# Participle fronting in Bulgarian as XP-movement[*]

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## 1. Introduction

This article discusses fronting of the past participle in Bulgarian. The result of this movement is that the past participle is placed in clause initial position immediately preceding the auxiliary verb, as in (1b). Since the past participle is not able to pied pipe the direct object *knigata* 'the book' or any other VP-internal material, it is generally assumed that participle fronting is an instance of head-movement.

(1) a. Paulina e  pročela  knigata
       Paulina be.3sg read.fem.sg book-the
       'Paulina has read the book.'
    b. Pročela  e  knigata
       read.fem.sg be.3sg book-the

The first head-movement analysis is due to Lema and Rivero (1989). They assumed that the past participle is moved to C. This proposal has three problems. First, this analysis implies that head-movement crosses the head-position occupied by the auxiliary and therefore violates the HMC: in order to license this violation, Lema and Rivero propose to derive the HMC-effects from a slightly complicated version of the ECP. The second, and more serious, problem is that this proposal wrongly predicts that the subject may be placed between the participle in the C-position and the auxiliary in the I-position (or some lower position).

(2) *[CP Pročela [IP Paulina [I′ e [… knigata]]]

The third problem is that this proposal wrongly predicts that participle fronting is restricted to main clauses. This is indeed what is claimed by Lema and Rivero, but it seems that there is some variation here, since Embick and Izvorski (1994) give example (3a) as acceptable; another example, taken from Lambova (2002), is given in (3b). Examples like these are also accepted by many of our own informants.

(3)  a.   Rasbrah    če   pročel    beše      knigata
          understood that read.MASC.SG be.PAST.3SG book-the
          'I understood you had read the book.'
     b.   Decata kazvat če gledali    sa        filma
          kids-the say    that watched.PL be.PRES.3PL movie
          'The kids say that they have seen the movie.'

An alternative head-movement analysis of participle fronting is given by Bošković (1997). According to him, the participle is not moved to C, but adjoined to the auxiliary. This proposal has no problems with the HMC, and also correctly predicts the judgments on the examples in (2) and (3). The problem with this account is, however, that it wrongly predicts that the participle may be preceded by the subject.[1]

(4)  a.   *[$_{IP}$ Paulina [$_{I'}$ pročela+e [.... knigata]]]

This article is organized as follows. Section 2 briefly discusses the crucial observation on which our analysis will be based. Section 3 proposes an XP-movement approach to participle fronting in Bulgarian, and shows how this solves the problems concerning the subject. Although we conclude that the XP-analysis deserves more credit than it has been given so far, this does not mean that we want to trivialize the Pied Piping problem noted by Lema and Rivero. Therefore, we will also argue that the ban on Pied Piping can at least partially be solved. Section 4 will go a bit more detailed into the question what forces participle fronting to apply. We will see that there are actually two cases that must be distinguished: the analysis here takes recourse to an optimality-theoretic evaluation. Section 5 will show that our analysis has several properties in common with the analysis of Locative Inversion in Hoekstra and Mulder (1990). Section 6, finally, discusses the fact that the Slavic languages exhibit slightly different behavior with respect to participle fronting and sketches a preliminary analysis for one difference between Bulgarian and Serbo-Croatian. The discussion in this article is couched in the Derivation-and-evaluation model, as developed in Broekhuis and Dekkers (2000) and Broekhuis (2000).

## 2.   The basic observation

A remarkable property of the past participle in Bulgarian is that it agrees in φ-features with the subject of the clause, irrespective of the question whether the participle is unergative or unaccusative.[2] This is illustrated for unergative verbs by the examples in (5), where the shape of the participle depends on the subject of the clause.

(5)  a.   Ivan       e      pročel     knigata
          Ivan.MASC.SG be.3SG read.MASC.SG book-the
     b.   Paulina    e      pročela    knigata
          Paulina.FEM.SG be.3SG read.FEM.SG book-the

The fact that the subject and the past participle of an unergative verb agree in φ-features makes Bulgarian (and the other Slavic languages) crucially different from the Romance languages. In the latter languages, agreement between the subject and a participle is only possible when the subject is an internal argument of the verb, that is, in unaccusative and passive constructions. What we would like to suggest is that this is due to a difference in structure: in unergative examples like (5), the subject is the external argument of the participle, whereas in the Romance, as well as in the Germanic languages, the subject is generated as the subject of the perfect tense auxiliary. This is in line with the proposal in Broekhuis and Van Dijk (1995), according to which the perfect tense auxiliaries HAVE and BE differ in that the former takes an external argument (and is able to assign accusative case), whereas the latter does not. The structural difference is therefore as indicated in (6).

(6)   a.   … [BE [$_{vp}$ DP$_{agent}$ v [$_{VP}$ V$_{PART}$ DP$_{theme}$]]]                                   (Slavic)
        b.   … [$_{vp}$ DP$_{agent}$ v [$_{VP}$ HAVE [$_{VP}$ V$_{PART}$ DP$_{theme}$]]]        (Romance, Germanic)

The analysis in (6b) is also in line with the proposal that, in the Romance and the Germanic languages, the past and passive participles must receive a uniform analysis (Hoekstra 1984): we adopt the insight from Jaegli (1986) and Roberts (1987) that the passive participle morphology absorbs both the external argument and accusative case, and extend it to all participle forms; the function of the auxiliary HAVE is to reintroduce the agent and accusative Case (see Broekhuis and Van Dijk, 1995, for discussion). The analysis in (6a), on the other hand, implies that past and passive participles do not receive a uniform analysis in Bulgarian (and the other Slavic languages). This seems *a priori* plausible given that the two are also morphologically different in this language, as can be seen by comparing the form of the passive participle *pročetan*+AGR in (7) to the form of the past participle *pročel*+AGR in (5a).

(7)   Knigata   e  pročetana ot Ivan
        book-the is read        by Ivan

The crucial point for the remainder of this article is that the subject and the participle phrase (VP) in (6a) are in the canonical Small Clause configuration (Hale and Keyser 1993), as the result of which the two may agree in φ-features. This is not the case in (6b), and, consequently, agreement is not possible.


## 3.   An XP-analysis

Movement is a "last resort" operation in the sense that movement can only apply when it results in feature checking. Given that, in Bulgarian, both the subject and

the participle have φ-features that may check the φ-features of I (or aux), they both count as candidates for movement into SpecIP.

(8)   a.   [$_{IP}$ Paulina [$_{I'}$ e [… pročela knigata]]
      b.   [$_{IP}$ Pročela [$_{I'}$ e [… knigata …]]

This proposal, which has much in common with the analysis of Locative Inversion in Hoekstra and Mulder (1990), immediately predicts the ungrammaticality of the examples in (2) and (4) above: since SpecIP is occupied by the participle, the subject must remain in situ. Actually, there is a preference to realize the subject as *pro*, which suggest that participle fronting is used as a means of "backgrounding" the subject: for many speakers it is possible, however, to overtly realize the subject in (8b) in the positions indicated by the dots when it is emphatically stressed.

   Our proposal also accounts for the fact that the fronted participle and the auxiliary can be split by clitics, as in (9). Contrary to Bošković, we do not need any additional stipulations to regulate the order between the participles and the clitics: given that the participle occupies the specifier position of I, it necessarily precedes the clitics.

(9)   Dal         li mu        go        e?
      given.MASC.SG Q him.DAT.CL him.ACC.CL be.PRES.3SG
      'Has he given it to him?'

Since SpecIP is a specifier position, participle fronting must be an instance of XP-movement. This raises the question why it cannot pied pipe the direct object. The reason for this is that the moved phrase cannot be too "big", due to the fact that the φ-features of the participles must be accessible for checking the φ-features of I. When we assume that the structure of the VP is something like (10), it is reasonable to assume that it is PartP that must be moved, since otherwise the φ-features would be too deeply embedded to check the φ-features of I — the lexical head *v* blocks percolation of the φ-features to a position higher than PartP.

(10)   [$_{IP}$ … I$_{[+φ]}$ … [$_{vP}$ subject$_{[+φ]}$ v [$_{PartP}$ Part$_{[+φ]}$ object]]]

Movement of PartP into SpecIP would, however, move the direct object across the position where its case can be checked, which in its turn would result in a crashing derivation. In order to avoid this, the object first evacuates the PartP in order to check its case, so that it is the remnant of the PartP that is moved into SpecIP. In this respect participle fronting in Bulgarian crucially differs from VP-Topicalization in Dutch or German, where the trigger is a focus or topic feature on C, which may attract an in principle infinitely large phrase. As a result of this, the moved phrase may include the position where the direct object checks its case. That the moved phrase can be larger in the case of VP-topicalization is clear from the fact that VP-adverbs, which are generally assumed to be VP-external can be pied piped.[3]

(11)   [$_{CP}$ [dat boek te snel    gelezen]$_i$ [$_{C'}$ heeft hij niet $t_i$]]
          that boek too quickly read        has  he not

The account for the fact that the direct object cannot be pied piped by participle fronting in Bulgarian is relatively straightforward. This is different with other material that can be assumed to be PartP-internal, such as secondary predicates. We think that this mainly reflects our current understanding of syntax: if Kayne's universal base hypothesis, according to which all complements follow the selecting head, is correct, we have to assume for e.g. Dutch that secondary predicates must be moved out of the VP into some higher position (Koster 1994), although, so far, no trigger for this movement has been identified. However, if the "last resort" approach to movement is correct, we predict that we will eventually identify this trigger. If so, the same reasoning as with respect to the direct object will extend to secondary predicates.

## 4.    When does participle fronting apply?

In the previous section we claimed that movement of the participle into SpecIP satisfies the "last resort" condition since it results in checking of the φ-features of I/aux. To say that the movement is licit is, however, not the same as to say that the movement must apply (overtly). Compare the minimal pairs in (12), which differ in that the examples in (12a&a′) involve an auxiliary in the present tense, whereas the examples in (12b&b′) involve an auxiliary in the past tense.

(12)   a.   Pročela       e                    knigata
              read.FEM.SG be.PRES.3SG.FEM book-the
              'She has read the book.'
       a′.  *E pročela knigata
       b.   Pročela       beše                 knigata
              read.FEM.SG be.PAST.AUX.3SG.FEM book-the
              'She had read the book.'
       b′.  Beše pročela knigata

The fact that (12b′) is grammatical shows that there is no general requirement forcing SpecIP to be filled (with phonetic material). From this we must conclude that whereas "last resort" allows participle fronting to take place in the primeless example, it does not force it to apply.

The fact that participle fronting must apply in (12a) must therefore be due to some other factor. It is not difficult to identify this other factor, since the obligatoriness of participle fronting in this example is traditionally attributed to the fact that the present tense auxiliaries are clitics that must be preceded by overt material. The past tense auxiliaries, on the other hand, are not clitics and can therefore be the first

element in a clause. The difference between the two sets of examples can be readily accounted for by means of an optimality theoretic evaluation. Assume that the following three constraints are part of the universal set of constraints CON:

(13)  a.  STAY: *$t$
      b.  EPP: SpecIP is filled
      c.  AFFIX: an affix is morphologically supported

These constraints are all independently motivated: STAY is a reformulation of the economy condition *Procrastinate* that disfavors movement in overt syntax, the constraint EPP is simply adapted from the Principles-and-Parameter framework, and AFFIX is a reformulation of the Stray Affix Filter. The only "innovation" is that we apply these constraints in an optimality-theoretic fashion. Assume that the Bulgarian ranking of these constraints is as given in (14).

(14)  Bulgarian: AFFIX » STAY » EPP

This ranking accounts for the following facts. The ranking STAY » EPP predicts that, in the normal case, SpecIP remains empty: it is better not to move an element than to satisfy the EPP. The ranking AFFIX » STAY, however, forces movement when this is needed to supply a clitic with morphological support. As can be seen in the following two tableaux, this partly accounts for the data in (12).

**Tableau 1.** Participle fronting with the present tense (clitic) auxiliary

|  | AFFIX | STAY | EPP |
|---|---|---|---|
| a. Pročela$_i$ e knigata $t_i$   ☞ |  | * |  |
| b. E pročela$_i$ knigata | *! |  | * |

**Tableau 2.** Participle fronting with the past tense auxiliary

|  | AFFIX | STAY | EPP |
|---|---|---|---|
| a. Pročela$_i$ beše knigata $t_i$  ☺ |  | *! |  |
| b. Beše pročela knigata   ☞ |  |  | * |

Some work is still needed to account for the fact that candidate 2a, which is now predicted to be suboptimal, is actually grammatical. We can account for this by assuming that a fourth constraint is in play. Actually, we could have foreseen this earlier given that the ranking AFFIX » STAY » EPP wrongly predicts that subjects cannot be placed into SpecIP when the auxiliary is the non-clitic form *beše*: movement of the subject is optional in these cases.

(15)  a.   Paulina beše                    pročela       knigata
          Paulina be.PAST.AUX.3SG.FEM read.FEM.SG book-the
      b.   Beše pročela knigata Paulina
      c.   (?)Beše pročela Paulina knigata

The key to the solution of this problem is provided by Lambova (2001), who has noticed that examples like (12a) can be pronounced in two different ways: one pronunciation pattern involves a marked pitch fall following the participle, and triggers a reading where the participle is emphatically focused; the second pronunciation pattern is neutral, and does not trigger a focus reading. Interestingly, example (12b) can only be realized with a marked pitch fall after the participle and has the concomitant emphatic focus reading.[4] This shows that the missing constraint is related to emphatic focus, and could be formulated as in (16).

(16)   FOCUS: the feature [+focus] is checked

In order to get the desired result, we must assume that FOCUS outranks STAY. There is no evidence bearing on the ranking of FOCUS and AFFIX, due to the fact that they both have the effect of forcing movement in certain cases.[5]

   In order to complete our discussion of the difference between participle fronting in constructions with a present and past tense auxiliaries, we can say that Tableau 1 and Tableau 2, repeated below in a slightly modified form as 3a and 4a, make the correct predictions for those cases where the participle is not emphatically focused. The evaluation of the cases where the participle is emphatically focused is given as 3b and 4b.

**Tableau 3a.** Participle fronting with the present tense auxiliary

| NO EMPHATIC FOCUS | FOCUS | AFFIX | STAY | EPP |
|---|---|---|---|---|
| a. Pročela$_i$ e knigata $t_i$  ☞ | | | * | |
| b. E pročela$_i$ knigata | | *! | | * |

**Tableau 3b.** Participle fronting with the present tense auxiliary

| EMPHATIC FOCUS | FOCUS | AFFIX | STAY | EPP |
|---|---|---|---|---|
| a. Pročela$_i$ e knigata $t_i$  ☞ | | | * | |
| b. E pročela$_i$ knigata | *! | *! | | * |

**Tableau 4a.** Participle fronting with the past tense auxiliary

| NO EMPHATIC FOCUS | FOCUS | AFFIX | STAY | EPP |
|---|---|---|---|---|
| a. Pročela$_i$ beše knigata $t_i$ | | | *! | |
| b. Beše pročela$_i$ knigata ☞ | | | | * |

**Tableau 4b.** Participle fronting with the past tense auxiliary

| EMPHATIC FOCUS | FOCUS | AFFIX | STAY | EPP |
|---|---|---|---|---|
| a. Pročela$_i$ beše knigata $t_i$ ☞ | | | * | |
| b. Beše pročela$_i$ knigata | *! | | | * |

## 5.   Participle fronting and Locative Inversion

In Section 3, we noted that our analysis of participle fronting in Bulgarian is comparable to Hoekstra and Mulder's (1990) analysis of Locative Inversion constructions like (17a). One of the questions that Hoekstra and Mulder's proposal was concerned with was how the postverbal subject is assigned nominative case. Hoekstra and Mulder solved this problem by assuming that case is transmitted via the chain created by locative inversion: the fronted PP is assigned nominative case by I; this case is transmitted via the movement chain to the trace of the fronted PP; ultimately, nominative case is transmitted to the subject of the clause, which is underlyingly the external argument of the SC, due to the fact that it is in a predicative relation with the PP-predicate. When we assume that these three relations are expressed by means of co-indexing, we could say that the assignment of nominative to the DP is derived by the transitivity of co-indexing.

(17)   a.   Down the hill rolled the baby carriage
       b.   $[_{IP}$ PP$_i$ $[_I$ I$_i$ $[_{VP}$ V $[_{SC}$ DP$_i$ $t_i]]]$

In the current version of the minimalist program, the problem of case assignment/ checking to the postverbal DP is no longer considered as problematic as in the time Hoekstra and Mulder's article was written. This could simply be handled by assuming AGREE or by assuming covert movement of the case features of the nominative DP. Instead, the focus has shifted to the question what licenses the movement of the predicative PP in examples like (17). Taking "last resort" as our point of departure, we could handle this by claiming that the predicative relation between the DP and the PP-predicate is formally reflected by (abstract) agreement in φ-features, as indicated by (18) (based on Hale and Keyser's, 1993, analysis of clauses with secondary predicates). As a result of this, I may attract the PP-predicate

since the latter's φ-features are able to check the φ-features of I. This structure is similar in all relevant respects to the structure in (10), which underlies the participle fronting construction in Bulgarian.[6]

(18)   $[_{IP} \ldots I_{[+\varphi]} [_{VP} DP_{[+\varphi]} \, v \, [_{VP} V \, PP_{[+\varphi]}]]]$

Our analysis can therefore be supported if we can show that participle fronting in Bulgarian exhibits similar behavior to the locative inversion construction. Here we mention one such similarity (cf. also footnote 4). In Section 1, we noted that the participle cannot be preceded by the subject of the clause, which motivated our claim that the fronted participle is situated in SpecIP. Actually, the generalization can be made somewhat stronger since the participle cannot be preceded by any material at all; it must be the left-most constituent in the clause (apart from the complementizer in embedded clauses). This can be illustrated by example (19a) from Caink (1999). In this respect, participle fronting behaves similar to Locative Inversion, which has been claimed to also block *wh*-movement. This is illustrated by (19b), taken from Den Dikken and Næss (1993).

(19)   a.   *Kŭde pročel      e          knigata
                where read.MASC.SG be.PRES.3SG book-the
                'Where has he read the book?'
         b.   *We all witnessed [$_{CP}$ how down the hill came rolling a huge baby carriage]

## 6.   Topics for future research

Participle fronting does not only occur in Bulgarian but also in the other Slavic languages, sometimes with other properties. This can be readily illustrated for Serbo-Croatian. Example (20), taken from Wilder and Ćavar (1994), shows that participle fronting is possible in main clauses.

(20)   Čitao je      Ivan knjigu
         read   be.3SG Ivan book
         'Ivan read the/a book.'

In embedded clauses, on the other hand, participle fronting depends on the nature of the auxiliary. It is excluded when it is a clitic, as in Wilder and Ćavar's example in (21a). It is possible, however, when the auxiliary is not a clitic, as in (21b), taken from Embick & Izvorski (1997).

(21)   a.   *Ivan kaže da   čitala je            (Marija) Krležu
                Ivan said  that read be-3SG.PRES Marija   Krleža
                'Ivan said that Marija has read Krleža.'

   b.   On tvrdi   da   istukao bejaše        Jovan Petrovog prijatelja.
           he   claims that beaten  be-3sg.past Jovan Peter's    friend
           'He claims that Jovan had beaten Peter's friend.'

It is clear that we want to maintain that the analysis suggested for Bulgarian also holds for Serbo-Croatian. This means that we have to assume that this restriction on participle fronting in Serbo-Croatian embedded clauses must be the result of some other interfering factor. According to Wilder and Ćavar, the impossibility of (21a) is due to the fact that the auxiliary adjoins to C. A conclusive argument in favor of this assumption is that the clitic auxiliary must be adjacent to the complementizer *da* in embedded clauses; it is not even possible to separate the two by means of a subject (cf. (22b)).

(22)  a.   Marija kaže da   je     Ivan čitao knjigu
           Marija said  that be.3sg Ivan read  book
           'Marija said that Ivan has read a/the book.'
      b.   *Marija kaže da Ivan je čitao knjigu

We could follow this suggestion as far as embedded clauses are concerned (but not for main classes, which receive a similar analysis as Bulgarian) by claiming that this movement of the clitic auxiliary to the complementizer *da* is an alternative way of satisfying the requirement that the auxiliary be morphologically supported; this would also correctly predict that (21a) becomes acceptable if the complementizer *da* is not present (Boban Arsenijević, p.c): participle fronting is then the only way to provide the auxiliary with morphological support.

    The main difference between Bulgarian and Serbo-Croatian would then be that movement of the auxiliary to C cannot take place in the former language. This can of course readily be handled in an optimality-theoretic way by postulating some constraint that favors movement of the clitic auxiliary to C over participle fronting (or vice versa). Here, we will not attempt to formalize such a solution, but confine ourselves to pointing out the logic of the argument. We hope and expect that other differences between the Slavic languages with respect to participle fronting can be approached by applying the same logic.

## 7.    Conclusion

This article has provided an XP-analysis for participle fronting in Bulgarian. Although such an analysis has been explicitly discarded in the past because the fronted participle never pied pipes other VP-internal material, we have argued that the XP-moment approach is supported by the fact that it explains that the subject cannot occur in SpecIP when the participle in fronted.

## Notes

**1.** Actually, the participle cannot be preceded by any material at all; we return to this fact in Section 5. Note that this fact cannot be attributed to rules of clitic placement, since clitics do not have to occur in second position in Bulgarian.

**2.** Agreement between the subject and the finite verb involves person and number features, while that between the subject and the participle involves number and gender features. This is simply a matter of overt manifestation: we assume that the complete feature bundle (person, gender, and number) is involved in checking.

**3.** An alternative possibility would be to focus on the landing site of the moved phrase. Participle fronting in Bulgarian is A-movement, and hence could be assumed to not leave a copy; VP-Topic-alization in Dutch is A′-movement and hence leaves a copy. Given the fact that A-movement does not bleed binding (Hoekstra 1991), we have some doubt about such an approach.

**4.** Lambova (2002), who assumes a head-movement analysis, claims that the participle targets different positions in the two constructions. Notably, when the participle is followed by a marked pitch fall, it is moved into the head of a focus projection which she calls "delta". It might indeed be the case that the participle ends up in some higher position in the structure when it is emphatically focused. The main point is, however, that this position can only be reached via SpecIP. In this respect participle fronting in Bulgarian is similar to Locative Inversion: cf. Den Dikken and Næss (1993) who argue that, at least in Norwegian, Locative Inversion is obligatorily followed by A′-movement of the fronted predicate.

**5.** Broekhuis and Dekkers (2000) claim that the requirement that the focus feature be checked is not a constraint but part of the definition of the candidate set. The effect of this would be that the b-examples in the second tableau of each pair could not be generated. This would, of course, also result in the selection of the a-example as the optimal candidate.

**6.** One difference is worthwhile to note, namely that the complement of the preposition can be Pied Piped under Locative Inversion, whereas the complement of the participle cannot be Pied Piped under participle fronting. The reason for this difference is that in the latter case, case assignment to the complement is dependent on the light verb, whereas in the former case it is assigned internal to the PP, possibly by some "light" *p*.

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