

## Subjunctive Questions in Serbian

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ABSTRACT

We discuss Subjunctive Questions in matrix and embedded environments focusing on Serbian. Subjunctive Questions, which are common in Balkan languages, ask regarding the addressee's prioritizing state whereas Indicative Questions ask regarding the addressee's epistemic state. We argue that the source of prioritizing modality is subjunctive mood which is analysed as a prioritizing modal operator anchored to the matrix event (Hacquard 2006). Unlike non-interrogative subjunctives, we argue that subjunctive mood in questions is licensed due to the interrogative operator and not due to the embedding predicate (Bhatt 1999). In this way, we are able to account for the wider distribution of Subjunctive Questions compared to non-questions. Finally, we discuss the special pragmatic properties of Subjunctive Questions which are associated with the directive character of the possible answers.

KEYWORDS subjunctive mood · interrogatives · prioritizing modality · Serbian

### 1 INTRODUCTION

In this paper, we discuss Subjunctive Questions (henceforth, SQs) in Serbian. For the majority of Balkan Languages, such as Bulgarian, Greek, Romanian, Turkish, Slovenian, SQs are productive in matrix and embedded environments (see Vrzić 1996 for Serbian and Tomić 2006 for a variety of languages). In Serbian, embedded subjunctive and indicative propositions are introduced by a particle *da* which however has been shown to exhibit different properties in the two environments, suggesting that there are two distinct particles, which, for ease of exposition, we term *da<sub>sbjv</sub>* and *da<sub>ind</sub>* (see Progovac 1993, Vrzić 1996, Tomić 2006, Sočanac 2017, Todorović & Wurmbrand 2020, Todorović 2015 for further elaboration). In particular, *da<sub>ind</sub>* has been analysed as a complementizer introducing an embedded declarative whereas for *da<sub>sbjv</sub>* there are different analyses, treating it as the realization of the subjunctive mood head, as a modal particle, or as some sort of polarity particle lower than the indicative one in the clause structure. The difference between the subjunctive particle *da* and the indicative complementizer *da* becomes apparent in questions. Whereas the indicative complementizer *da* is illicit in questions (matrix or embedded) as shown in (1-a), the subjunctive particle *da* appears in embedded and matrix questions forcing a prioritizing modal interpretation, as shown in (1-b). In its absence the question is interpreted as an indicative question about the actual world.

- (1) a. (Jovan se pita) šta (\*da) oblače balerine. IQ  
 John REFL ask.PRS.3SG what *da<sub>ind</sub>* wear.IPFV.PRS.3PL ballerinas  
 'John wonders what ballerinas wear.'
- b. (Jovan se pita) šta da oblače balerine. SQ  
 John REFL ask.PRS.3SG what *da<sub>sbjv</sub>* wear.IPFV.PRS.3PL ballerinas  
 'John wonders what ballerinas should wear.'

SQs as in (1-b) share all question properties with Indicative Questions (henceforth, IQs) but they differ in the content of the query. While canonical IQs typically ask about the

questionee's epistemic/doxastic state (see e.g. Farkas 2020), SQs ask about the questionee's prioritizing state, as illustrated by the different interpretations in (1-a) and (1-b). The prioritizing meaning is attributed to the weak necessity modal *should* in English. As one can see, the only difference between the IQs and SQs is the presence of *da<sub>sbjv</sub>* in the latter.

Although SQs are mentioned in the previous literature on Balkan subjunctives (Vrzić 1996, Tomić 2006, Roussou 2009, Giannakidou 2015, Oikonomou 2016, Stegovec 2016, 2019, Bilbiie & Mardale 2018, Sočanac 2017), there is limited work on their syntax and semantics. In the present paper, we discuss SQs in Serbian and we attempt an analysis of their meaning based on the idea that the subjunctive particle *da<sub>sbjv</sub>* functions as a modal particle which acquires prioritizing flavor. We take the presence of modality in SQs as evidence that modality is an integral part of subjunctive mood, as has been suggested by independent research for different languages (Stegovec 2019, Oikonomou 2016, Portner & Rubinstein 2020, Kratzer 2016). This line of analysis offers a welcome flexibility as to how to account, on the one hand, for the interpretation of the subjunctive in unembedded environments (especially questions) while on the other hand, accounting for the observed semantic dependency (in terms of modal flavor) on the matrix predicates. We model this dependency under Hacquard's *event relativity* approach to modals in Hacquard (2006, 2010).

The paper proceeds as follows. In §2 we present basic background on subjunctive mood in Serbian focusing on the formation of SQs. In §3 we outline our analysis of subjunctive mood as a modal operator. Based on this approach, we develop an analysis of the meaning of embedded and matrix subjunctives. Focusing on questions, we show that they are special in that some type of subjunctive complement is always allowed. §4 concludes and points to certain puzzles regarding SQs cross-linguistically.

## 2 SUBJUNCTIVE MOOD AND QUESTIONS IN SERBIAN

In Serbian, as in other Balkan languages and unlike in Romance languages, the subjunctive/indicative distinction is not reflected in the verbal morphology (Progovac 1993, 2005, Bošković 1997, Todorović 2012, Sočanac 2017, Todorović & Wurmbrand 2020). Moreover, the complement of a verb typically combining with indicative, like *verovati* 'believe', and a verb combining with subjunctive, like *želeti* 'want', are introduced by the morphologically identical particle *da* followed by a verb which inflects for tense and aspect.<sup>1</sup> Aspectual morphology of the embedded verb, in certain environments, makes it possible to distinguish indicative from subjunctive (see Todorović 2015, Sočanac 2017). As illustrated in (2), *da<sub>ind</sub>* cannot embed a present perfective verb whereas this is the default option for subjunctive complements.

- (2) a. Verujem        da    Jovan dolazi/\*dođe.  
       believe.PRS.1SG *da<sub>ind</sub>* John come.IPFV.PRS.3SG/come.PFV.PRS.3SG  
       'I believe that John will come.'
- b. Želim         da    Jovan dolazi/dođe.  
       want.PRS.1SG *da<sub>sbjv</sub>* John come.IPFV.PRS.3SG/come.PFV.PRS.3SG  
       'I want John to come.'

The different nature of *da<sub>sbjv</sub>* is evident in directive/optative root environments, in which it obligatorily signals subjunctive mood (Progovac 2005, Sočanac 2017 i.a.). By contrast *da<sub>ind</sub>* never appears in matrix indicative clauses, as is expected for complementizers crosslinguistically.

<sup>1</sup>Notice that in most Balkan languages a different particle is used for the two different types of complements. For example, *da* is reserved for subjunctives in Bulgarian and there are two distinct indicative complementizers. In Greek the subjunctive particle is *na*, morphologically distinct from indicative complementizers (Terzi 1992, Roussou 2000, Krapova 2001, Tomić 2006). A comparative study of the particles in the three languages enhances the hypothesis that there are (at least) two distinct *da*-particles in Serbian.

- (3) a. Da uzima vitamine tri puta dnevno.  
*da<sub>sbjv</sub>* take.IPFV.PRS.3SG vitamins three times daily  
 ‘He should take vitamins three times a day.’ STRONG ADVICE
- b. Da pojedeš sve iz tanjira.  
*da<sub>sbjv</sub>* eat.up.PFV.PRS.2SG everything PREP plate  
 ‘Eat up everything on the plate.’ COMMAND
- c. Da ti se svi snovi ostvare!  
*da<sub>sbjv</sub>* 2SG.DAT REFL all dreams come.true.PFV.PRS.3PL  
 ‘May all your dreams come true!’ WISH

Similarly, the different nature of the two *da*-elements becomes apparent in interrogatives.<sup>2</sup> IQs, targeting the questionee’s epistemic/doxastic state, are not compatible with *da* whereas SQs, targeting the questionee’s prioritizing state, require the subjunctive particle *da*. In what follows we briefly introduce questions in Serbian.

## 2.1 INDICATIVE VS SUBJUNCTIVE QUESTIONS

Matrix *yes/no*-IQs in Serbian are formed with the question-particle *da li*<sup>3</sup> in sentence-initial position or via verb fronting followed by the particle *li* (Progovac 2005).

- (4) a. Da li deca večeraju?  
 c Q kids dine.IPFV.PRS.3PL  
 ‘Are the kids having dinner?’
- b. Večeraju li deca?  
 dine.IPFV.PRS.3PL Q kids  
 ‘Are the kids having dinner?’

In a similar vein, Serbian employs two ways in forming matrix *yes/no*-SQs. One way is with the question particle *da li* followed by the subjunctive particle *da<sub>sbjv</sub>* as shown in (5-a)<sup>4</sup>. The second way is by entirely omitting *da li* and fronting *da<sub>sbjv</sub>* followed by the verb in the case of unmarked *yes/no*-SQs as in (5-b).<sup>5</sup>

- (5) a. Da li da deca večeraju?  
 c Q *da<sub>sbjv</sub>* kids dine.PRS.3PL  
 ‘Should the kids have dinner, I wonder...?’
- b. Da (\*li) večeraju deca?  
*da<sub>sbjv</sub>* Q dine.PRS.3PL kids  
 ‘Should the kids have dinner?’

The two different ways to form SQs also have a meaning difference which does not seem to hold for IQs. SQs in which *da<sub>sbjv</sub>* has undergone fronting as in (5-b) are typical in that the questioner requires an answer from the addressee. By contrast, *da li*-SQs as in (5-a) have a more introspective flavor, without requiring an answer.

<sup>2</sup>There are more differences between the two particles and the type of clauses they introduce, which have been the topic of extensive research in syntax. For reasons of space, and given that there is unanimous agreement that the two *da*-elements are distinct, we do not present the relevant argumentation. See Todorović & Wurmbrand (2020), Todorović (2012), Progovac (1993), Sočanac (2017) for extensive discussion.

<sup>3</sup>Note that *da* as part of the question-particle *da li* (4-a) is distinct from both subjunctive and indicative *da* particles. Namely, it can co-occur with the subjunctive particle *da<sub>sbjv</sub>* (5-a), while the omission of the particle *li* automatically results in subjunctive reading (5-b). No intervening material is allowed between the interrogative *da* and *li*. We thus take *da* that obligatorily supports *li* in question initial position to be part of the complex question-particle *da li*.

<sup>4</sup>The verb *večerati* ‘to have dinner’ is one of the verbs that do not show the morphological distinction between perfective and imperfective aspect.

<sup>5</sup>We believe that the explanation why *li* is not possible in SQs as in (5-b) is morpho-syntactic in nature. Given that *li* must appear in second position and furthermore as a clitic has restrictions on the word it can attach to (see Progovac 2005 and Bošković 1997 for an elaborate discussion of the position of clitics in Bosnian/Croatian/Montenegrin/Serbian), this might explain why it is illicit on its own in SQs.

Moving to matrix *wh*-questions, notice that *wh*-SQs as in (6) are obligatorily marked by *da<sub>sbjv</sub>*. The subjunctive particle cannot be omitted without an immediate loss of the subjunctive meaning. The question without *da* is not ungrammatical but it can only be interpreted as a *wh*-IQ, asking what the kids are actually having for dinner. In addition, *yes/no* and *wh*-SQs are special in that the person who asks the question, i.e. the questioner, is assumed to be involved somehow in realizing what is described by the embedded proposition. For example, in (6), the questioner is responsible for the kids eating something. We discuss this performative effect in detail, in §3.3.

- (6) Šta #(da) deca večeraju?  
 what *da<sub>sbjv</sub>* kids dine.PRS.3PL  
 ‘What should the kids have for dinner?’

Similar to matrix questions, embedded *yes/no*-SQs and *wh*-SQs are obligatorily marked by the subjunctive *da<sub>sbjv</sub>*. In embedded *yes/no*-questions, the question-particle *da li* obligatorily introduces the embedded question. As we notice in (7), the subjunctive particle *da<sub>sbjv</sub>* following *da li* is obligatory in order to derive a prioritizing interpretation. Without *da<sub>sbjv</sub>*, the question is a typical embedded IQ about whether the kids are actually having dinner.

- (7) Jovan pita Mariju da li #(da) deca večeraju.  
 John ask.PRS.3SG Mary C Q *da<sub>sbjv</sub>* kids dine.PRS.3PL  
**With *da***: ‘John asks Mary whether the kids should have dinner.’

Similarly, embedded *wh*-SQs differ from *wh*-IQs in the presence of *da<sub>sbjv</sub>*, which enforces a prioritizing interpretation. The sentence in (8) without *da<sub>sbjv</sub>* conveys that the questioner wants to know what the kids are actually having for dinner whereas the sentence with *da* conveys that the questioner needs to decide what to offer to the kids for dinner.

- (8) Pitam se šta #(da) deca večeraju.  
 ask.1SG REFL what *da<sub>sbjv</sub>* kids dine.PRS.3PL  
 ‘I wonder what the kids should have for dinner.’

Regarding the syntax of SQs we take the question particle *da li* to be in the C-domain and the subjunctive particle *da<sub>sbjv</sub>* to be located lower in a mood head (in line with Roussou’s (2009) analysis of the subjunctive particle in Greek. Cf. Krapova 2001 for Bulgarian). As noticed in Sočanac (2017), contrary to what happens in other languages (e.g. Bulgarian and Greek), it is possible to have phrases intervening between *da<sub>sbjv</sub>* and the verb as long as they are focused. In addition, it is possible to have intervening material between *da li* and *da<sub>sbjv</sub>*.

As demonstrated in (9), the adverbial *danas* ‘today’ can appear between the question and subjunctive particles. Furthermore, the subject of the embedded clause, when it is emphasized, can occupy the position between the subjunctive particle and the embedded verb.

- (9) Pitam se da li danas da Nikolas jede ribu.  
 ask.1SG REFL C Q today *da<sub>sbjv</sub>* Nicolas eat.IPFV.PRS.3SG fish  
 ‘I wonder whether Nicolas should eat fish today.’

Similarly, in *wh*-SQs it is possible to have emphasized material intervening between the *wh*-phrase and *da<sub>sbjv</sub>* as illustrated in (10):

- (10) Pitam se šta danas da deca večeraju.  
 ask.1SG REFL what today *da<sub>sbjv</sub>* kids dine.PRS.3PL  
 ‘I wonder what the kids should have for dinner today.’

Although there are many interesting questions regarding the syntax of SQs and their

differences with IQs, in what follows we focus on the interpretation of SQs. What is important in terms of the semantic derivation is that in SQs the subjunctive particle *da<sub>sbjv</sub>* is obligatorily present, following the question complementizer or the *wh*-word.

### 3 ANALYSIS: PRIORITIZING FLAVOR IN SQS

In the previous section we have seen that SQs, whether in matrix or embedded environments, invariably convey a prioritizing flavor querying the questioner's preferences/priorities. In this section, we try to identify the source and the nature of prioritizing modality in SQs in Serbian.

#### 3.1 BACKGROUND: SOURCE OF PRIORITIZING FLAVOR

Different claims have been made regarding the source of prioritizing modality in utterances marked with subjunctive. The discussion mostly focuses on embedded environments. Subjunctive has been characterized as an embedded mood, as opposed to indicative which is considered the mood of matrix and embedded declaratives (see e.g. Lakoff 1968, Portner 2018). However, we clearly notice that this is not the case for the subjunctive in Serbian.<sup>6</sup> A lot of work builds on the idea that subjunctive is *selected* by certain predicates which are responsible for the prioritizing modality. Thus, under this view, in (11) we have subjunctive because *preferirati* 'prefer' is an attitude predicate with prioritizing semantics (Giorgi & Pianesi 1997, Villalta 2008).

- (11) **Preferiram** da Jovan jede voće.  
 prefer.PRS.1SG *da<sub>sbjv</sub>* John eat.IPFV.PRS.3SG fruits  
 'I prefer that John eat fruits.'

Selectional approaches to mood distribution differ largely as to what they consider the unifying feature among all predicates selecting the subjunctive. For some approaches this feature is specified as subjunctive and the indicative is the default (i.e. comparative semantics in Giorgi & Pianesi 1997, Villalta 2008) while other approaches take the indicative to be specified (i.e. Portner & Rubinstein 2012, Schlenker 2005) and the subjunctive to be the elsewhere case. In other works the indicative/subjunctive distinction is modelled in terms of the world of evaluation of the embedded clause with relation to the matrix verb (e.g. Farkas 1992, 2003, Quer 2001, 2009, Giannakidou 2015; see Portner 2018 for an overview). All selectional approaches need to account for cases in which the subjunctive appears to be unembedded. The sentence in (12) can be uttered by a mother to the babysitter, when leaving the house. Perhaps, Jovan was sick and so it is important that he eat rice. It is interpreted as a directive towards the addressee (see Kaufmann et al. 2023).

- (12) Da Jovan jede pirinač.  
*da<sub>sbjv</sub>* John eat.IPFV.PRS.3SG rice  
 'John should eat rice.'

Although in most of the aforementioned works matrix subjunctives are not (at least extensively) discussed, an obvious path to take would be that there is a covert directive speech act operator (DIR) with prioritizing modality selecting for the subjunctive.

However, the case of matrix questions is more challenging under a selectional approach. The speech act operator in questions is clearly interrogative (QUEST) and one cannot argue that there is a covert DIR-operator. One possibility would be to assume that the QUEST speech act operator comes in two flavors, one with a prioritizing flavor

<sup>6</sup>In general, matrix subjunctives and matrix subjunctive questions are very productive in all Balkan languages. Even in some Western Romance languages such as Iberian Spanish, matrix subjunctives appear to be quite productive, pointing against the view of subjunctive as embedded mood (see Evans 2007). Notice however that SQs are not attested in Western Romance languages.

and another with a doxastic flavor. However, the main function of questions, to inquire for information, remains the same irrespective of the mood. In addition, all different types of questions (information-seeking, rhetorical, etc.) are instantiated by SQs.

An additional challenge for selectional approaches to mood is that a large number of predicates are compatible with both subjunctive and indicative not only cross-linguistically but also intra-linguistically (e.g. *hope*, *promise* etc.). In recent studies more and more such predicates are reported for different languages (see the discussion in Portner & Rubinstein 2020, Giannakidou & Mari 2021). Selectional approaches would again have to posit an ambiguity for these predicates which however does not seem to be independently motivated (Portner & Rubinstein 2020). Another argument comes from certain “subjunctive-selecting predicates” (e.g. *advise*, *order*) which have been recently shown for Greek to tolerate indicative under the condition that they embed a prioritizing modal (Oikonomou 2022). Similar facts obtain for Serbian as we show below for the predicate *posavetovati* ‘advise’.

- (13) a. Posavetovao sam Petra da jede voće.  
 advised AUX Peter *da*<sub>sbjv</sub> eat.IPFV.PRS.3SG fruits  
 ‘I advised Peter to eat fruits.’
- b. Posavetovao sam Petra da mora da jede voće.  
 advised AUX Peter *da*<sub>ind</sub> must.PRS.3SG *da*<sub>sbjv</sub> eat.IPFV.PRS.3SG fruits  
 ‘I advised Peter that he must eat fruits.’

If indeed predicates select for mood, this large-scale variability is unexpected. It seems that we need an analysis which allows for some flexibility in the type of clausal complement, in order to explain variability intra- and cross-linguistically while at the same time accounting for certain selectional patterns that exist. An analysis along these lines is proposed in Portner & Rubinstein (2020), on which we build for the analysis of the subjunctive particle *da* in Serbian.

### 3.2 MOOD AS MODAL: TOWARDS A MODAL ANALYSIS OF SUBJUNCTIVE

The idea that subjunctive mood is the source of modality builds on the broader hypothesis that the locus of attitudinal/modal semantics is not the attitude predicates themselves (e.g. *believe*, *want*, *hope*) but modality is contributed by a component in the embedded proposition (Portner 1997, Kratzer 2006, Moulton 2009, Portner & Rubinstein 2020). This component can be the complementizer, a mood head, or the infinitival *to* in English. Under this view, attitude predicates are predicates of situations with different hypotheses as to how they combine with the embedded proposition (Elliott 2020, Simeonova 2020, Grano 2019, Demirok et al. 2019, Özyıldız 2021, Bondarenko 2021).

In this paper we follow Portner & Rubinstein (2020), Kratzer (2016), Stegovec (2019) in assigning a modal interpretation to subjunctive mood in Serbian. Moreover, we treat attitude predicates as predicates of situations which take the embedded proposition as their argument. Treating subjunctive mood as a modal operator raises immediately the question of its flavor and force. Building on Portner & Rubinstein (2020) who show that the content of the matrix predicate is responsible for specifying the modal base and the ordering source (i.e. the flavor) of the subjunctive, we argue that the flavor of subjunctive mood is largely dependent on the matrix predicate. That is, what is defined in the meaning of the subjunctive operator is that it is a modal which requires a dual background, i.e. a modal base and an ordering source. The content of the modal base and the ordering source is defined by the event immediately embedding the modal.<sup>7</sup> We

<sup>7</sup>Notice that the notion of content (CON) in Portner & Rubinstein (2020) is about the flavor of the matrix predicate. It is used differently than *content* in the decomposition analyses of Kratzer (2006), Moulton (2009) and subsequent works. In the same paper, Portner & Rubinstein (2020) analyse indicative mood also as a modal operator which instead of having a dual background, i.e. a modal base and an ordering source,

model this dependency following Hacquard's (2006) event relativity approach, according to which the modal base  $f$  and the ordering source  $g$  of a modal are relative to an event variable. This event variable, according to Hacquard (2010) can be anchored to the VP-event, to the matrix event of the embedding predicate, or to the utterance event. The subjunctive operator is located higher than aspect/tense and thus, it is relativized to the matrix embedding event and the world of evaluation for the matrix event, which is the closest binder. Crucially, given that the subjunctive operator is a modal operator with a modal base  $f$  and an ordering source  $g$ , (under Portner & Rubinstein's analysis), it must be anchored to an event with dual content, so that it can supply a content for its modal base and ordering source. Depending on the content of the predicate, it will supply the embedded operator with a different flavor, deriving the desired differences between *hope*, *want*, *prefer*, *wish*, etc.

Thus, we notice that, although we rejected a selectional approach to mood, the mood operator is still in a dependence relation with the matrix predicate, accounting for the fact that subjunctive distribution is more restricted than that of prioritizing modal auxiliaries. For these Hacquard (2006, 2010) argued that they are relativized to the local event of the embedded proposition, thus they are circumstantial modals, relativized to the circumstances of the local event. However, the subjunctive operator, located higher than aspect and tense in the clause structure, can only be anchored to the matrix event or, in matrix clauses, to the utterance event.

Given these assumptions, the formal meaning of subjunctive is as presented in (14). The subjunctive operator combines with a modal base  $f$  and an ordering source  $g$  relativized to the matrix event and the world of evaluation for the matrix event. The operator further combines with a proposition stating that the proposition is true in the *best worlds* given the modal base and the ordering source.<sup>8</sup>

$$(14) \quad \llbracket \text{SBJV} \rrbracket = \lambda f_{\langle e, stt \rangle} \lambda g_{\langle e, stt \rangle} \lambda e \lambda q_{\langle st \rangle} \lambda w. \forall w' \in \text{Best}_{\langle f, g, e, w \rangle} \rightarrow q(w')$$

Given this meaning, we need to explain the interpretation of i) embedded subjunctive utterances under antirogative predicates, ii) matrix subjunctive non-rogative utterances, iii) embedded subjunctive utterances under responsive and rogative predicates, and iv) matrix rogative utterances.

### 3.2.1 EMBEDDED ANTIROGATIVE SUBJUNCTIVES

Let us start with embedded antirogative subjunctives, taking a typical antirogative predicate like *want*, as in (15).

- (15) Marija želi da Nikolas dođe.  
 Maria want.PRS.3SG *da*<sub>sbjv</sub> Nicolas come.PFV.PRS.3SG  
 'Maria wants that Nicolas comes.'

Following an analysis of attitudes as predicates of situations, we take *želiti* 'want' to convey

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has only a modal base which needs to be defined. Thus, under this view, what governs mood distribution is whether a predicate, by virtue of its content, can provide a dual or a single background. In this way it is predicted that epistemic and doxastic attitudes will license indicative complements while attitudes with prioritizing content will combine with subjunctive complements which exhibit dual modality. In the same way, matrix declaratives which convey the beliefs of the speaker will always appear with indicative mood whereas directives and wishes will surface with subjunctive, as we discuss in the following section. Given our focus on SQs we do not present the mechanics for indicative mood, nor we take a stance as to whether the complementizer itself is the source of modality.

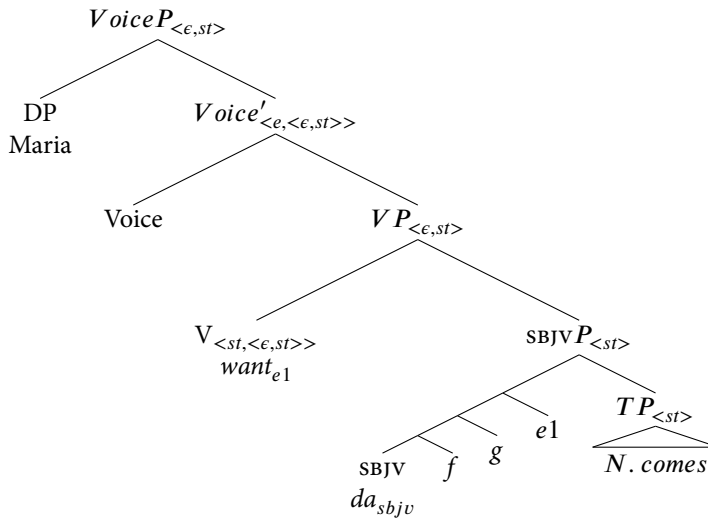
<sup>8</sup>According to the meaning in (14), the force of subjunctive mood is weak necessity, similar to what has been argued for modals like *should*. At first sight, this seems a welcome result. An SQ (e.g. *Da idem na žurku?*) cannot be uttered by a child asking for permission to go to a party. It can only be understood as advice-seeking (for crosslinguistic variation, see §4). However, one issue that needs to be explained is how a predicate like *dopustiti* 'allow' embedding a subjunctive gives rise to a possibility interpretation. As this is also a question for Portner & Rubinstein (2020), we will set it aside and take the universal analysis to be the most appropriate for the interpretation of SQs in Serbian, in line with Kaufmann et al. (2023).

an event of wanting with *prioritizing* content (PRT) which means that it can specify the embedded modal as having a doxastic/epistemic modal base and a bouletic/deontic/teleological ordering source.<sup>9</sup>

- (16) a.  $\llbracket \text{want} \rrbracket = \lambda q_{\langle st \rangle} \lambda e_e \lambda w'_s. \text{WANT}(e, w') \wedge \text{CON}(e, w') = \text{PRT} \wedge q(w')$   
 b.  $\text{PRT}_e = \langle \text{DOX}_e, \text{BOUL}_e \rangle$

We represent here the proposition as the argument of the attitude predicate.<sup>10</sup> Combining the pieces together the following configuration corresponds to a sentence as in (15). The experiencer argument 'Maria' is introduced by a separate Voice head.

- (17) Derivation for (15)



The meaning we derive for the sentence in (15) is that there is an event of wanting in which the experiencer is Maria and it is true that in the best worlds given the priorities in the *want*-event, Nicolas comes. The formal meaning is given in (18), where @ stands for the actual world.

- (18)  $\llbracket (15) \rrbracket = \exists e. \text{WANT}(e, @) \wedge \text{EXP}(e, @) = \text{Maria} \wedge \text{CON}(e, @) = \text{PRT} \wedge \forall w \in \text{Best}_{\text{PRT}}(e, @) \rightarrow N. \text{comes}(w)$

The dependence relation between the mood operator and the matrix predicate is achieved due to the fact that the event variable of the subjunctive operator is relativized via a binding mechanism to the event variable of the matrix predicate. We represent the consequence of the binding relation by coindexing the two event variables. Event binding ensures that the best worlds are defined with respect to the matrix experiencer's priorities as opposed to circumstantial priorities. Notice that if a subjunctive is embedded under a predicate like *verovati* 'believe', the sentence becomes ungrammatical (e.g. \**Marija veruje da Nikolas dođe*, see also (2-a)). This is because *verovati* has single content, and thus the dual background of the subjunctive cannot be defined (see Portner & Rubinstein 2020). Thus, *verovati* can only combine with indicative complements. As we will see, this dependence on the matrix event has important consequences for the properties of SQs that we investigate below.

<sup>9</sup>Here we completely abstract away from the special presuppositions associated with different prioritizing verbs, e.g. *want*, *wish*, *hope* etc. Under the current proposal these differences should be captured by carefully specifying the content of these predicates. See Portner (2018), Portner & Rubinstein (2020) and Heim (1992), von Stechow (1999), Villalta (2008) for *want* in particular.

<sup>10</sup>The semantics of embedding under a situation analysis of attitudes varies greatly depending on the proposal, with important consequences. For the purposes of the current paper we take this formulation to be enough. For more discussion see Moulton (2009), Elliott et al. (2017), Portner & Rubinstein (2020) i.a.



## 3.2.2 ANTIROGATIVE MATRIX SUBJUNCTIVES

Given the analysis of embedded subjunctives, the question arising for matrix subjunctives as in (3), is how the dual background of the subjunctive operator is supplied. We argue that this happens by anchoring to the matrix utterance event (Oikonomou 2016, Stegovec 2019, Kaufmann et al. 2023). As the examples in (3) show, this can be a directive or a wish utterance.<sup>11</sup> The following example encodes a directive, which can be uttered in a context in which we need hands to help with a move and somebody suggests that Nicolas should come.<sup>12</sup>

- (19) Da Nikolas dođe!  
*da<sub>sbjv</sub>* Nicolas come.PFV.PRS.3SG  
 ‘I recommend/require that Nicolas come.’

Following the syntactic analysis, according to which speech act events are represented in the syntax (e.g. Speas & Tenny 2003 and subsequent works inspired by Ross’s (1970) performative hypothesis), we propose that the derivation of matrix subjunctives is equivalent to that of embedded subjunctives with the crucial difference that in matrix subjunctives there is a covert speech act event with a speaker and the addressee as the participants in the event. In this way, the modality is anchored to the priorities of the speaker. The addressee, by accepting the utterance, commits to this priority as well (see Oikonomou 2016 for related discussion regarding matrix subjunctives in Greek). Crucially, matrix subjunctives convey performative modality similar to imperatives. For a discussion of performativity, assuming a modal analysis, see Kaufmann (2016).

## 3.2.3 ROGATIVE EMBEDDED AND MATRIX SUBJUNCTIVES

Having presented subjunctives in non-interrogative environments, we now come to what remains the primary puzzle of the current paper, namely the source of prioritizing modality in embedded and matrix SQs. As presented above, the subjunctive itself is a modal operator which has its background defined either by the matrix predicate or by the utterance event. However, in the case of interrogatives, the majority of rogative and responsive predicates are not specified for prioritizing modality and yet, they can embed SQs which invariably exhibit prioritizing semantics. We argue that the subjunctive operator in the context of a Question operator is assigned a prioritizing meaning, modelling this context dependency as in (20).

- (20)  $[[\text{SBJV}]] / \text{Q}_- = \lambda f_{\langle \epsilon, st \rangle} \lambda g_{\langle \epsilon, st \rangle} \lambda e \lambda q_{\langle st \rangle} \lambda w. \forall w' \in \text{Best}_{\text{PRT}(f, g, e, w)} \rightarrow q(w')$

Crucially, in the case of questions as well, the event variable of the subjunctive operator is bound by the matrix event, i.e. it will be relativized to the priorities of the questionee at the time *t* of the questioning event.

Our analysis follows Bhatt (1999) who argued for infinitival questions in English (i.e., *I wonder what to do*), that infinitival modality is licensed by the question operator and not by the matrix predicate itself. The present analysis is also in line with the proposal in Grano (2019), that the content of rogative predicates (and as we will see below of several responsive predicates) is underspecified, i.e. they are inquisitive and it is not specified

<sup>11</sup>As noted to us by a reviewer, there is an additional interpretation under which the speaker conveys surprise or disapproval. For example, the sentence *Da tako kasno dođe!* ‘To come that late!’ conveys surprise/disapproval and can be characterized as a mirative/exclamative. Similar uses of the subjunctive have been noted for Greek as well (Rouchota 1994). It goes beyond the scope of the paper to discuss exclamatives, but one possibility, under the current analysis, would be to explore whether an EXCLAM operator could provide the relevant content.

<sup>12</sup>The example in (19) cannot on its own convey a wish. It requires the particle *samo* ‘only’ in order to get a wish-interpretation, i.e. *Samo da Nikolas dođe!* (Grosz 2012). The derivation of the different prioritizing interpretations remains to be explained but see Kaufmann (2012, 2016), Kaufmann et al. (2023) for the distinction between wishes and directives.

whether they inquire for the questionee’s prioritizing or doxastic/epistemic state.<sup>13</sup>

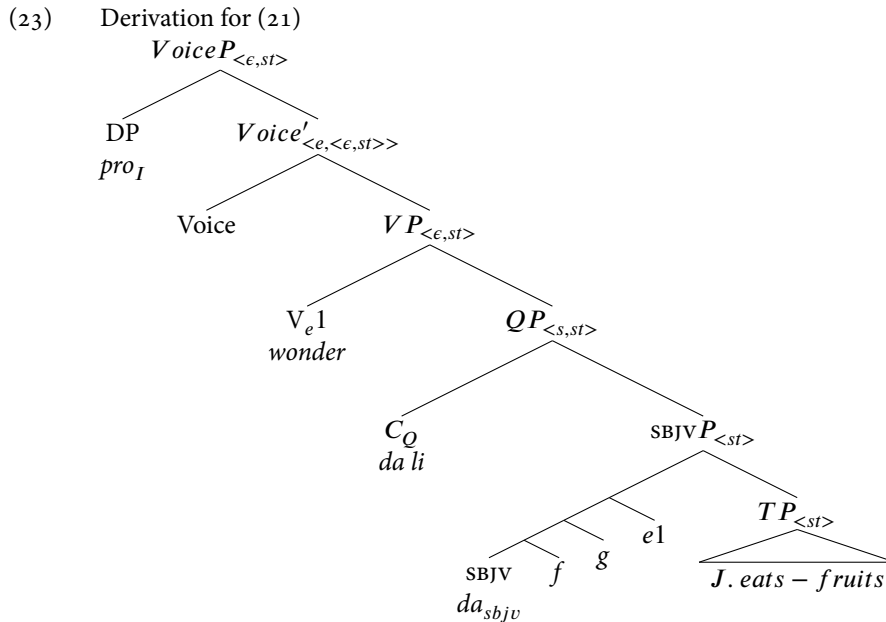
Given these assumptions, let us go through the derivation for an embedded subjunctive question under *pitati se* ‘wonder’ as in (21).

- (21) Pitam se da li da Jovan jede voće.  
 ask.PRS.1SG REFL C Q *da<sub>sbjv</sub>* John eat.IPFV.PRS.3SG fruits  
 ‘I wonder whether John should eat fruits.’

As we discussed in §2, in embedded questions the subjunctive particle *da<sub>sbjv</sub>* obligatorily appears under the question complementizer *da li*. Following Karttunen’s (1977) analysis of questions, we take the question complementizer to be responsible for turning the embedded proposition into a set of propositions, which involves the possible answers (see Hamblin 1973, Karttunen 1977 and Heim 2012, Uegaki 2015 for a particular formulation). In the case of *yes/no*-questions this is two-member set, involving a positive and a negative proposition. This, in turn, is the argument of a question predicate like *pitati se* ‘wonder’ with the meaning in (22). The presupposition part guarantees that at least one of the propositions in Q is true in the evaluation world (Uegaki 2015, Elliott et al. 2017).<sup>14</sup>

- (22)  $[[wonder]] = \lambda Q_{\langle s, st \rangle} \lambda e_e \lambda w_s : \exists p \in Q[p(w)]. WUNDER(Q, e, w)$

As in the case of embedding under *želeti* ‘want’, the event of the matrix predicate binds the event variable of the subjunctive operator. However, in the case of question predicates they do not provide the modal flavor. Instead, the flavor of the subjunctive operator is defined by (20) as prioritizing.



Similar to embedded SQs, matrix SQs are syntactically embedded under a speech act QUEST-operator with interrogative illocutionary force. Unlike the DIR-operator which,

<sup>13</sup>For IQs, Grano (2019) suggests that finite complements in English (i.e. indicative complements) carry an epistemic/informational modal interpretation. This is similar to Portner & Rubinstein’s (2020) analysis of indicative mood as a modal operator with a single background, i.e. a modal base which can be defined as doxastic or epistemic. Although we do not get into details about indicative complements here, we share this assumption, that indicative mood can be analysed on a par with subjunctive as a modal operator, but crucially with a single modal background, i.e. a modal base which can be characterized as doxastic or epistemic depending on the environment it appears in. For detailed discussion see Portner & Rubinstein (2020).

<sup>14</sup>As is the case for different prioritizing predicates, different rogative predicates are also differentiated by further specifying their content and conveying different presuppositions.

as we argued above, embeds matrix non-interrogative subjunctives, the QUEST operator does not have prioritizing content but is underspecified for doxastic/epistemic or prioritizing modality. The meaning assignment rule in (20) works in matrix environments as well. The modal flavor of the subjunctive operator is set to the priorities of the questionee/addressee in the question speech act event. The event variable of the subjunctive operator is anchored by the utterance event, guaranteeing that the questioner asks for information regarding the prioritizing state of the questionee at the time *t* of the utterance (i.e. the utterance time). As we mentioned in §2.1, there is an additional component in the interpretation of SQs that the questioner is responsible for taking action regarding the content of the question. We will discuss this component in the next section, after we present in further detail the distribution of SQs.

A welcome prediction of this analysis is that all rogative predicates can combine with either a SQ or an IQ. This seems to be confirmed in Serbian. All rogative predicates that we have investigated (i.e. *pitati se* ‘wonder’, *pitati* ‘ask’, *ispitivati* ‘investigate’, *biti znatiželjan* ‘be curious’, *razmisliti* ‘ponder’) are compatible with both IQs and SQs. Bhatt (1999) reports *investigate* as being incompatible with an infinitival question in English, but (24-a) shows that the predicate *ispitivati* ‘investigate’ can combine with a SQ in Serbian. Although the indicative complement in (24-b) is more neutral, (24-a) is also considered acceptable by the native speakers we have consulted, suggesting that in a question environment subjunctive modality is always accommodated.

- (24) a. Ispitivala sam koju vakcinu da prime deca.  
 investigated AUX which vaccine *da<sub>sbjv</sub>* get.PFV.PRS.3PL children  
 ‘I investigated which vaccine the children should get.’  
 b. Ispitivala sam koju vakcinu treba da prime deca.  
 investigated AUX which vaccine should *da<sub>sbjv</sub>* get.PFV.PRS.3PL children  
 ‘I investigated which vaccine the children should get.’

Crucially, in line with our analysis, we find predicates which cannot embed a non-interrogative subjunctive, but can combine with a SQ.<sup>15</sup> Below we present a non-exhaustive list of such predicates.

- (25) Predicates which embed SQs but no Non-interrogative subjunctives: *znati* ‘know’, *biti svestan* ‘be aware’, *setiti se* ‘recall’, *sećati se* ‘remember’, *zaboraviti* ‘forget’, *primetiti* ‘notice’, *otkriti* ‘find out’, *pronaći* ‘discover’, *shvatiti* ‘realise’, *razmatrati* ‘consider’, *raspravljati* ‘debate’, *promišljati* ‘deliberate’, *uznemiriti se* ‘fret about’, *učiti* ‘study’, *pogađati* ‘guess’, *predvideti* ‘predict’, *kladiti se* ‘bet on’, *proceniti* ‘estimate’, *lagati* ‘lie’, *pretpostaviti* ‘assume’

Although we claim that if a predicate can embed a question, it licenses both IQs and SQs, we must notice that, in certain cases, there are restrictions on the type of SQ that is compatible. For example, predicates like *lagati* ‘lie’ and *pretpostaviti* ‘assume’ typically combine with an indicative. However in a question environment, they can marginally be accepted with a SQ in the right context (e.g. *Pretpostavljam gde da se sakrijemo - I assume where we should hide (so no one can find us)*). In addition we notice that, similar to what Bhatt (2006) notices for infinitival questions in English, *kako/how*-SQs are more productive with certain predicates (e.g. *učiti* ‘study’, *otkriti* ‘find out’, *pronaći* ‘discover’, *shvatiti* ‘realise’, *pogađati* ‘guess’) than other types of *wh*- or *yes/no*-questions.

Likewise, there are a few predicates which take a SQ and seem to be specified for

<sup>15</sup>Notice that certain verbs in (25) are compatible with a non-indicative *da*, but this is not the subjunctive *da* associated with prioritizing semantics that we discuss here. For example, *znati* ‘know’ typically takes a *da*-complement to express the abilitative reading (i.e. *Znam da plivam* ‘I know to swim’). In this set of examples, in which the matrix subject is in an obligatory control relation with the embedding subject, *da*-complements have been shown to differ both from indicative and from subjunctive complements in terms of their syntax and semantics (Progovac 1993, Todorović & Wurmbbrand 2020, Sočanac 2017, Wurmbbrand et al. 2020).

prioritizing content, like *savetovati* ‘advise’ in (26). In this case an IQ would be possible only if we add a prioritizing modal like *treba* ‘should’, due to the lexical restrictions imposed by the verb (see also (13-b) above).

- (26) Trener ih savetuje šta da jedu pre trke.  
 coach 3PL.ACC advise.PRS.3SG what *da<sub>sbjv</sub>* eat.PRS.3PL before race  
 ‘The coach advises them what they should eat before the race.’

### 3.3 DERIVING THE RESPONSIBILITY REQUIREMENT OF SQS

Our analysis derives the meaning of SQs as the result of subjunctive mood functioning as a prioritizing modal operator anchored to the matrix event (in the case of matrix SQs the speech act event). However, there is a major semantic difference between an IQ with an overt prioritizing modal and an SQ which has not been emphasized enough throughout the paper. SQs are felicitous only if the Q-er has at least partial responsibility and intention over fulfilling the prejacent. To illustrate, (27-a) is felicitous if uttered by the director, the designer or in general a person involved, directly or indirectly responsible for the performance. It doesn’t matter if the person to whom the question is addressed (Q-ee) is responsible at all for the type of costumes. For example, the addressee can be the producer or the stage manager, but it can also be a friend of the director or somebody that sits next to the questioner in the train. Of course, the roles of the Q-er and the Q-ee might affect the way we understand the question, i.e. it is likely that if the costume designer asks the stage manager or the producer the question in (27-a), they ask for instructions rather than just an opinion. On the other hand, if the producer asks a friend, most probably it is interpreted as weak advice rather than an instruction. Crucially, however, the role of the Q-ee does not affect the felicity conditions of a SQ. What matters is that the Q-er has at least partial responsibility and intention in taking action regarding the content of the question. For instance, the question in (27-a) is entirely infelicitous if asked by the producer’s friend to the producer, if their friend is not involved in any way in the performance. By contrast, an IQ as in (27-b) with an overt prioritizing operator (i.e. a modal auxiliary or an attitude predicate) is felicitous.

- (27) a. Šta da obuku balerine?  
 what *da<sub>sbjv</sub>* wear.PFV.PRS.3PL ballerinas  
 ‘What should ballerinas wear?’  
 b. Šta treba/ želiš da obuku balerine?  
 what should/ want.PRS.2SG *da<sub>sbjv</sub>* wear.PFV.PRS.3PL ballerinas  
 ‘What should ballerinas wear?’

We call this restriction the *Questioner’s Responsibility Requirement* (QRR). Notice that although QRR is more apparent in matrix environments it also pertains in embedded ones. The sentence in (28) is incoherent without the overt modal *treba* if there is a continuation *but I’m not going to*. This is because, in order to use the plain SQ, the matrix subject (i.e. the Q-er) must have an intention of fulfilling the prejacent (i.e. *read something*).

- (28) Saznala sam šta #(treba) da pročitamo za ispit.  
 find-out.PTCP.3SG.F AUX.1SG what should *da<sub>sbjv</sub>* read.PFV.PRS.1PL for exam  
 ‘I found out what to read for the exam, #but I’m not going to.’

Similarly if we embed the sentence in (27-a) under a matrix predicate like *wonder* we derive the inference that the subject is at least partially responsible for fulfilling the prejacent. Thus, the sentence in (29) without *treba* is infelicitous if Petar is not involved in the performance. The sentence is fine with the overt modal auxiliary. It can simply mean that Peter is wondering about what ballerinas are supposed to wear, i.e. wondering about the rules or the customs, just out of curiosity.

- (29) Petar se пита šta #(treba) da obuku balerine.  
 Peter REFL wonder.PRS.3SG what should *da<sub>sbjv</sub>* wear.PFV.PRS.3PL ballerinas  
 ‘Peter wonders what the ballerinas should wear.’

We argue that the QRR can be derived under two basic aspects of our account. First, the modal operator is relativized to the matrix event  $e'$ , which means that the question always concerns the priorities of the Q-ee in  $e'$  at the time  $t$  of  $e'$ . Second, and most important, the meaning of questions is the set of possible answers. This is where SQs are differentiated from IQs. The answer to an IQ is a declarative whereas the answer to a SQ is a directive. In both cases, the question denotes a set of propositions. However, the answer to a SQ involves the set of propositions embedded under a directive illocutionary operator whereas the answer to an IQ involves the set of possible answers under an assertive illocutionary operator. The properties of the directive illocutionary operator are the key to our understanding for the QRR.

Many different accounts have been proposed to capture the update effect of directives (Condoravdi & Lauer 2012, Portner 2007, Schwager 2006, Kaufmann 2016, Truckenbrodt 2006). The QRR associates with a primitive characteristic of directives that the addressee of a directive, once they accept it, is committed to act to fulfill its content. For example, for the following subjunctive in (30) we understand that the addressee must act so that the content of the directive is fulfilled (see Kaufmann et al. 2023 for a detailed discussion on this for Serbian subjunctives). As long as the addressee accepts the directive, they will only be true to their world if they try to fulfil its content (cf. Portner 2007, Condoravdi & Lauer 2012).

- (30) Da balerine obuku bele kostime.  
*da<sub>sbjv</sub>* ballerinas wear.PFV.PRS.3PL white costumes  
 ‘The ballerinas should wear white costumes.’

Thus, the QRR is captured by whichever mechanism captures the restriction that in directives the addressee (i.e. the Q-er of a SQ) must take action. For example, Kaufmann (2016) explains this property as an outcome of having *decisive modality*, presupposing that there is a decision problem for the *addressee* on which the addressee needs to act. If subjunctive encodes *decisive modality* in both matrix and embedded environments, then we can understand why SQs have the QRR effect in all environments. This is something to further explore in future work.

#### 4 CONCLUDING REMARKS AND OPEN QUESTIONS

In this paper, we discussed SQs in Serbian which provide evidence for an analysis of subjunctive mood as a modal operator. Following Portner & Rubinstein’s work, we argued that the flavor of the subjunctive operator is supplied by the embedding predicate or the matrix speech act event. However, in the case of question predicates which are not specified for prioritizing flavor, we argued that the subjunctive modality is specified as prioritizing in the context of a question via a meaning assignment rule.

The productivity of SQs in many Balkan languages favors approaches of imperatives and matrix subjunctives as modalized propositions (Schwager 2006, Kaufmann 2012, Stegovec 2019, Oikonomou 2016, Kaufmann et al. 2023) since in this way we can achieve a unified account for the subjunctive in questions and in directives (cf. Portner 2007, Barker 2012 a.o.).

Several questions emerge from this analysis. First, there is an additional type of SQs which does not have prioritizing flavor. This type of SQs expresses the speaker’s epistemic uncertainty and is more introspective in the sense that it does not necessarily require an answer from the addressee. We call them *Epistemic SQs* (Giannakidou 2009). In Serbian, Epistemic SQs are possible only if there is negation, as illustrated below.

- (31) Da ni-je Marija otišla?  
*da<sub>sbjv</sub>* NEG-AUX.3SG Maria leave.PFV.PST.PTCP.3SG.F  
 ‘Is it possible that Maria left?’ / ‘I wonder... did Maria left?’

Epistemic SQs are also attested in other languages (e.g. Greek, Romanian). Giannakidou (2009) analyses the subjunctive in Greek epistemic SQs as a possibility modal. Under the current analysis, this would mean that subjunctive is ambiguous. A different path to follow, consistent with our proposal, would be to enrich the system with additional rules, granting that we can provide evidence that Q can surface with distinct features. In this case, we move towards an allosemy account for the subjunctive operator. Something to explore in future work.

Second, several crosslinguistic puzzles emerge regarding the type of SQs allowed across languages. Within the set of languages that license SQs, we notice that there is a difference in the force of modality. In contrast to the picture in Serbian, SQs in Greek are productively used to ask for permission, i.e. in a context in which the questioner needs to make a phone-call and asks a shopkeeper for permission, the SQ in (32) is perfectly fine. In Serbian, this is not possible (i.e. \**Da telefoniram?* ‘Can I make a phone-call?’) (see Footnote 8). Based on our research, Bulgarian and Romanian pattern with Serbian in not allowing permission SQs.

- (32) Na paro ena telefono? Greek  
 SBJV take.1SG a phone-call?  
 ‘Can I make a phone-call?’

Another difference among Balkan languages is the licensing of embedded *yes/no*-SQs. In Greek, a *yes/no*-SQ cannot be embedded with the typical complementizer *an*. This may be a morphosyntactic restriction rather than a semantic one, but understanding this restriction in Greek may help us understand a broader crosslinguistic puzzle which is the last to present here.

Comparing Balkan languages with Western Romance languages, we notice that SQs are entirely absent from the latter. Given that subjunctive mood has been analysed in similar ways for Balkan and Romance languages (see e.g. Farkas 1992, Giannakidou & Mari 2021, Sočanac 2019), it remains to be understood what prevents SQs from occurring in Western Romance languages. One possible line of explanation could be that after all, subjunctive is semantically different in the two types of languages. It is not necessary for subjunctive mood to function the same way in different languages. A different path, related to the lack of embedded *yes/no*-SQs in Greek, may be a difference in the syntax of subjunctive complements and their interaction with the matrix predicate in the different types of languages. In relation to this, it is important to notice that infinitival questions, similar to English, are available in Romance languages. All in all, SQs cross-linguistically present a yet to be explored territory which can further illuminate our theories of subjunctive mood as well as the properties of interrogatives.

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**ABBREVIATIONS**

1	first person	PFV	perfective
2	second person	PL	plural
3	third person	PRS	present tense
ACC	accusative	PST	past tense
AUX	auxilliary	PTCP	participle
C	complementizer	REFL	reflexive
F	feminine	Q	question particle
DAT	dative	QRR	questioner's responsibility require- ment
IND	indicative	SBJV	subjunctive
IPFV	imperfective	SG	singular
IQ	indicative question	SQ	subjunctive question
NEG	negation		

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