

LF complex predicate formation: the case of participle fronting in Serbo-Croatian

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1. Abstract

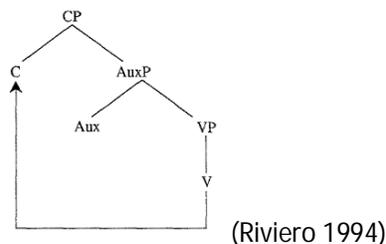
- Topic: the article deals with participle fronting in Serbo-Croatian (SC) as an instance of complex head formation
- Proposal: Participle fronting involves formation of a complex head created by the participle and the auxiliary/auxiliaries. The participle is merged in a functional projection above the auxiliary, and the formation of the complex predicate allows for their joint assignment of thematic roles in LF.
- General implications: thematic roles do not have to be assigned in narrow syntax, this can be done at LF, thus arguments of the verb do not have to be merged strictly with the lexical verb

2. Introduction – long head movement and Serbo-Croatian

Long head movement (Lema and Rivero 1990, Rivero 1991, Roberts 1993) – movement in which the participle moves across the Aux, skipping an intermediate head position, as shown in (1). In SC, participle fronting has been proposed to involve long-head movement. Thus, the sentence in one can roughly be assigned the structure in (2).

(1) *Pojeo je celu tortu.*
 eat.PRT.M.SG is whole cake
 'He ate the whole cake.'

(2)



Serbo-Croatian basics:

- Basic word order: SVO
- It has scrambling/relatively free word order
- Pro-drop language (1)
- Clitics are in second position within their intonation phrase (**Pojeo celu je tortu.*)
- Past tense is built with the verb “be” regardless of whether the verb is strong or weak
- A proposal of the sentence structure:

(3)

$[_{AgrSP}$ Subject aux-clitic $[_{TP}$ sent. adverb $[_{TP}$ (finite main verb) $[_{T}$ $[_{VP/AgrOP}$ manner adverb $[_{VP/AgrOP}$ (finite main verb)]]]]]] (Bošković 2001)

3. Previous accounts

Hypothesis: participle fronting in SC is not long head movement, but remnant VP-topicalisation.

- (4) [_{VP} *Pojeo sve gljive*] *Ivan jeste.*
 eat.PRT.M.SG all mushrooms Ivan is
 'Ivan did eat all the mushrooms.'

Evidence against:

- i. While it is possible to topicalise the participle when the Aux is in its clitic form (5a), it is not possible to topicalise it across an Aux in its full form (5b). In this case, it is necessary to topicalise the whole VP (5c).

- (5) a. *Poljubili su Mariju.*
 kiss.PRT.M.PL are Marija
 'They kissed Marija.'
 b. **Poljubili jesu Mariju.*
 kiss.PRT.M.PL are Marija
 c. *Poljubili Mariju jesu.*
 kiss.PRT.M.PL Marija are
 'They did kiss Maria.'

It should be mentioned at this point that the examples given in (5) do not really argue against the remnant VP-topicalisation analysis. In (5b-c), the full form of the auxiliary does not really block participle fronting, it just has to be sentence final for independent reasons. Moreover, VP-topicalisation is possible when the auxiliary is in its perfect form, as illustrated in the following sentences.

- (6) a. [_{VP} *Pojeo bješe sve gljive.*]
 eat.PRT.M.SG be.PST.3.SG all mushrooms
 'He had eaten all mushrooms.'
 b. [_{VP} *Pojeo Ivan*] *bješe sve gljive.*
 eat.PRT.3.SG Ivan be.PST.3.SG all mushrooms
 'Ivan had eaten all mushrooms.'

- ii. Participle fronting in SC is clause-bound

- (7) **Video Mariju je rekao da nije.*
 see.PRT.M.SG Marija is say.PRT.M.SG that not.is
 'He said he hadn't seen Marija.'

- iii. Clitic forms of auxiliaries do not license gaps (they cannot stand on their own if they are followed by a gap created after some material has been fronted). In (8c), the clitic form of the Aux cannot stand alone, as opposed to (8d).

- (8) a. She won't go to Glasgow, but he will / *he'll [e]
 b. I know he is not in that movie, but I don't know who is / *who's [e]
 c. *(Marko nije pojeo meso, ali) Pojeo sve gljive je [e].
 Marko not.is eat.PRT.M.SG meat but eat.PRT.M.SG all mushrooms is
 '(Marko hasn't eaten his meat, but) He has eaten all the mushrooms.'
 d. Pojeo je.
 eat.PRT.M.SG is
 'He has eaten something.'
- iv. Some heads (but also some XP's) block participle fronting (particle *li*, negation, overt non-focused subjects)

- (9) a. *Pojeo li je gljive.
 eat.PRT.M.SG Q is mushrooms
 'Has he eaten mushrooms?'
 b. *Pojeo nije gljive.
 eat.PRT.M.SG not.is mushrooms
 'He has not eaten mushrooms.'
 c. *Pojeo je Ivan sve gljive.
 eat.PRT.M.SG is Ivan all mushrooms
 'Ivan has eaten mushrooms.'
 d. Pojeo gljive nije.
 eat.PRT.M.SG mushrooms not.is
 'He did not eat mushrooms.'

→Participle fronting is head movement, not XP-movement

4. The nature of participle fronting: substitution or adjunction?

4.1. Substitution (long-head movement)

Hypothesis: participle movement = long head movement. The participle moves from V to C, skipping the Aux, which then cliticizes on the participle.

Evidence for: In SC, participle fronting does not happen in embedded contexts, and is blocked by particle *li*, taken to be in C (9a).

Evidence against:

- i. Head Movement Constraint (a head cannot skip another head while moving)
- ii. Relativised minimality requirement (elements that move do not skip elements of the same type)
 - this would mean that if participle indeed moves to C to satisfy some kind of feature, it would have to be a feature that cannot be satisfied by movement of the auxiliary
 - the fact that both Aux-Prt and Prt-Aux orders are possible shows that movement of the participle to C is not obligatory
- iii. Movement only happens if it has to prevent a derivation/representation from crashing, or to get a different interpretation
 - in SC, the fronting of the participle does not give different interpretation (only the movement of the whole VP gives different interpretation, but then we speak of topicalisation, not head-movement)
 - movement happens so that the clitic is not in the first position, but then syntax works so as to satisfy a phonological requirement, which is not very likely

4.2. V-to-V adjunction

Hypothesis: Participle adjoins to the auxiliary, which results in a verb cluster. (Bošković 1995, 2001, Wilder and Čavar 1994)

- (10) a. [_{AuxP} Aux [_{VP} Pple]] (underlying structure)
 b. [_{AuxP} [_{Aux} Pple_i [_{Aux} Aux]] [_{VP} t_i]] (structure after V-to-V raising)

It is independently attested in other languages. Dutch illustrates it as in (11). Both verbs belong to the same clause, the whole cluster behaves like one constituent:

- (11) a. *dat zij [Karel gezien] heeft* (underlying)
 that she Karel seen has
dat zij Karel [heeft gezien] / [gezien heeft] (surface)
 that she Karel has seen / seen has
 b. *dat zij [[Karel dansen] gezien] heeft* (underlying)
 that she Karel dance seen has
dat zij Karel [heeft zien dansen] (surface)
 that she Karel has see dance

Bošković's analysis of **participle raising as auxiliary adjunction in SC faces some difficulties.**

- i. Elements blocking Prt-Aux clustering

In general, all head-to-head adjunction is subject to a strict linear adjacency condition. Van Riemsdijk (1998):

- (12) The Head Adjacency Principle (HAP)
 A transformational process that affects two head positions must be either Head Adjunction or Head Substitution.
 a. *Head Adjunction:* Two phonetically identified heads are adjoined, yielding an adjunction structure, in which case the two heads must be strictly linearly adjacent at the moment of application of the rule.
 b. *Head Substitution:* A head is moved into a head position which is phonetically empty but which may contain ϕ -features, thereby unifying the two morphosyntactic feature matrices.

In SC, elements above the Aux block participle fronting, contrary to the expectation that elements that occur between V and Aux should do that (9a-b). Elements lower in the structure do not seem to block participle fronting. Even phrasal elements that appear in a position higher than the base position of the auxiliary block participle fronting (9c).

As the following example illustrates, in the sentence with the fronted participle, the manner adverb does not block fronting:

- (13) a. *Ivan je mudro prodao kuću.*
 Ivan is wisely sold house
 'Ivan sold his house in a wise manner.' (adverb is VP-adjoined, auxiliary is in T/AgrS)
 'It was wise of Ivan to sell his house.' (adverb is TP-adjoined, auxiliary must be in AgrS)
- b. *Prodao je mudro kuću.*
 sell.PRT.3.SG is wisely house
 'He sold his house in a wise manner.' (adverb is VP-adjoined)
 *'It was wise of him to sell his house.' (adverb is TP-adjoined)

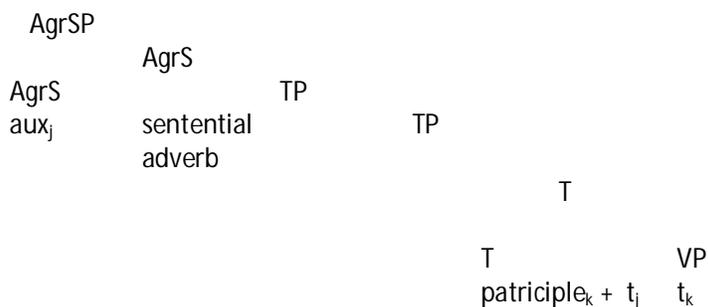
Additionally, subjects cannot intervene between the participle and the auxiliary when the participle is fronted.

- (14) a. **Pojeo je Ivan halapljivo gljive.*
 eaten is Ivan greedily mushrooms
- b. *Pojeo je gljive IVAN.*
 eaten is mushrooms Ivan
 'It is Ivan who ate the mushrooms.'

→ Whatever is above the base position of the auxiliary, head or phrase, complement or adjunct, blocks the fronting of the participle.

One possible account (Bošković 2001): after forming the cluster in T, if there is a need to move, only auxiliary moves to a position higher than T, due to economy conditions (the least possible amount should be moved). Thus, first the cluster is formed, and then the auxiliary excorporates out of the cluster again.

(15)



The authors of the article never prove convincingly that Bošković's argument in this case is wrong. (Moreover, the structure they propose will leave this issue open to discussion, as we will see.)

Still, a more important observation is that elements merged below T do not block participle movement (as we will see in (29), manner adverbs are base-generated between Aux and Prt, and do not block clustering). In Germanic languages it has been shown that anything between the base positions of the auxiliary and the participle blocks clustering (see Evers 1975, Reuland 1990, Van Riemsdijk 1998, Ackema & Neeleman 2002).

6.3. No participial trace

The auxiliary can stand alone in its clitic form before a gap – the fact that participle fronting is possible when the auxiliary is a clitic would then seem to indicate that in this construction the participle is not merged in a position following the auxiliary, leaving a trace there when it fronts (c.f. (8c-d)).

6.4. Trigger for movement

Task: How do modifying adverbials affect verb clustering in the following example?

- (25) a. *Prodao je bio pametno kuću.*
 sold is been smartly house
 'He sold his house smartly.'
- b. **Prodao je pametno bio kuću.*
 sold is smartly been house
- c. **Prodao pametno bio je kuću.*
 sold smartly been is house
- d. **Prodao bio pametno je kuću.*
 sold been wisely is house

What is different in the sentences in (26) with respect to verb clustering and the position of modifiers?

- (26) a. *Ivan je bio brzo prodao kuću.*
 Ivan is been quickly sold house
 'Ivan had quickly sold the house.'
- b. *Ivan je loše bio popravio radio.*
 Ivan is badly been repaired radio
 'Ivan had repaired the radio badly.'

→ If present, participle fronting occurs to satisfy the Θ -criterion. Otherwise, it is not required.

Note: Why is the structure in (27) a potential problem for this analysis?

- (27) *Izašao je.*
 gone.out is
 'He's gone out.'

7. Controversial issues

i. Elements lower than T

Why are the following pieces of data problematic for the proposal outlined above?

- (28) a. *Pojeo je sve gljive.*
 eaten is all mushrooms
 'He has eaten all the mushrooms.'
- b. **Pojeo je Ivan sve gljive.*
 eaten is Ivan all mushrooms
 'Ivan has eaten all the mushrooms.'
- c. *Pojeo je gljive IVAN.*
 eaten is mushrooms Ivan
 'It was Ivan who ate all the mushrooms.'
- (29) a. *Ivan je pametno prodao kuću.*
 Ivan is smartly sell.PRT.3.SG house
 'Ivan smartly sold the house.'
- b. *Prodao je pametno kuću.*
 sold.PRT.3.SG is smartly house
- c. *Pametno je prodao kuću.*
 smartly is sold.PRT.3.SG house
 'He smartly sold the house.'

ii. Focus

The following data pose a problem for the architecture of the system. It is assumed that in the cases without participle fronting the verb is merged regularly in the VP, and the derivation proceeds in a standard way. If fronting is present, it is assumed that VP is not necessary. Assuming that in the following two examples there is no VP, and that the sentence-final items are focused, where do you think their base position can be?

- (30) a. *Pojeo je gljive IVAN.*
 eaten is mushrooms Ivan
 'It was Ivan who ate all the mushrooms.'
- b. *Pojeo gljive nije.*
 eaten mushrooms not.is
 'He did not eat mushrooms.'
- c. *Poljubio Mariju jeste.*
 kiss Marija is
 'He did kiss Marija.'

8. Conclusion

- Participle fronting in SC follows two patterns:
 - Either the participle alone is fronted, in which case it is followed by the auxiliary clitic
 - The whole VP is topicalised, in which case the auxiliary shows up in its full form, focused
- In the cases where the participle is fronted, it forms a cluster with the auxiliary clitic
- The proposal given in the article: participle fronting involves V-to-V adjunction where Prt is merged above Aux, the arguments are merged in the Aux projection, not directly with the participle, but what allows for this is the assignment of Θ -roles in LF
 - This may account for a wide range of data. Yet, more needs to be said about the positions in which subjects, manner adverbs and focused items are merged, as well as about the motivation for such a merging operation.

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