   some   city live.3sg

    c. **U **je** nekom gradu Ivan živio.*
       in be.3sg some   city I.   live.ptc

(9) **Pronominalization: In split contexts, the noun can be pronominalized**

    a. *Koliko knjiga si pročitao?*
       how-many books be.2sg read.ptc

    b. *Koliko si knjiga pročitao?*
       how-many be.2sg books read.ptc

    c. *Koliko si ih pročitao?*
       how-many be.2sg them read.ptc

d. *Ivan je   pročitao pet ih.
   I.   be.3sg read.ptc five them

Conclusions and generalizations:

- Splits of complex NPs and PPs are possible without clitics in the context.

- Clitics appear in apparent cases of prosodic placement exactly where independently syntactic splits are possible.

- Each resulting part of a split NP or PP can function as a NP or PP independently.

4 Information structure

Split XPs coincide with specific information theoretic properties, i.e. topic or (contrastive) focus constructions.

- Clitics cannot be placed after the first prosodic word in an answer to the question "What happened?", as can be seen in (10a-b) for an oblique argument and in (10c) for a subject.

(10) **As answer to: What happened?**

   a. *??* _U_   _velikom_   **_je_**   *Petar*   _gradu_   *živio.*
       in   big   be.3sg   Peter   city   live.ptc

    "Peter lived in a big city."

   b. *??* _U_   _velikom_   **_je_**   _gradu_   *Petar*   *živio.*
       on   big   be.3sg   tree   Peter   climb.ptc

   c. *??* _Taj_   _nepoznati_   **_je_**   _čovjek_   *nazvao*   *Mariju.*
       this   unknown   be.3sg   man   call.ptc   Maria

Scope: collective and distributive reading

- See *combien*-split XP examples in French in Obenauer (1976), or split NPs in Japanese in Nakanishi (2007).[1]

- Example (11), in which the clitic unambiguously attaches after the first phrase, has two, i.e. the collective and the distributive reading, while apparent prosodic placement as in example (12) only has one reading. See Cook and Payne (2006) for the assumption that only topics allow for distributed reading.

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[1] Thanks to Maribel Romero for hints, and a fruitful discussion of the semantic and pragmatic properties of split constructions.

(11) *Koliko*   *članaka* *su*   *svi* *ti*   *studenti* *pročitali?*
      how-many   articles   be.3pl   all   these   students   read.ptc

    ?n: ∃nx article(x) & ∀y [student(y) → read(y,x)]
    How many articles exist, such that all students read them?

    ?n: ∀y [student(y) → ∃nx article(x) & read(y,x)]
    What is the number, such that all students read that number of papers?

(12) *Koliko*   *su*   *svi* *ti*   *studenti* *pročitali* *članaka?*
      how-many   be.3pl   all   these   students   read.ptc   articles

    * ?n: ∃nx article(x) & ∀y [student(y) → read(y,x)]

      ?n: ∀y [student(y) → ∃nx article(x) & read(y,x)]

Thus this effect could be expected for apparent prosodic NP-splits too:

(13) <u>*Koliko*</u>   **su**   <u>*članaka*</u> *svi* *ti*   *studenti* *pročitali?*
      how-many   be.3pl   articles   all   these   students   read.ptc

    * ?n: ∃nx article(x) & ∀y [student(y) → read(y,x)]

      ?n: ∀y [student(y) → ∃nx article(x) & read(y,x)]

5 Basic Analysis

Need to account for the following facts:

- Clitics can be realized in various places, e.g. after the first prosodic word, after the first syntactic phrase.

- However, clitics can also be realized in third or fourth position (prosodically, and syntactically, see Ćavar and Wilder (1999)) (e.g. examples (15a-c) vs. (15d)) for second or third syntactic constituent, examples in (2 for second or third phonological word).

- Clitics cannot be realized after the first prosodic word in embedded contexts (17).

- Clitic Cluster can be broken in embedded (22) or VP-topicalization (21) contexts.

- Some variants are only grammatical with a certain intonational contour.

- Strict string adjacency between complementizers and clitics

- Clitic climbing out of infinitival complement clauses.

- etc.

Our approach

- The clitic cluster always follows a syntactic phrase, cases of "clitics after the first prosodic word" are cases of discontinuous syntactic phrases.

- Variants differ in their contribution to information structure.

- Information structure may pose constraints on the prosodic realization of a sentence.

Basic Architecture

- Although we argue against the prosodic inversion account, we follow Bögel et al. (2009, 2010) in assuming a pipeline architecture between Prosody and Syntax.

- Following work on information structure (IS) in LFG (e.g. Bresnan 2001, Choi 1999, King 1997), we assume that certain c-structure positions can be associated with IS functions.[2]
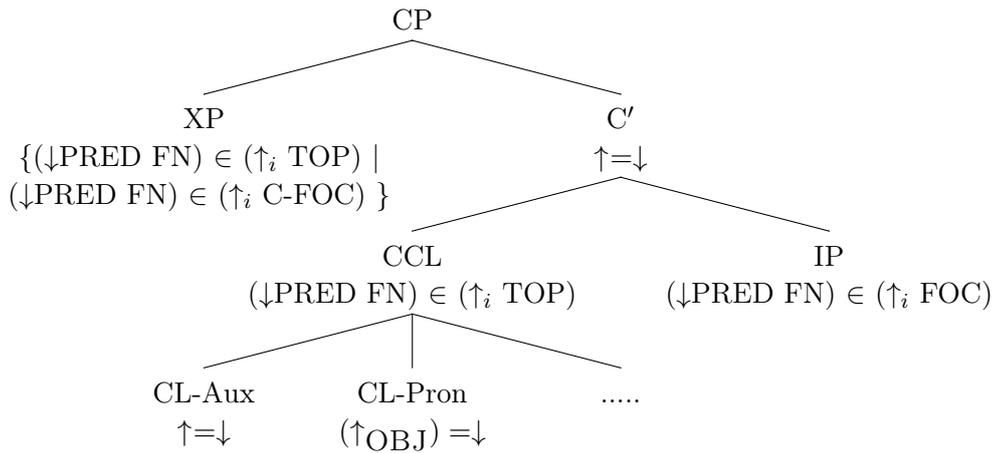
Figure 2: Basic c-structure template including a clitic cluster (CCL)

Details of the analysis:

- The clitic cluster marks the boundaries between TOP(ic) and FOC(us), i.e. the elements following the clitic cluster are in the default focus domain (e.g. VP), associated with the FOC(us) role.

- The elements before the clitic cluster can be interrogative XPs, TOP(ic) or C(ontrastive) FOC(us) (cf. Choi 1999, Cook and Payne 2006, King 1995, Mchombo et al. 2005).

- Specific focus background structures are associated with split constructions, which are prosodically marked. These constructions require the initial split subconstituent to be stressed.

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[2] We leave the question of semantic structure aside here. However, we believe that semantic structure can be incorporated in our approach, e.g. along the lines of Dalrymple and Nikolaeva (to appear).

- Applying e.g. Choi's (1999) features "Prom[inent]" and "New" to encode the basic information structure roles (see table), Spec-CP would require a +Prom role. If additionally a pitch accent is used, this information bit might also be +New.

	− **New**	+ **New**
− **Prom**	Tail	Completive Focus
+**Prom**	Topic	Contrastive Focus

- Syntactic Structure of split NPs:
  - Individual parts of split NPs can functional as independent NPs
  - Problem: Pred-value clashes need to be avoided
  - Previous analyses: e.g. Kuhn (1999), Nordlinger (1998)
  - Alternative we suggest: treat split-off adjectives and/or demonstratives as headless NP constructions (otherwise having a *pro* pred-value if standalone)

The different analyses for the two basic constructions will be illustrated using the well-known examples in (14)

(14)   a.   *Taj   čovjek   **joj**   **ga**   **je**   poklonio.*
           this   man   her   it   be.3sg   present.ptc
           "This man presented it to her."

        b.   *Taj   **joj**   **ga**   **je**   čovjek   poklonio.*
           this   her   it   be.3sg   man   present.ptc

CP

NP
($\downarrow$PRED FN) $\in$ ($\uparrow_i$ TOP)

C′
$\uparrow=\downarrow$

D
$\uparrow=\downarrow$

taj

N
$\uparrow=\downarrow$

covjek

CCL
$\uparrow=\downarrow$

IP
($\downarrow$PRED FN) $\in$ ($\uparrow_i$ FOC)

CL-Pron
($\uparrow$OBJ-TH) $=\downarrow$

joj

CL-Pron
($\uparrow$OBJ) $=\downarrow$

ga

CL-Aux
$\uparrow=\downarrow$

je

VP
$\uparrow=\downarrow$

V
$\uparrow=\downarrow$

poklonio
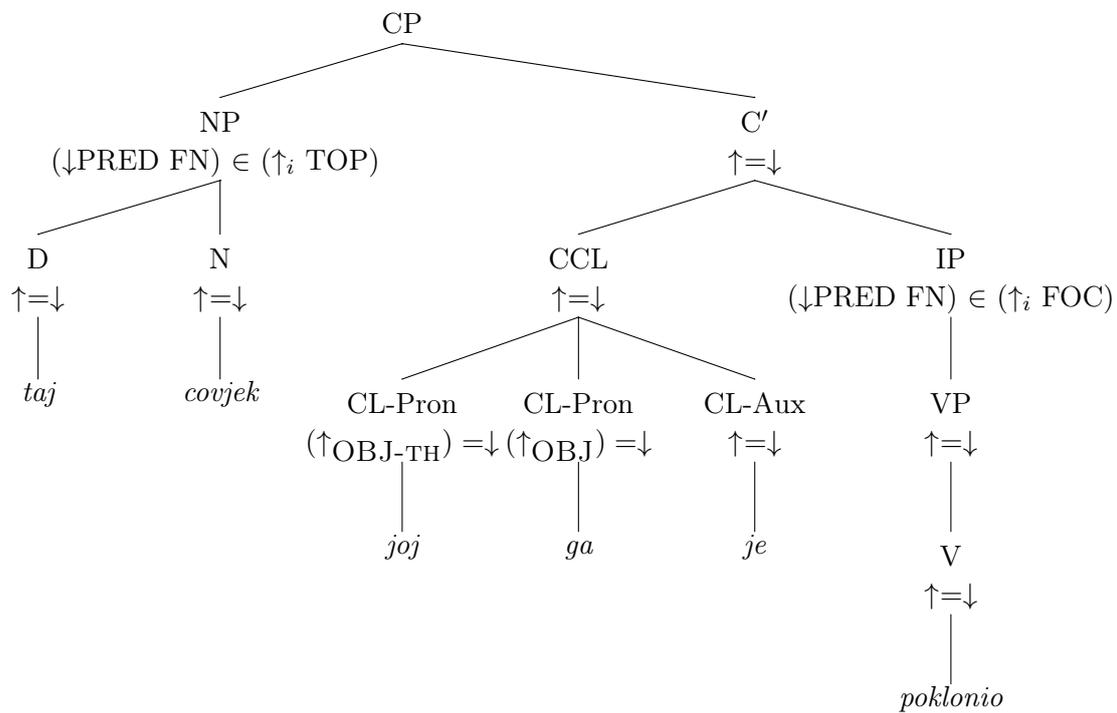
Figure 3: Analysis for (14a): Clitics after the first phrase

CP

NP
$(\downarrow$PRED FN$) \in (\uparrow_i$ C-FOC$)$

C′
$\uparrow=\downarrow$

D
$\uparrow=\downarrow$

taj

CCL
$\uparrow=\downarrow$

IP
$(\downarrow$PRED FN$) \in (\uparrow_i$ FOC$)$

CL-Pron
$(\uparrow_{\text{OBJ-TH}})=\downarrow$

CL-Pron
$(\uparrow_{\text{OBJ}})=\downarrow$

CL-Aux
$\uparrow=\downarrow$

NP
$(\uparrow_{\text{SUBJ}})=\downarrow$

VP
$\uparrow=\downarrow$

joj

ga

je

N
$\uparrow=\downarrow$

V
$\uparrow=\downarrow$

covjek

poklonio

Figure 4: Analysis for (14b): Clitics after the first word

6 Further Data and Analyses

In this section we go through more data which has proven to be difficult for other analyses and show how our analysis can account for it naturally

6.1 Clitic Third, Fourth ...

Clitics do not always have to be at second position (see also (2) for an example of a complex split DP):

- (North-)Western New-Shtokavian: tendency for Clitic-Third (or -Fourth), sequences like XP V CCL ... are very frequent

- (South-)Eastern: tendency for stricter Clitic-Second
    - syntactic (after initial constituent) in Dalmatia and West-Herzegovina,
    - prosodic (after initial phonological word) in Eastern variants

(15) **Examples from the Croatian Language Corpus (CLC)**
(http://riznica.ihjj.hr)

    a. CP V.ptc CCL . . .

      [*Da   održi koncert*] [*pozvao*   ] ***ga   je***   *Katolički pokret*
        that   hold   concert   call-on.ptc   him be.3sg catholic   organization
      za žene
      of women

    b. X NP V.ptc CCL . . .

      [*Doduše,*] [*hrvatski igrač*   ] [*isprovocirao*] ***ga   je***   *startom*
        honestly   croatian player   needle.ptc   him be.3sg initially
      s   leđa
      from back

    c. C NP NP C NP NP AUX CCL . . .

      [*Ali   ni   jedan ni   drugi,*] [*dakle ni   govoreni ni   pisani*
        but   not one   not other,   that   not spoken   not written
      jezik   ] [*nisu*   ] ***mu*** *mogli biti korisni neposredno.*
      language   not-be.3pl   him could be   helpful directly

    d. C NP NEG V.imp CCL . . .

      [*ali   pune glave*] [*ne   dadoše*   ] ***mu*** *mira*
        but   full   heads   not give.imp   him piece

6.2 Examples with relative clauses

Clitics cannot split noun and relative clause in topic position (O'Connor 2002) (see Ćavar and Wilder (1999) for a discussion of these constructions in Croatian).

(16)   a. *Moja sestra, koja je   u Sarajevu, seća   vas   se.*
          My   sister   who be.3sg in Sarajevo remembers you.2pl.acc refl
          "My sister, who is in Sarajevo, remembers you."

        b. **Moja sestra vas   se, koja je   u Sarajevu, seća*
          My   sister you.2pl.acc refl who be.3sg in Sarajevo remembers

- Obvious problem for phonological clitic placement accounts.

- Generalization: (16a), either the whole subject NP is in Topic position, or the NP is in Topic position and the relative clause is right extra-posed.

6.3 Clitics in embedded clauses

- Clitics occupy the second position in matrix and embedded clauses (Ćavar 1999, Halpern 1995)

(17) a. *Borna tvrdi   da   **joj ga je**   taj   čovjek poklonio.*
       B.   claim.3sg that her it be.3sg this man   present.ptc
       "Borna claims that this man presented it to her."

   b. **Borna tvrdi   da   taj   **joj ga je**   čovjek poklonio.*
       B.   claim.3sg that this her it be.3sg man   present.ptc

Analysis: Because both, the clitic cluster and the complementizer are realized in C, no material can intervene, i.e. string adjacency condition between complementizer and clitic cluster.

6.4 Breakable Clitic Cluster

(18) **Clitics cluster: Slot-model**

   li – Aux. – Dat.Pron. – Acc.Pron. – Refl.Pron. / *je* (Aux.3sg)

(19) **Multiple clitic clusters:**

   *Ivan **mu je**   rekao   da   **mu ga** neće   dati.*
   Ivan him be.3sg say.ptc that him it not-want.3sg give.inf
   "Ivan told him that he will not give it to him."

(20) **Unbreakable cluster?**

   a. *Neko dijete **mi ga je**   donjelo.*
      some child   me it be.3sg bring.ptc
      "Some child has brought it to me."

   b. **Neko **mi** dijete **ga je**   donjelo.*
      some me child   it be.3sg bring.ptc

(21) **Breakable cluster with for example VP-topicalization:**

   a. *Ivan **mu je**   kupio   auto, a   ne   Stipe.*
      I.   him be.3sg buy.ptc car   and not S.
      "Ivan has bought him a car, and not Stipe."

   b. *Kupio   **mu** auto **je**   Ivan, a   ne   Stipe.*
      buy.ptc him car   be.3sg I.   and not S.

(22) **Optional Clitic-raising out of infinitival complements:**

   a. *Ivan **je**   želio   čitati   knjigu u   parku.*
      I.   be.3sg wish.ptc read.inf book   in park
      "Ivan wanted to read a book in the park."

   b. *Ivan **ju je**   želio   čitati   u   parku.*
      I.   it be.3sg wish.ptc read.inf in park
      "Ivan wanted to read it in the park."

   c. *Ivan **je**   želio   čitati   **ju** u   parku.*
      I.   be.3sg wish.ptc read.inf it   in park

d. *Čitati* **ju** *u* *parku* **je** *Ivan* *želio.*
   read.inf it in park be.3sg I.   wish.ptc

7 Conclusion

- The concept of prosodic inversion lacks empirical evidence, and consequently the extension of theoretical concepts at the prosodic and syntactic level is not motivated.

- Clitic placement in the relevant language(s) is syntactic.

- Some complex phrases can be realized discontinuously, imposing serious theoretical problems in various theories

- . . . and these, as well as many other related issues will keep us busy for a while

Appendix

(23)

			Singular			Plural				
	1.	**2.**	**3.**			**1.**	**2.**	**3.**		
			f	**m**	**n**			**f**	**m**	**n**
Nom	*ja*	*ti*	*ona*	*on*	*ono*	*mi*	*vi*	*one*	*oni*	
Acc	*me*	*te*	*ju/je*	*ga*		*nas*	*vas*	*ih*		
Gen			*je*	*ga*						
Dat	*mi*	*ti*	*joj*	*mu*		*nam*	*vam*	*im*		

Table 1: Pronouns and pronominal clitics (Ćavar and Wilder 1999, p. 465)

(24)

		Be			Want		
		Present			Future		
Num	**Pers**	**Pos**	**Neg**	**Encl**	**Pos**	**Neg**	**Encl**
Sg	**1**	*jesam*	*nisam*	*sam*	*hoću*	*neću*	*ću*
	2	*jesi*	*nisi*	*si*	*hoćeš*	*nećeš*	*ćeš*
	3	*jē/jest*	*nije*	*je*	*hoće*	*neće*	*će*
Pl	**1**	*jesmo*	*nismo*	*smo*	*hoćemo*	*nećemo*	*ćemo*
	2	*jeste*	*niste*	*ste*	*hoćete*	*nećete*	*ćete*
	3	*jesu*	*nisu*	*su*	*hoćē*	*nećē*	*će*

Table 2: Auxiliaries, full forms and clitics (Ćavar and Wilder 1999, p. 465)

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