The effects of prosodic constituency on clitic placement

Boris Harizanov  
University of California, Santa Cruz

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• Macedonian and Bulgarian:  
  ○ genetically related Eastern South Slavic languages;  
  ○ geographically related members of the Balkan Sprachbund.

• Clitic placement:  
  ○ verb-adjacent clitics in both languages may precede or follow the verb;  
  ○ however, only Macedonian clitics can appear in an initial position:

  (1)  
  a. dade  
    mu  
    ja  
    (s)he gave 3.SG.M.DAT 3.SG.F.ACC  
    ‘(s)he gave it to him’  
    (Bulgarian: ✓, Macedonian: *)

  b. mu  
    ja  
    dade  
    3.SG.M.DAT 3.SG.F.ACC (s)he gave  
    ‘(s)he gave it to him’  
    (Bulgarian: *, Macedonian: ✓)

• Traditional explanation:
  ○ a constraint against initial clitics is active in Bulgarian but not in Macedonian.  
  (see e.g. Franks 2008, p. 102, and references therein)

• Claims:  
  ○ the difference in clitic placement is predictable from independently observable differences in the prosodic behavior of clitics in the two languages;  
  ○ Macedonian clitics attach below the Prosodic Word level; Bulgarian clitics attach higher;  
  ○ Bulgarian clitics exhibit variable placement, as a response to a constraint that prohibits clitics parsed outside Prosodic Words from appearing at the left edge of the utterance.

• Theoretical questions:  
  ○ How does prosody interact with other components of the syntax-phonology interface—in particular, linearization?

    → Prosodically deficient elements (clitics) are linearized in non-canonical positions to avoid prosodically deviant structures.
• What is the nature of constraints on prosodic well-formedness?
  → They can be subject to a certain kind of visibility restriction, so that they may target specific prosodic constituents to the exclusion of others.

• Roadmap:
  ○ demonstrate differences in clitic placement between Macedonian and Bulgarian;
  ○ explain these differences in terms of differences in the prosodic behavior of clitics;
  ○ empirically demonstrate the different prosodic behaviors of clitics in the two languages.

1 The contrast in clitic placement

1.1 Macedonian clitics

• Clitics-host order with tensed hosts:
  (lexical verbs that bear tense morphology and -l participles, Joseph 1983)

(2) a. kučeto ja kasa mačkata
    the.dog 3.SG.F.ACC bites the.cat
    ‘the dog bites the cat’
    (Friedman 2001, p. 37)

b. * kučeto kasa ja mačkata

(3) a. neizinata stara majka ti go dala
    her old mother 2.SG.DAT 3.SG.M.ACC given
    ‘her old mother has given it to you’
    (Tomic 1996, p. 830)

b. * neizinata stara majka dala ti go

• Clitics-host order is preserved in initial position:
  (when subjects are dropped or in the absence of topicalized/focused constituents)

(4) a. go vikna deteto
    3.SG.M.ACC (s)he.called the.child
    ‘s/he called the child’
    (Vidoeski 2005, p. 16)

b. * vikna go deteto

(5) a. Ti ja dade li Ana vaznata?
    2.SG.DAT 3.SG.F.ACC gave Q Ana the.vase
    ‘Did Ana give the vase to you?’
    (Tomic 1996, p. 825)

b. * Dade li ti ja Ana vaznata?

• Host-clitics order with non-tensed hosts (e.g. imperatives):

(6) a. daj mi ja knigata
    give.IMP 1.SG.DAT 3.SG.F.ACC the.book
    ‘give me the book’
    (Tomic 1996, p. 824)

b. * mi ja daj knigata
1.2 Bulgarian clitics

- Clitics-host order “by default” (but not second-position):

(7) a.  Petko vinagí mi go dava
       Petko always 1.SG.DAT 3.SG.M.ACC gives
       ‘Petko always gives it to me’

   b.  * Petko vinagí dava mi go

- Host-clitics order if the other order would leave the clitics in initial position:

(8) a.  * mi go dade Petko
       1.SG.DAT 3.SG.M.ACC gave Petko
       ‘Petko gave it to me.’

   b.  dade mi go Petko

- Finiteness/tenseness of the host does not play a role:

(9) a.  daj mi ja knigata
       give.IMP 1.SG.DAT 3.SG.F.ACC the.book
       ‘Give me the book.’

   b.  * mi ja daj knigata

   c.  bárzo mi ja daj knigata
       quickly 1.SG.DAT 3.SG.F.ACC give.IMP the.book
       ‘Give me the book quickly.’

- Macedonian:

  o clitic placement is not sensitive to prosody;
  o could be accounted for solely in terms of morphosyntax.

- Bulgarian:

  o clitic placement is sensitive to prosodic context;
  o syntax is necessary but not sufficient (cf. Bošković 2001).

2 Prosodically driven clitic placement

- Intuition:

  1. Postverbal clitic placement in Bulgarian results from an interaction between the phonological properties of clitics and principles of prosodic well-formedness.

  2. Preverbal clitic placement is avoided when it yields prosodic deviance, with a prosodically deficient element in a position reserved for prosodically strong elements.
• Assumptions:
  1. Prosodic structures are organized hierarchically in constituents, which are based on, but not isomorphic to, syntactic constituents.¹ (Selkirk 1995 among others)

    \(\text{(10) Prosodic constituents above the level of the Foot}\)
    
    a. \(\iota\): Intonational Phrase
    b. \(\phi\): Phonological Phrase
    c. \(\omega\): Prosodic Word

  2. Clitics: phonological forms (realizing morphosyntactic elements) which are deficient in prosodic structure at the level of the Prosodic Word.

• Main ingredients of the analysis:
  1. **Prosodic organization of clitics**: Macedonian clitics adjoin below the Prosodic Word level, while Bulgarian clitics adjoin higher (§2.1).
  2. **STRONG START constraint**: left edges of certain prosodic constituents do not tolerate prosodically deficient material (§2.2).

• Consequences:
  1. only clitics adjoined above the Prosodic Word level (as in Bulgarian) can potentially violate **STRONG START**;
  2. clitics in Bulgarian appear postverbally to avoid prosodic deviance.

2.1 The prosodic organization of clitics

• A typology of the attachment of clitics to their hosts (see Selkirk 1995 and Ito and Mester 2009, among others)

  \(\text{(11) a. Internal clitics b. Affixal clitics c. Free clitics}\)

  \[
  \begin{array}{ccc}
  \text{clitic host} & \text{clitic} & \text{host} \\
  \omega & \sigma & \phi \\
  \end{array}
  \]

• The hypothesis
  ○ Clitics in Macedonian are internal and/or affixal
    as in Serbian (Zec 2005: Section 3) and Neapolitan, Lucanian (Anderson 2011, Peperkamp 1997); see also Rudin et al. 1999
  ○ Clitics in Bulgarian are free
    as in Serbian (Zec 2005: Section 2) and Standard Italian (Anderson 2011, Peperkamp 1997); see also Rudin et al. 1999

¹I assume an impoverished inventory of prosodic constituents, in which the Utterance is replaced by the maximal Intonational Phrase. For present purposes nothing hinges on this choice.
2.2 STRONG START

- Edges of prosodic constituents that are relatively high on the Prosodic Hierarchy tend to be positions of prosodic strength. (cf. Selkirk 2010, Elfner 2011, Bennett et al. to appear)

(12) **STRONG START**

The leftmost constituent of a maximal Intonational Phrase should not be a prosodically deficient element (i.e. it must be parsed inside a Prosodic Word).\(^2\)

- Compare to:
  - the constraint active at the right edge of Phonological Phrases in English
    Selkirk 1995, p. 200
  
  (13) a. I don’t know whether Ray is \( [\text{ɪz}], *[\text{z}] \)
  b. I can eat more than Sarah can \( [\text{kæn}], *[\text{kən}], *[\text{kn}] \)

  - the constraint active at the left edge of Phonological Phrases in Irish

  (14) a. *Object pronoun postposing*
    Fuair sé ___ óna ___ dheartáir an lá cheana __.
    got he from-his brother the other day it
    ‘He got it from his brother the other day.’ (Irish; Bennett et al. to appear, (2))
  b. *Object pronoun strengthening*
    Thóg ___ siad ___ i ___ ar ___ bord.
    raised they her on board
    ‘They lifted her on board.’ (Irish; Bennett et al. to appear, (5c))

- **STRONG START** is satisfied in Bulgarian via variable placement of the clitics:

  (15) a. *Marija mu pročete knigata*
      Maria 3.SG.M.DAT read the.book
      ‘Maria read the book to him’
  b. ___ pročete mu knigata Marija
      read 3.SG.M.DAT the.book Maria

  (16) a. 
      \[
      \phi \quad \phi \\
      \omega \quad \gamma _{\text{pročét}} \quad \omega \quad \omega \\
      \text{Marija} \quad \text{mu} \quad \text{pročétě} \quad \text{knigata}
      \]
  
      b. 
      \[
      \phi \quad \phi \\
      \gamma _{\text{pročét}} \quad \omega \quad \omega \quad \omega \\
      \text{mu} \quad \text{pročétě} \quad \text{knigata} \quad \text{Marija}
      \]

\(^2\)See Appendix A for discussion of this constraint’s domain of application in Bulgarian.
Summary:

1. only the Bulgarian clitics are expected to potentially violate strong start because they are adjoined above the Prosodic Word level;
2. Macedonian clitics, being inside Prosodic Words, are in a sense invisible to this version of strong start.

3 Evidence for the prosodic attachment sites of clitics

3.1 Macedonian

- Clitics participate in phonological processes which apply within Prosodic Words.

3.1.1 Stress

- Regular antepenultimate stress, and initial in mono- or disyllabic words.
- Postverbal clitics affect stress placement, shifting it to the antepenultimate syllable:
  
  \[
  \begin{align*}
  (17) & \quad \begin{align*}
  & \text{a. } DO_{nesi} \\
  & \quad \text{bring.IMP}
  \\
  & \text{b. } do{NE}_{si} \text{ go} \\
  & \quad \text{bring.IMP 3.SG.M.ACC}
  \\
  & \text{c. } do{neSI} \text{ mi go} \\
  & \quad \text{bring.IMP 1.SG.DAT 3.SG.M.ACC}
  \end{align*}
  \end{align*}
  \]

- Preverbal clitics also interact with stress placement in certain contexts: (e.g. sentential negation, wh-questions)

  \[
  \begin{align*}
  (18) & \quad \begin{align*}
  & \text{a. } ne \text{ GO vide} \quad (\text{cf. go } Vldea) \\
  & \quad \text{not 3.SG.M.ACC (s)he.saw}
  \\
  & \quad \text{‘(s)he didn’t see him’}
  \\
  & \text{b. } zo{što} \text{ mu GO dade} \quad (\text{cf. mu go DAde})
  \\
  & \quad \text{why 3.SG.M.DAT 3.SG.M.ACC gave}
  \\
  & \quad \text{‘why did you give it to him’}
  \end{align*}
  \end{align*}
  \]

3.1.2 Vowel deletion

- preverbal CV clitics lose their vowel when followed by a V-initial stem:
  
  \[
  \begin{align*}
  \text{\cite{Vidoeski2005}} \quad \text{p. 21}
  \end{align*}
  \]

---

\(^3\) Capital letters mark stressed syllables.

\(^4\) Square brackets do not imply IPA transcription.
(19)  a.  go ostai → [gostai] ‘(s)he left it’
     b.  se utepa → [sutepa] ‘(s)he hurt her/himself’
     c.  k’e igram → [k’igram] ‘I’ll play’
     d.  ne izleze → [nizleze] ‘didn’t come out’

- Assumptions:
  - domain of stress assignment: minimal Prosodic Word;
  - domain of alternations like V-deletion: maximal Prosodic Word.

- Prosodic structure:
  (20)  a.  Pre- and postverbal clitics that affect stress:
        \[
        \omega \overrightarrow{\text{clitic host}} \omega
        \]
  b.  Preverbal clitics that do not affect stress:
        \[
        \sigma \overrightarrow{\text{clitic}} \omega
        \]

- Assumptions about the mapping from syntax to prosody:
  1.  clitic status (i.e. prosodic deficiency) is lexically encoded (Zec 2005);
  2.  recursive Prosodic Word structures are allowed;
  3.  Phonological Phrases must be exhaustively parsed into Prosodic Words.

3.2 Bulgarian

- Clitics do not participate in processes which apply within Prosodic Words.

3.2.1 Stress

- Lexical stress.
- Some morphemes can affect word stress placement:
  (21)  a.  hubost → [HUbost] ‘beauty’
        b.  hubost+tăDEF → [hubostTA] ‘the beauty’

- Clitics do not affect the position of stress:
  (as in Italian, Spanish and Ancient Greek)
  (22)  a.  doneSI bring.IMP
        b.  doneSI go bring.IMP 3.SG.M.ACC
        c.  doneSI mi go bring.IMP 1.SG.DAT 3.SG.M.ACC
3.2.2 Voicing alternations

- Some morphemes bleed word-final devoicing:

  (23) a. \( \text{măž} \rightarrow [măš] \) ‘man’
  b. \( \text{măž} + \text{DEF} \rightarrow [măžă] \) ‘the man’
      \( \text{măž} + \text{PLURAL} \rightarrow [măže] \) ‘men’

- Clitics do not bleed word-final devoicing:

  (24) a. \( \text{măž} + e_{\text{COPULA}} \rightarrow [măš e] \) ‘it’s a man’
      \( \text{măž} + i + e_{\text{COPULA}} \rightarrow [măš i e] \) ‘he is her husband’

3.2.3 Metathesis

- Some morphemes interact with liquid/ă metathesis:

  (25) a. \( \text{grăb} \rightarrow [grăp] \) ‘back’
  b. \( \text{grăb} + \text{DEF} \rightarrow [gărbă] \) ‘the back’
      \( \text{grăb} + \text{PLURAL} \rightarrow [gărbove] \) ‘backs’

- Clitics do not interact with liquid/ă metathesis:

  (26) a. \( \text{grăb} e_{\text{COPULA}} \rightarrow [grăp e] \) ‘it’s a back’
      \( \text{grăb} i \rightarrow [grăp i] \) ‘her back’

- Assumption:
  - domain of stress assignment and morphophonemic alternations: Prosodic Word.

- Prosodic structure (order not encoded):

  (27) \[ \varphi \]
      \[ \sigma \]
      \[ \omega \]
      \[ | \]
      \[ clitic \]
      \[ host \]

- Assumptions about the mapping from syntax to prosody:

  1. clitic status (i.e. prosodic deficiency) is lexically encoded (Zec 2005);
  2. Phonological Phrases do not have to be exhaustively parsed into Prosodic Words.
4 Concluding remarks

• Summary
  ○ Clitic placement in Bulgarian is variable and sensitive to prosody; clitic placement in Macedonian does not depend on prosody.
  ○ Variability in clitic placement correlates with the prosodic adjunction site of clitics: above the Prosodic Word level (Bulgarian) or below this level (Macedonian).
  ○ The proposed analysis relates these facts causally by recognizing the role of principles of prosodic well-formedness in linearization.

• Typological considerations
  ○ Finding: constraints on prosodic well-formedness like STRONG START must be restricted, at least in this case, so they interact with clitics but cannot “see” inside Prosodic Words.
  ○ If STRONG START is universally restricted in this way, the analysis predicts that the clitics in a language that can be shown to have this version of STRONG START may not be subject to variable placement (or strengthening, etc.) if they participate in Prosodic Word-level phonological processes.
  ○ A related question: is there a language in which STRONG START imposes requirements on prosodic structure below the Prosodic Word level?
  ○ A more general question: do we find any interactions between Prosodic Word-level phonological processes and prosodic constituents that are “too high” on the prosodic hierarchy?

Appendix A: On prosodic subcategorization

• Clitic placement in Bulgarian is not a matter of prosodic subcategorization (i.e. lexical specification as an enclitic)
  ○ the clitics can immediately follow unstressed elements:
    (see Franks and Bošković 2001 on the interaction between coordination and cliticization)
    "... i/no/cè mi go dade Petko včera and/but/that 1.SG.DAT 3.SG.M.ACC gave Petko yesterday ‘... and/but/that Petko gave it to me yesterday.’"

  ○ the clitics can immediately follow Intonational Phrase boundaries:
    (see Pancheva 2005, p. 134 and Franks 2008, p. 99)
    "a. Portieră na cirka, sâšto armenec, go pita: … the.gatekeeper at the.circus also an.armenian 3.SG.M.ACC asked ‘the circus gatekeeper, (who was) also an Armenian, asked him’ (BNC5)"
Appendix B: STRONG START in Macedonian?

- Can the potential activity of strong start in Macedonian be detected?

- If

  - clitics can have distinct prosodic adjunction sites, and
  - strong start is active in both Bulgarian and Macedonian,

- then we might expect to find

  - clitics in Macedonian adjoined above the Prosodic Word that cannot be initial.

- The question particle *li* cannot appear initially even though, in the following example, it occupies the highest syntactic position (C):
  (Rudin et al. 1999, p. 543)

  \[(30)\]
  a.  *Go vide li?  
  3.SG.M.ACC saw Q  
  ‘Did (s)he (s)he see him?’
  b.  *Li go vide?
  c.  *Go li vide?

- As predicted by the present account, the sensitivity of *li* to strong start correlates with its prosodic attachment site: *li* does not affect stress placement in Macedonian (cf. (17)).
  (Rudin et al. 1999, p. 552)

  \[(31)\]
  a.  *dNEsuvaš*  
  you.bring  
  ‘you are bringing’
  b.  *dNEsuvaš li?*  
  you.bring Q  
  ‘are you bringing?’

- *li* must then be adjoined above the Prosodic Word level (as the Bulgarian clitics under discussion); therefore, strong start may be active in Macedonian as well.
Abbreviations


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*Department of Linguistics*

*University of California, Santa Cruz*

*1156 High Street*

*Santa Cruz, CA 95064*

[http://people.ucsc.edu/~bharizan/](http://people.ucsc.edu/~bharizan/)

*bharizan@ucsc.edu*