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RAISING AS A FREE SYNTACTIC OPERATION: EVIDENCE FROM SERBIAN**

This paper examines the syntactic properties of the Serbian modal verb *trebati* 'need', which appears in the environment 'NP – *trebati* 'need' – finite *da*-clause'. I show that *trebati* is a raising verb and that the preverbal NP is a (raised) subject. *Trebati* (φ-)agrees with the preverbal NP only optionally, which is surprising since other Serbian verbs agree with their subjects obligatorily. Furthermore, the subject is free to remain in the embedded clause, suggesting that the raising operation is not triggered by the need to satisfy unvalued features on matrix T (contra e.g., Chomsky 1981, 2008). I instead propose that A-movement (of this kind) is 'free'; more precisely, it is fully optional, it can occur at any stage of the derivation (or not), and it is constrained only by the requirement that the output be well-formed. I show that this analysis accounts for the full range of data with *trebati*, but that it can also be applied to English-style raising constructions.

*Keywords***:** raising-to-subject, free movement, φ-agreement, timing analysis, Serbian

1. INTRODUCTION

In this paper, I examine the syntactic properties of the Serbian modal verb *trebati* 'need', which can appear in two configurations that look quite similar on the surface (1)-(2).[1] In (1a) and (2a), *trebati* 'need' is in the present tense, while in (1b) and

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[1] I gloss *trebati* as 'need' throughout for consistency, although its meaning is slightly weaker. That is, *trebati* is likely not a true necessity modal, and as such does not involve universal quantification over possible worlds. Its meaning lies somewhere between the English modals *need* and *should*. I leave the issue of modal force aside in this paper; see Lassiter 2011, 2020 for a discussion of similar cases. In terms of its modal flavor, both

(2b) it is in the past tense. The complement *da*-clause in both (1) and (2) is finite, and the only obvious difference between (1) and (2) is the presence versus absence of subject agreement morphology on the modal *trebati* (and on the auxiliary in the past tense). I will show that both (1) and (2) involve subject-to-subject raising, and argue that the lack of agreement in (2) arises because the raising of the subject NP occurs too late for the matrix agreement probe to 'see' it. Ultimately, I will conclude that accounting for the full range of data with *trebati* necessitates a theory of raising-to-subject on which (this type of) A-movement is free (in a way that is to be specified).

(1) a. Marija i ja treba-mo da ide-mo na pijacu.
Mary and I need-PRES.1PL DA go- PRES.1PL on market

b. Marija i ja smo treba-l-e da idemo na pijacu.
Mary and I AUX.1PL need-LPTCP-FEM.PL DA go- PRES.1PL on market

(2) a. Marija i ja treba-Ø da ide-mo na pijacu.
Mary and I need- PRES.3SG DA go- PRES.1PL on market

b. Marija i ja je treba-l-o da ide-mo na pijacu.
Mary and I AUX.3SG need-LPTCP-NEUT.SG DA go-PRES.1PL on market
'Mary and I need/needed to go to the market.'

I should mention at the outset that I will continue to refer to the language in which both agreeing and non-agreeing *trebati* are used as Serbian, though a more precise characterization would be *in certain dialects of Bosnian/Croatian/Serbian* (BCS). For example, an informal survey revealed that speakers from central Bosnia (Zenica) may prefer the option in (1), whereas speakers from Sarajevo use both (1) and (2) equally. The situation in Serbia is comparable, with speakers of some dialects preferring one option over the other, and others using them interchangeably. Notably, speakers from Croatia are not likely to use *da*-complements with *trebati*, instead opting for infinitival complements (3). Infinitival complements are available in all varieties of BCS and the agreement on *trebati* is then obligatory.

(3) Marija i ja treba*(-mo) ići na pijacu.
Mary and I need-1PL go.INF on market
'Mary and I need to go to the market.'

agreeing and non-agreeing *trebati* can be used epistemically and deontically. In this paper I focus on the deontic flavor of modality with the aim of making the two structures as parallel as possible in all contexts.

The paper is organized as follows. Section 2 offers a general overview of agreement in Serbian, which will be useful in understanding how the pattern in (2) might arise. In section 3, I analyze various properties of *trebati* 'need'; I show that both agreeing and non-agreeing *trebati* 'need' take larger-than-*v*P complements (section 3.1), and that *trebati* is a raising-to-subject verb with raising out of a finite clause (3.2). In section 3.3, I consider and reject the possibility that the sentence-initial NP in (2) is in an A'-position (which could explain why it does not trigger agreement). Instead, I conclude that the sentence-initial NPs in both (1) and (2) are in an A-position. Section 4 offers two analyses in an attempt to account for the optionality of agreement with *trebati*. The first is a timing analysis that relies on the presence of two features ([N*] and [uφ]) on T, and capitalizes on the order in which these features are satisfied. I will reject this approach due to its inability to account for a portion of the relevant data. The second analysis, which I ultimately adopt, allows A-movement to occur freely at any step of the syntactic derivation. This view of raising diverges from mainstream generative analyses of the phenomenon, on which the movement operation is triggered by the need to satisfy unvalued features (Chomsky 1981, 2008). In section 5, I look at raising beyond Serbian and argue that the analysis proposed in this paper can account for English-style raising-to-subject constructions equally well.

2. AGREEMENT FACTS IN SERBIAN

Agreement in Serbian is generally not optional. Transitive predicates always agree with their subjects and never with their objects (4), while intransitive predicates agree with their sole argument (5); see Aljović 2000 for unaccusativity diagnostics in Serbian. As seen in (4), finite verbs agree in person and number, and participles agree in gender and number (5). This makes the pattern in (1)/(2) exceptional, since *trebati* 'need' can either agree with (what I will show to be) the subject, as usual, or not.

(4) Student-**i** vid-**e** tabl-u.
student-NOM.PL see-PRES.3PL board-ACC
'The students can see the blackboard.'

(5) a. Student-**i** **su** stig-l-**i**. (*unaccusative*)
student-NOM.PL AUX.3PL arrive-PTCP-MASC.PL
'The students have arrived.'
b. Student-**i** **su** trča-l-**i**. (*unergative*)
student-NOM.PL AUX.3PL run-PTCP-MASC.PL
'The students have run.'

Importantly for our purposes, zero-place predicates like *sevati* 'flash' in (6) do not have an argument to agree with; this lack of agreement is spelled-out as 3rd person singular (i.e., zero suffix) on finite verbs (6a), and as neuter singular on participles (6b).

(6) a. Seva-**∅**.
flash-PRES.3SG
'There is lightning.'
b. Seva-**l-o** je.
flash-PTCP-NEUT.SG AUX.3SG
'There was lightning.'

Note that this is exactly the same outcome we see with *trebati* 'need' in (2). In section 4, I will argue that the agreement pattern in (2) arises for the same reason as in (6), namely because *trebati* 'need' has failed to agree with a nominal argument (which has φ-features to transmit).

3. SOME FEATURES OF *TREBATI* 'NEED'

Let us now examine the syntactic environment of *trebati* 'need'. I will show that the 'clausal' complement of *trebati* is larger than *v*P (section 3.1), that *trebati* is a raising verb (section 3.2), and that even the non-agreeing form of *trebati* can have a subject in matrix spec TP (section 3.3).

3.1. The complement of trebati 'need' is larger than vP

I will adopt a relatively novel approach to the traditional concept of restructuring (Rizzi 1982, a.m.o.). Wurmbrand (2014, 2015) argues that clauses can come in different sizes, and that the binary mono- vs. bi-clausal distinction is not sufficient. Instead, 'clausal' complements can be (at least) *v*Ps, TPs and CPs. In this section, I show that the complement of *trebati* 'need' is larger than *v*P (while in section 4.2, I specifically argue that it is a TP). Wurmbrand shows that *v*P complements allow long object movement, as illustrated in the Spanish sentence in (7a); the restructuring verb is passivized, and the object of the embedded clause becomes the subject of the matrix. This is impossible with *trebati* (7b). I

should note two things here. First, the *n*-participle which forms part of the passive in (7b) cannot be derived from *trebati* at all (and this is true of all unaccusative verbs in Serbian). Second, long object movement is never possible in Serbian with the type of passive given in (7b). For some speakers, long object movement is, however, possible with so-called *se*-passives, as shown in (7c). However, even in this case it is only possible with embedded infinitives (likely *v*Ps), and not with embedded finite *da*-clauses. Unsurprisingly, then, the same holds for *trebati*: long object movement is impossible with the *se*-passive if the embedded complement is finite (7d).

(7) a. Estas paredes están siendo terminadas de pintar por los obreros.
these walls are being finished to paint by the workers
'They (the workers) were finishing painting these walls.' (Wurmbrand 2014:276)

b. *Ovi zadaci su treba-n-i da uradi-mo
these tasks AUX.3PL need-PASS.PTCP-MASC.PL DA do-1PL
(od strane Marije i mene).
by side Mary and me
'These tasks should have been done by Mary and me.'

c. Ovi obrasci su se zaboravili potpisa-ti / *da potpiš-u.
these forms AUX-3PL SE forgot sign-INF DA sign-3PL
'It was forgotten to sign these forms.'

d. Ovi obrasci su se trebali potpisa-ti / *da potpiš-u.
these forms AUX-3PL SE need sign-INF DA sign-3PL
'It was needed to sign these forms.'

Another hallmark of embedded *v*P complements is the possibility of clitic climbing out of them and into the matrix clause. In the Polish sentence (8a), the clitic-complement of the embedded verb *przeczytać* 'read' precedes the matrix verb. As shown in (8b-c), clitic climbing is very marginal when *trebati* takes a finite DA-complement; (8b) illustrates this for the agreeing form of *trebati*, and (8c) for the non-agreeing form. Now, the embedded clauses in both (8b) and (8c) are finite, while the Polish embedded verb in (8a) is in the infinitive form. Recall that, like the Polish verb *zdecydować* 'decide', Serbian *trebati* 'need' can additionally take an infinitival complement, and clitic climbing is then possible (8c). It seems that there is a structural difference between the finite DA-clause and the non-finite clause, which allows for clitic climbing only in the latter case. In other words, the infinitival clause is a *v*P, and the finite *da*-clause is larger.

(8) a. Marek **ją** zdecydował się przeczytać tCL. (Wurmbrand 2014:276)
Mark it decided REFL read.INF tCL
'Mark decided to read it.'

b. ??Marija i Jovana su **ga** treba-l-e da kup-e tCL.
Marija and Jovana AUX.3PL it need-PTCP-FEM.PL DA buy-3PL tCL
'Marija and Jovana should have bought it.'

c. ??Marija i Jovana **ga** je treba-l-o da kup-e tCL
Marija and Jovana it AUX.3SG need-PTCP-NEUT.PL DA buy-3PL tCL
'Marija and Jovana should have bought it.'

d. Marija i Jovana su **ga** treba-l-e kupi-ti tCL.
Marija and Jovana AUX.3PL it need-PTCP-FEM.PL buy-INF tCL
'Marija and Jovana should have bought it.'

Finally, I show evidence from the licensing of NPIs that the complement of (both agreeing and non-agreeing) *trebati* 'need' is large enough to not be transparent to matrix negation. There are two types of NPIs in Serbian, *ni*-NPIs and *i*-NPIs. For verbs that take a CP complement, like *tvrditi* 'claim' (see Todorović & Wurmbrand 2020), *ni*-NPIs are licensed by clause-mate sentential negation (9a-b), whereas *i*-NPIs are only licensed by superordinate negation (9c-d); see also Progovac 1991.[2]

(9) a. **Ni**-ko **ne** voli **ni**-šta.
NEG-who NEG loves NEG-what
'Nobody loves anything.'

b. *Marija **ne** tvrdi da **ni**-ko želi **ni**-šta.
Mary NEG claims DA NEG-who wants NEG-what
intended: 'Mary is not claiming that anybody wants anything.'

c. ***I**-ko **ne** voli **i**-šta.
i-who NEG loves i-what
intended: 'Nobody loves anything.'

d. Marija **ne** tvrdi da **i**-ko želi **i**-šta.
Mary NEG claims DA i-who wants i-what
'Mary is not claiming that anybody wants anything.'

[2] *Wh*- words appear in the gloss because Serbian NPIs are formed by adding a prefix (*ni*- or *i*-) to a form that morphologically corresponds to a *wh*-pronoun (*ko* 'who' and *šta* 'what'). This is a common strategy in Serbian; for example, prefixes are added to *wh*- pronouns to form indefinite universal and existential pronouns (e.g., *ne-ko* 'someone' and *sva-ko* 'everyone').

In (10a), I show a sentence with the verb *želeti* 'want', which according to the diagnostics in Todorović & Wurmbrand 2020, has a *v*P complement. What we can observe is that, in this case of radical restructuring, a *ni*-NPI in the embedded clause can be licensed by matrix negation, unlike in (9d). In the same configuration, the NPI in the embedded complement of *trebati* is an *i*-NPI (10b), suggesting that the complement is larger than *v*P and non-transparent to matrix negation.

(10) a. Marko ne želi da radi ni-šta. (Progovac 1993:117)
Marko NEG wants DA do ni-what
'Marko does not want to do anything.'

b. Marko ne bi treba(-l)-o da radi i-šta.
Marko NEG be.AOR.3SG need-LPTCP.NEUT/MASC.SG DA read i-what
'Marko should be not doing anything.'

3.2. Trebati 'need' is a raising verb

Having established that *trebati* 'need' has a larger-than-*v*P complement, I will now provide evidence that it is a raising verb (and not a control verb). First, the matrix verb *trebati* and the verb in its complement may never have independent subjects, regardless of whether they are co-referential (11a) or not (11b). Now, compare (11a) with (12), which is a good candidate for a control verb. In both sentences, the two subjects are co-referential and the pronoun in the subordinate clause receives contrastive stress. The contrastive stress is likely necessary to license the overt subject in (12) because Serbian is a *pro*-drop language. Yet, (11a) is still bad. I take this contrast to suggest that *želeti* 'want' in (12) is a control verb, while *trebati* 'need' in (11) is a raising verb. Recall also that the DA-clauses in (11) are finite, so there is no a priori reason to assume that the subject cannot be case-licensed in its base position.[3] The badness of (11) with two overt subjects is explained if the modal *trebati* has no external role to assign, and its subject in well-formed sentences is raised from the subordinate clause.

(11) a. Marija i ja treba(-mo) da (*MI) ostane-mo kod kuće.
Mary and I need-PRES.1PL DA we.NOM.SG stay-PRES.1PL at home
intended: 'Mary and I need us to stay at home.'

[3] In fact, we will see in the following section that the subject *can* be licensed in the embedded clause.

b. Janko treba-Ø da (*Petar) ostane-Ø kod kuće.
Janko need-3SG DA Peter stay-PRES.3SG at home
intended: 'Janko needs Peter to stay at home.' (Arsenijević & Simonović 2014:299)

(12) Marija želi-Ø da (ONA) ostan-e kod kuće.
Mary want-3SG DA she.NOM.SG stay-3SG at home
'Mary wants herself to stay home.'

Furthermore, there is active/passive synonymy in embedded passive contexts with *trebati* (13). This is expected of raising verbs, but not of control verbs (Perlmutter 1970); if *trebati* were a control verb, the base-generated matrix subjects in (13) would be different, so we would expect (13a-b) to exhibit at least some difference in meaning. This is not the case with raising verbs: the argument roles remain on the same nominals in the active/passive pair, namely *Marija* 'Mary' is the agent (of calling), and *Franc* 'Franz' is the theme. The fact that (13a-b) are synonymous provides strong evidence for *trebati* as a raising verb.

(13) a. Marija treba-Ø da pozov-e Franca.
Mary need-3SG DA call-3SG Franz
'Mary needs to call Franz.'

b. Franc treba-Ø da bud-e pozvan od strane Marije.
Franz need-3SG DA aux-3sg called by side Mary
'Franz needed to be called by Mary.'

Wurmbrand (1999) argues that only verbs with underlying external arguments can be passivized. Control verbs, but not raising verbs, have thematic external arguments. Hence, if *trebati* 'need' were a control verb, it would project an external argument and it would be possible to passivize it. However, *trebati* cannot be passivized, which further suggests it is a raising verb. Illustrating with Serbian data in (14a-c), transitives and (impersonal) unergatives can undergo passivization, but unaccusatives cannot. Crucially, *trebati* 'need' in (14d) patterns with unaccusative verbs.

(14) a. Biljk-a je zalive-n-a.
plant-NOM.FEM.SG AUX-3SG water-PASS.PTCP-FEM.SG
'The plant was watered.'

b. Ovde je trča-n-o.
here AUX-3SG run-PASS.PTCP-NEUT.SG
lit. 'It was run here.'

c. *Ovde je dođe-n-o.
here AUX-3SG arrive-PASS.PTCP-NEUT.SG
intended: 'It was arrived here.'

d. *Treba-n-o je da se zalij-u biljk-e.

need-PASS.PTCP-NEUT.SG AUX-3SG DA SE water-3PL plant-FEM.PL
intended: 'It was needed to water the plants.'

Finally, evidence from idioms points to the same conclusion. It is well known that idioms can survive under raising, but not under control (see e.g., Davies and Dubinsky 2004). The explanation that is given for this contrast is that the idiom is base generated as a syntactic constituent in the raising structure, but not in the control structure. For the Serbian idiom in (15a), we observe that the idiomatic meaning is preserved with *trebati* 'need' (15b), but not with *želeti* 'want' (15c), further showing that *trebati* is a raising verb.

(15) a. I vrapci na grani to već cvrkuć-u.
even sparrows on branch that already chirp-3PL
'Everyone knows that', *lit.* 'Even sparrows on the branch are chirping that already.'
b. I vrapci na grani **treba(-ju)** da to već cvrkuć-u.
even sparrows on branch need-3PL DA that already chirp-3PL
'Everyone should know that.'
c. I vrapci na grani **žel-e** da to već cvrkuć-u.
even sparrows on branch want-3PL DA that already chirp-3PL
'Even sparrows on the branch want to chirp that already.' *no idiomatic meaning*

3.3. Sentence-initial NPs with impersonal trebati 'need' are raised subjects

Recall the examples from (1) and (2), repeated here as (16) and (17). *Trebati* 'need' is agreeing with the preverbal NP in (16), but not in (17). This contrast gives rise to one of the most puzzling questions about *trebati*: Why can *trebati* appear in the non-agreeing (default) form, particularly when subject-verb agreement seems to be obligatory in Serbian?

(16) a. Marija i ja treba-mo da ide-mo na pijacu.
Mary and I need-1PL DA go-1PL on market
b. Marija i ja smo treba-l-e da ide-mo na pijacu.
Mary and I AUX.1PL need-LPTCP-FEM.PL DA go-1PL on market
(17) a. Marija i ja treba-Ø da ide-mo na pijacu.
Mary and I need-3SG DA go-1PL on market
b. Marija i ja je treba-l-o da ide-mo na pijacu.
Mary and I AUX.3SG need-LPTCP-NEUT.SG DA go-1PL on market
'Mary and I need/needed to go to the market.'

Perhaps the most obvious hypothesis is that the sentence-initial NPs in (17) are A'-moving, possibly to a topic position; A' movement does not trigger φ-agreement in Serbian. However, the NP in this position does not show any of the usual properties of topics. First, topics need to be under the scope of existential quantification (Reinhart 1976, a.o); universally and negatively quantified NPs are topic resistant, but they occur freely with *trebati* (18). Topicalization is also impossible in a new information context; sentence-initial NPs with *trebati* are fine in this same context (19).[4]

(18) a. Svi treba(-ju) da prim-e vakcinu.
Everyone need-1PL DA get-1PL vaccine
'Everyone needs to get the vaccine.'

b. Ni-ko ne treba(-∅) da primi-∅ vakcinu.
NEG-who NEG need-3SG DA get-3SG vaccine
'No one should get the vaccine.'

(19) Context: "What's happening?"

a. #[Marija i Jovana]$_i$ *pro* misli-m da t_i id-u na pijacu.
Marija and Jovana pro think-1SG DA go-3PL on market
'Marija and Jovana, I think they're going to the market.'

b. [Marija i Jovana]$_i$ treba-(ju) da t_i id-u na pijacu.
Marija and Jovana need-1PL DA go-3PL on market
'Marija and Jovana need to go to the market.'

However, the above examples only show that the sentence-initial NP with impersonal *trebati* is not a topic, but not necessarily that it is not in some other A'-position. Nonetheless, there are other diagnostics that indicate precisely that the NPs in question are in an A position, despite the fact that they do not trigger agreement on the verb.

Scope facts indicate that the sentence-initial NP with *trebati* moves to an A-position. Namely, the sentence in (20a) has two readings, resulting from the interaction of the negation and the universal quantifier. The inverse scope reading, where the negation scopes over the quantifier, may result from the quantifier's position in the embedded clause before raising. Additionally, the quantifier may scope over the negation, suggesting that the NP *svi vakcinisani* 'all vaccinated

[4] There also seem to exist some prosodic differences between (19a) and (19b).

(people)' has moved to an A-position above the matrix negation. I should mention here that, while it is not (cross-linguistically) unheard of that A'-movement can change scope relations, A-movement regularly does so. While it is true that surface position can in general affect scope relations, it is much more difficult to get the universal quantifier to scope over the negation in the long-distance scrambling case I give in (20b), than in (20a). I take the contrast in (20a-b) to suggest that the preverbal NP with *trebati* is raising to an A-position.

(20) a. [Svi vakcinisan-i]$_i$ ne treba(-ju) da t_i se osećа-ju sigurno.
all vaccinated-PL NEG need-3PL DA SE feel-3PL safe
'It's not the case that all vaccinated people should feel safe.' NEG > ALL
'For all vaccinated people, it's the case that they shouldn't feel safe.' ALL > NEG

b. [Svi vakcinisan-i]$_i$ *pro* ni-je mislila da su sigurni t_i.
all vaccinated-PL pro NEG-AUX.3SG thought DA AUX safe
'It's not the case s/he thought that all vaccinated people are safe.' NEG > ALL
??'For all vaccinated people, it's the case s/he thought they weren't safe.' ??ALL > NEG

Finally, it is worth examining some data from relativization. I give an example of an ordinary Serbian relative clause in (21a). In Serbian relative clauses, it is generally impossible to place a nominative NP between the relative pronoun and the subject, *even if the subject is phonologically null* (21b). Additionally, (21c) shows that the sentence is fine if *Marija i Jovana* stays in situ; the issue in (21b) is then clearly the displacement of *Marija i Jovana*. Crucially for our purposes, the NP that precedes *trebati* is still possible (21d) immediately following the relative pronoun. Regardless of the exact reason for the badness of (21b), the fact is that the relative clause with *trebati* in (21d) patterns with (21c) where no nominative phrases have been displaced, and not with (21b) where a nominative NP is placed between a relative pronoun and a (phonologically null) subject. This state of affairs argues against an analysis of (21d) where *Marija i Jovana* is fronting across an expletive *pro*, as in (21b), and for an analysis where *Marija i Jovana* is moving to the subject position in the relative clause.

(21) a. [Čovek [kog Marija vidi]] je visok.
man who.ACC Mary sees is tall
'The man who Mary sees is tall.'

b. *[Čovek [kog [Marija i Jovana]$_i$ Marko/***pro** tvrdi-Ø
man who.ACC Mary.NOM and Jovana.NOM Marko.NOM claim-3SG
da t_i vid-e]] je visok
DA see-3PL is tall

intended: 'The man who Mary and Jovana Marko claims see is tall.'

c. [Čovek [kog Marko/*pro* tvrdi-Ø da Marija i Jovana
man who.ACC Marko.NOM claim-3SG DA Mary and Jovana
vid-e]] je visok.
see-3PL is tall
'The man who Marko claims Mary and Jovana see is tall.'

d. [Čovek [kog [Marija i Jovana]$_i$ treba(-ju) da t$_i$ vid-e je visok.
man who.ACC Mary and Jovana need-3PL DA see-3PL is tall
'The man who Mary and Jovana need to see is tall.'

In this section, I have shown that the verb *trebati* 'need' takes larger-than-*v*P complements, and that the subject of the embedded clause moves to the subject position of *trebati*. Furthermore, *trebati* can, but need not, agree with the raised subject. In what follows, I attempt to account for the optionality of agreement with *trebati*. In doing so, I will show that the complement of *trebati* is a TP (not a CP), as well as address the larger question that arises: What is the motivation for raising?

4. THE ANALYSIS

In this section, I consider two possible analyses for the optionality of agreement with *trebati* 'need'. The first is a timing analysis that relies on the presence of two features ([N*] and [*u*φ]) on T, and capitalizes on the order in which these features are satisfied. I will reject this approach due to its inability to account for all of the relevant data. The second analysis, which I will ultimately adopt, allows A-movement to occur freely at any step of the syntactic derivation.

4.1. A timing analysis

This analysis draws inspiration from Müller (2009), who attempts to account for the differences between accusative and (morphologically) ergative alignments by invoking an indeterminacy in the order of Merge and Agree on the *v*P cycle. Applying this general idea to *trebati* 'need', suppose that the T node of the *trebati* matrix clause is merged into the structure with two features: a strong N feature [N*] and an unvalued φ-feature bundle [*u*φ]. A legitimate question on any approach that does not have an architecture where one head necessarily corresponds to only one feature (e.g., Nanosyntax, see Starke 2009) is which of the two operations applies first—movement of NP to satisfy [N*], or probing for agreement to satisfy [*u*φ].

We may envision the details of this kind of an analysis in more than one way. For example, assume that probing for agreement is only downward, and based on c-command (crucially, not m-command). Then, if the [*u*φ] feature is satisfied before the [N*] feature, *trebati* 'need' will bear the φ-features of the subject (22a). This is because the subject is in the c-command domain of the agreement probe before raising. If, on the other hand, the [N*] feature is satisfied first, the subject NP will no longer be in the c-command domain of the agreement probe. Then, agreement probe will fail to find an appropriate target, and it will be spelled-out with default 3SG agreement (22b).

(22) a. [Marija and Jovana]$_i$ T⟨[*u*φ], [N*]⟩ need-3PL….da t$_i$ …
b. [Marija i Jovana]$_i$ T ⟨[N*], [*u*φ]⟩ need-3SG….da t$_i$ …

However, this analysis leads to several undesirable consequences. For one, we would need to assume that this type of T, which is underspecified for the order of operations that apply, is unique to *trebati* 'need'. For monoclausal structures, we are forced to say that T is always specified for agreement probing to apply first (⟨[*u*φ], [N*]⟩), otherwise we would expect to see non-agreeing verbs all over the place, contrary to fact. While this is not a knock-down argument against this type of analysis, it would be desirable to avoid postulating a distinct T to account for the behavior of one Serbian verb. More importantly, this story cannot account for a piece of data that I have not discussed so far: The subject can stay in its base-generated position if the verb is in the non-agreeing form (23a), but not if it is in the agreeing form (23b).[5] Since this analysis depends on the presence of a strong nominal feature on T, whose purpose is to raise the subject into the matrix clause, it is not clear how it could account for (23a). Note that sentences like (23a) do not lend themselves to analyses on which the subject raises because it needs to satisfy its own (Case) features (Chomsky 2001, 2008)—the subject can clearly be licensed in situ.[6]

[5] In section 4.2, I show that the subject in (23a) is indeed below T; the subject can also move to spec TP of the embedded clause, in which case agreement with the matrix verb is possible. Neither of these options is predicted on an analysis that relies on the presence of strong (movement-triggering) features on matrix T.

[6] The contrast in (23) also undermines an idea put forth in Arsenijević & Simonović 2014, namely that the impersonal form of *trebati* 'need' arises because of a post-syntactic filter

(23) a. Treba-l-**o** **je** da **Marija** **i** **ja** ide-mo na pijacu.
need-PTCP-NEUT.SG AUX.3SG DA Mary and I go-1PL on market
'Mary and I should have gone to the market.'

b. *Treba-l-**e** **smo** da **Marija** **i** **ja** idemo na pijacu.
need-PTCP-FEM.PL AUX.3PL DA Mary and I go-1PL on market
intended: 'Mary and I should have gone to the market.'

Could we save the timing analysis? We could suppose instead that agreement is downward-by-any-occurrence of the label (Béjar 2003, Béjar & Rezac 2009, Keine & Dash 2018), so that the agreement probe can also 'see' elements in its specifier. Next, we would need to assume that the movement-triggering probe can 'see' a little farther than the agreement-triggering probe. Imagine, for example, that [*u*φ] can only see as far as the edge of the closest phase boundary, whereas [N*] has no locality restrictions (modulo islands). Assuming that the embedded subject in *trebati*-constructions is initially in a separate phase, it would have to move *before* being agreed with for its features to be accessible to the agreement probe. If the subject instead moved after agreement probing, we would get the desired default spell-out of [φ].

On these assumptions and in accordance with the Phase Impenetrability Condition given in (24), subjects in monoclausal configurations would be in the domain of the agreement probe regardless of whether they are moved first or agreed with first. The reason is that subjects originate in the specifier of the *v*P phase, which counts as an 'edge' for purposes of the PIC. The monoclausal subject is therefore always in the same phase as T, hence it always triggers agreement.

(24) **Phase Impenetrability Condition** (Chomsky 2000)
In phase α with head H, the domain of H is not accessible to operations outside of α, only H and its edge are accessible to such operations.

However, even on this revised analysis, it is unclear what happens with [N*] on T in cases like (23a), where the subject stays low. It seems that the only solution would be to assume there is an entirely separate kind of embedded clause, which is exactly the same as the regular clause embedded under *trebati* 'need', but

that deletes the agreement morphology. Were the agreeing and non-agreeing *trebati* appearing in identical syntactic configurations, we would not observe distributional differences of the kind seen in (24).

is impenetrable to movement probes (e.g., because it has an additional, invisible structural layer). Since there is no independent evidence to assume that there are two different types of complements with *trebati*, I will attempt to go a different route.

4.2. A-movement is 'free'

Assume again that agreement probing is based on c-command and constrained by the PIC. Assume further that there is *no movement probe*: A-movement is 'free'. More precisely, it is fully optional, it can occur at any stage of the derivation (or not), and it is constrained only by the requirement that the output be well-formed (see Baker & Vinokurova 2010 and Rezac, Albizu & Etxepare 2014 for explorations of this idea in different domains). With these assumptions in place, answers to several questions become clear. Why can the 'movement probe' see the subject even when the agreement probe cannot? Because there is no 'movement probe'; the relevant NP is simply moving out of the lower clause freely. Why does it look like the 'movement probe' and the agreement probe can be freely ordered with respect to each other, giving rise to the optionality of agreement with *trebati*? Because there is no 'movement probe'; movement (of this kind) can freely occur at any step of the derivation, ipso facto it can occur before or after agreement probing.

Several aspects of the analysis still need to be fleshed out. The first one I will tackle concerns the position of the subject and, related to that, the phase status of the embedded complement. When or where is the subject (in)visible to the agreement probe? In answering this question, we first need to determine the identity of the embedded complement's topmost projection. Two candidates immediately come to mind: TP and CP. On the one hand, this is a raising construction, and clauses that are raised out of in English are TPs. On the other hand, the embedded *da*-clause is finite, and all finite complements in English are usually taken to be CPs. Fortunately, Todorović & Wurmbrand (2020) have devised diagnostics that split Serbian *da*-complements into three groups: *v*P, TP and CP. These diagnostics include, for example, the temporal interpretation of the embedded clause with respect to the matrix, the possibility of clitic climbing, the availability of the perfective aspect in the embedded clause, adverb positions, and others (see Todorović & Wurmbrand 2020:48). According to all of these, *trebati* behaves like a verb that takes a TP complement; I do not give examples here for reasons of space.

Then, if the embedded TP is a phase, agreement should still be possible when the subject is in spec TP (the phase edge), but not when it stays in its base

position (spec *v*P). If *da* 'DA' is in T, as Todorović & Wurmbrand suggest, the subject in sentences like (23a) is indeed lower than spec TP, and therefore inaccessible to the agreement probe. When the subject and *da* 'DA' switch places, the sentence becomes grammatical (25) *even with the agreement on the matrix verb*.

(25) Treba-**mo** **Marija i ja** **da** ide-mo na pijacu.
need-1PL Mary and I DA go-1PL on market
'Mary and I need to go to the market.'

Yet, Serbian is a language that allows rampant scrambling, so we cannot know from (25) alone whether the subject is in spec TP of the embedded clause, or whether it has A-moved to the matrix, and the verb was displaced to the left of it. Recall, however, that Serbian has a class of NPIs (*i*-NPIs) that can only be licensed by superordinate negation; furthermore, there is a class of NPIs (*ni*-NPIs) that are licensed only by clause-mate negation (Progovac 1991). We can use this to test whether the subject in (25) is at the edge of the embedded clause, or whether it has moved to the matrix. In fact, it seems that both options are possible (26). In (26a), the subject is in spec TP of the embedded clause; the *i*-NPI is licensed by the superordinate negation, and the matrix predicate can agree because the subject is at the edge of the phase. In (26b), the subject has raised into the matrix clause and the matrix material has been scrambled to the left of it; the *ni*-NPI is licensed by clause-mate negation, and the matrix predicate agrees with the subject.

(26) a. **Ne** bi treba-o **i**-ko da to uradi.
NEG AUX.AOR.3SG need-PTCP.MASC.SG i-who DA that do
'No one should do that.'

b. **Ne** bi treba-o **ni**-ko da to uradi.
NEG AUX.AOR.3SG need- PTCP.MASC.SG ni-who DA that do
'No one should do that.'

To test the validity of the above diagnostic, we can run it on similar examples for which our theory gives clear predictions. The predictions seem to be borne out. For example, (27a) is grammatical because the *i*-NPI is licensed by superordinate negation, and there is default agreement on the auxiliary/participle, reflecting the fact that the subject is too low to be agreed with. On the other hand, (27b) is ungrammatical because the agreement probe on the participle cannot reach the low subject; therefore, there is no way to get the masculine agreement. Furthermore, (27c) is bad regardless of the agreement on the participle because the *ni*-NPI is not licensed by clause-mate negation; the negation is in the superordinate clause.

(27) a. Ne **bi** treba-**lo** da **i**-ko to uradi.
NEG AUX.AOR.3SG need- PTCP.NEUT.SG DA i-who that do
'No one should do that.'

b. *Ne **bi** treba-**o** da **i**-ko to uradi.
NEG AUX.AOR.3SG need- PTCP.MASC.SG DA i-who that do
intended: 'No one should do that.'

***Ne** bi treba(-l)-o da **ni**-ko to uradi.
NEG AUX.AOR.3SG need- PTCP.NEUT/MASC.SG DAni-who that do
intended: 'No one should do that.'

We have established that the agreement probe can 'see' the subject when it is in spec TP of the embedded clause, but not when it is in its base position in spec *v*P. Let us now specify how combining this with the freedom of movement gives us the desired optionality of agreement with *trebati*. If probing for agreement occurs when the subject is in spec *v*P of the embedded clause, it will fail. Nothing will go wrong in such derivations: agreement probing is free to happen and fail (Preminger 2011, 2014). Since A-movement is 'free', it is also free to not occur. The subject-NP can clearly be licensed in situ (cf. (23a)). The NP stays low, out-of-reach of the higher agreement probe, which fails to find a target and therefore shows the characteristic morphology associated with unvalued φ-features (28a). On the other hand, if movement to spec TP of the embedded clause applies first, the relevant NP will be in the domain of matrix T when agreement probing takes place. The result is φ-feature agreement between the subject and the matrix T (28b). As before, movement of the subject to the matrix clause is free to apply after this or not. This analysis allows us to explain the 5-out-of-6 grammaticality pattern I represent schematically in (29).

(28) a. *agreement first*: T[uφ] need-3SG….[TP da [*v*P Marija and Jovana …
b. *movement first:* T[φ:3PL] need-3PL….[TP [Marija and Jovana]$_i$ da [*v*P t$_i$ …

(29)

NP.3PL – need-3SG – da…	need-3SG – NP.3PL – da…	need-3SG – da – NP.3PL
NP.3PL – need-3PL – da…	need-3PL – NP.3PL – da…	***** need-3PL – da – NP.3PL

Note that this empirical picture provides some evidence for the phasehood of the embedded TP: the agreement probe sees elements at the edge of the lower phase, but not those that are inside the phase. While there are some other indications that the phase-based analysis may be on the right track (e.g., the

impossibility of clitic climbing in (8b-c)), coming up with convincing evidence for phasehood turns out to be tricky, often for independent reasons.[7] Furthermore, that TP is a phase in the *trebati* construction may look strange at first sight, since the more common candidates for phasal status are *v*P and CP. However, CP is absent in the complement of *trebati*, and there is evidence that *v*P is not be behaving as a phase either. We may be seeing here a case of Phase Extension (den Dikken 2007) or Phase Sliding (Gallego & Uriagereka 2007), where the phase status of XP (*v*P) is extended to a dominating YP (TP).

To see this, it is interesting to look at what happens when *trebati* 'need' is embedded in a *da*-complement of another *trebati* verb. We can, in fact, use such data to answer two questions, namely (i) is there evidence for *v*P phasehood, and (ii) are the predictions we make in relation to (im)possible agreement patterns borne out? Consider the contrast in (30); in (30a) the highest *trebati* is not agreeing with the subject but the embedded one is, and in (30b) we have the reverse.[8]

(30) Context: Chomsky and Lasnik have agreed to come to our summer school, where we usually ask the teachers to attend as many lectures as they can. However, my colleague does not think Chomsky and Lasnik should be required to go to introductory classes, so she says:

a.	Čomski	i	Lasnik	ne	treba-**Ø**	da	treba-**ju**	da	idu.
	Chomsky	and	Lasnik	NEG	need-3SG	DA	need-3PL	DA	go
b.	*Čomski	i	Lasnik	ne	treba-**ju**	da	treba-**Ø**	da	idu.
	Chomsky	and	Lasnik	NEG	need-3PL	DA	need-3SG	DA	go

'Chomsky and Lasnik shouldn't be made to go.'

[7] For example, binding facts have been used to argue that CP is a phase in English based on the ambiguity of examples such as *Which picture of himself did John say Mark liked?*. For the anaphor to be bound by 'John', it would have had to "stop over" in a position where it is above 'Mark' but in the c-command domain of 'John', and spec, CP of the embedded clause is an excellent candidate. However, Serbian does not have the equivalent of English *himself*; *svoj* 'self' is always subject-oriented, and *trebati* constructions do not allow for two independent subjects (11).

[8] I confine the discussion to the examples in (30) because the judgements for these cases are the most reliable. Our analysis predicts sentences where both verbs *trebati* agree or both do not agree with the subject to be grammatical. In fact, these sentences are somewhat degraded (though significantly less than (30b)), but this is possibly an effect of repetition.

Focusing for now on (30a), I will show that its agreement pattern can be derived if only TP is a phase, but not if *v*P is a phase, nor if both *v*P and TP are phases. Let us show the structure of (30a) schematically in (31). If only TP is a phase, we get the agreement pattern in (30a) as follows: The subject moves from its base position to spec TP of the most embedded clause; there, it is at the edge of the most embedded TP phase, so it is accessible to the agreement probe on embedded *trebati* 'need', but not to the one on matrix *trebati*. The subject stays in this position until matrix T is merged and probes for agreement. The probing fails, giving rise to 3SG agreement, and the subject is then raised to spec TP of the matrix clause (or not). If only *v*P were a phase, we would first need to allow movement to spec *v*P, since each agreement probe on T would only be able to see the NP that is in the spec of its closest phasal *v*P. Then, since the final raising of the subject should be optional (with no repercussions for agreement, cf. the default agreement on the matrix in (30a)), we would predict the word order in (32) to be possible, contrary to fact.

(31) [TP [Chomsky and Lasnik]$_i$ T[*u*φ] [NEGP not [*v*P need
[TP T DA[φ:3PL] [*v*P need [TP **t**$_i$ DA [*v*P **t**$_i$...

(32) *Ne treba-Ø da Čomski i Lasnik treba-ju da id-u.
NEG need-3SG DA Chomsky and Lasnik need-3PL DA go-3PL
intended: 'Chomsky and Lasnik shouldn't be made to go.'

Additionally, it is unclear how the phasal *v*P account would rule in sentences like (26a), where the subject is in spec TP of the embedded clause and yet the agreement probe on matrix T is able to see it. If matrix *v*P were a phase, we would not expect (26a) to be grammatical. Moreover, if both *v*P and TP were phases, we would again run into the same problems; we would incorrectly predict (32) to be grammatical and (26a) to be ungrammatical. Both of these alternatives would also struggle to account for the existence of 'hybrid forms', which I discuss in the following section. The data therefore support an analysis where, in a *trebati* construction, (i) the complement of an embedded T head is opaque to agreement probing outside of that TP, and (ii) A-movement, which is not feature-driven, does not obey such locality restrictions.

4.3. Hybrid forms support the free movement analysis

So far, we have seen that, in complex tenses, the auxiliary and the participle either both agree (1b) or both do not agree with the subject (2b). There are

additionally what we can call 'hybrid forms', where one member of {auxiliary, participle} agrees with the subject, and the other one does not. Such constructions are not at all uncommon (see Klikovac 2011:8). Crucially, the element that agrees in these hybrid forms is always the auxiliary and never the participle (33).

(33) a. Sada bi-**h** ja treba-**lo** da se naljutim.
now AUX.AOR-1SG I need-PTCP.NEUT.SG DA SE get_angry
'Now I should become angry.'

b. Iako su koncerti treba-lo da predstavljaju…
although AUX.3PL concerts need-PTCP.NEUT.SG DA represent
'Although concerts were supposed to represent…'

c. Takođe bi-**ste** treba-**lo** da budete pažljivi prilikom
also AUX.AOR-2PL need- PTCP.NEUT.SG DA be careful while
korišćenja rumenila…
using blush
'You should also be careful while using blush…'

If agreement probing happens in lockstep with structure building, our analysis predicts the pattern in (33). In the first step of deriving the pattern in (33c), the subject is low; the participle probes for agreement and does not find a goal—the φ-features of the participle stay unvalued and are spelled-out as neuter singular (34a). Before matrix T is merged, the subject can either move or stay in situ. If the subject stays in situ (or moves after agreement probing), we get the familiar non-agreeing pattern, e.g. (2b) and (23a). If the subject moves to the specifier of the embedded TP before agreement probing, matrix T will agree with it, and we will get the hybrid pattern in (33c), see (34b).

(34) a. *first step*: **[*u*φ] on Part spelled-out as NEUT.SG.**
[PARTP Part [*u*φ] need-PTCP.NEUT.SG [TP DA you...]]

b. *second step:* **T agrees with the moved subject**
[TP T [φ:2PL] AUX.2PL [PARTP Part [*u*φ] need- [TP [you]$_i$ DA t$_i$...]]
PTCP.NEUT.SG

The free movement analysis accounts for the existence of hybrid forms without introducing any additional assumptions. Importantly, this analysis also predicts the reverse case to be impossible. In order for the participle to agree, the subject must move to spec of the embedded TP. At that point, the subject is also accessible to the agreement probe in matrix T. We then correctly predict that it is impossible for the participle to agree with the subject when the auxiliary does not also do so.

5. RAISING BEYOND SERBIAN

In this section, I will briefly reflect on the generalizability of the proposed analysis to raising constructions beyond Serbian. On the surface, the empirical picture in English is quite different. Namely, the embedded subject in a raising construction *must* move when the complement clause is an infinitival TP (35a), and it *cannot* move when the complement clause is a finite CP (35b). The standard explanation for this contrast is that the subject in (35a) must move because it cannot get Case in its original position and/or because it needs to satisfy the EPP feature on matrix T (Chomsky 1981, 2008). On the other hand, mainstream analyses of (35b) claim that the embedded subject there cannot move because the PIC makes it inaccessible to operations outside the embedded CP (Chomsky 2000, 2001) and/or because nominals whose Case/φ-features have been checked cannot move (Activity Condition, Chomsky 2001).

(35) a. John seemed [TP <John> to like Mary].
b. It seemed [CP that John liked Mary].

Only one of the accounts for the obligatoriness of movement in (35a) is in principle compatible with the Serbian data—the account on which the nominal moves "because" it cannot get licensed in its base position. Recall that the English raising construction in (35a) is crucially different from its Serbian counterpart in that the embedded clause is non-finite. It is independently known that English infinitival T cannot license a subject. Therefore, if the subject remained in situ, the resulting sentence would be ungrammatical regardless of our assumptions about the need to satisfy features on matrix T. Suppose instead that A-movement is essentially free, as in Serbian. Still, in (35a), the subject "needs" to move because it cannot be licensed in its base position. In other words, only the derivation where the movement has occurred will generate a grammatical sentence. This contrasts with the Serbian case, since the embedded clause there is finite, and the subject can be licensed in situ.[9] Crucially, however, there is no need to assume that movement is triggered by features on matrix T; the non-movement option in (35a) is ruled out for independent reasons. Are there similarly independent reasons to think that the output in (35b) would not be well-formed had the subject moved out of the

[9] Recall that *trebati* 'need' can also take an infinitival complement. In that case, we get exactly the same result as in English. The infinitive cannot license a subject and the raising appears to be obligatory.

embedded clause? Yes, assuming that the embedded CP is a phase, the subject would have to A'-move to spec CP, and then A-move to spec TP of the matrix clause—this would be a case of improper movement (Chomsky 1973, May 1979, Williams 2003, Abels 2008). We also have an answer for why the Serbian raising construction does not constitute a case of improper movement. According to the diagnostics in Todorović & Wurbrand 2020, the complement clause of *trebati* 'need' is a TP; there are no A'-positions in which the subject is required to stop on its way to spec TP of the matrix clause.

6. CONCLUSION

In this paper, I explored the syntactic properties of the Serbian modal verb *trebati* 'need'. I first showed that *trebati* is an unaccusative verb which takes a finite clausal complement. The embedded subject may raise to the subject position of *trebati*, and *trebati* can, but need not, agree with said subject. The embedded subject can also stay in situ, which is inconsistent with the mainstream view that raising-to-subject is a feature-driven operation. I considered two analyses for the optionality of agreement with *trebati*, a timing analysis and a 'free' movement analysis. I concluded that timing analyses run into problems, either with monoclausal subjects or with low subjects of *trebati*, depending on one's assumptions. The free-movement analysis seems to fare a lot better with respect to both of these issues, in addition to explaining the basic pattern of agreement optionality in simple terms. This analysis can also account for most of the data with multiple embeddings of *trebati*, and it is supported by agreement possibilities of what I termed hybrid forms. Finally, I showed that, coupled with independently needed restrictions, the free-movement analysis can be extended to English-style raising constructions.

7. REFERENCES

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