

Coordinated wh-questions: A response to Bošković (2022)

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ABSTRACT

Bošković (2022) challenges the claim from Citko & Gračanin-Yuksek (2013) that mono-clausal Coordinated Wh-Questions (mCWHs) and multiple wh-questions without coordination are derived through the same mechanism: multiple wh-fronting. This claim predicts that the two constructions behave the same with respect to superiority, which Bošković calls into question. We show that the analysis of Coordinated Wh-Questions in Citko & Gračanin-Yuksek (2013) does derive the parallelism between the two constructions with respect to superiority with one additional assumption: that the sideways movement of wh-phrases happens late in the derivation. This assumption also derives the sensitivity of mCWHs to islands. We also present some empirical challenges for Bošković's analysis.

KEYWORDS coordinated wh-questions · multiple wh-fronting · islands · superiority

1 INTRODUCTION

In this paper, we contrast two accounts of wh-questions with coordinated wh-phrases in Slavic languages: Citko & Gračanin-Yuksek (2013) and Bošković (2022). For the sake of brevity, we will refer to such questions, illustrated in (1), as coordinated wh-questions (CWHs):

- (1) a. **Što i zašto** si mu popravio? Bosnian/Croatian/Montenegrin/Serbian
what and why are him fixed
Lit. 'What and why did you fix for him?'
b. **Kdo a kdy** napsal tu knihu? Czech
who and when wrote that book
Lit. 'Who and why wrote that book?'
c. **Kto i co** zradio? Polish
who and what did
Lit. 'Who and what did?'
d. **Čto i kogda** oni podarili? Russian
what and when they gave
Lit. 'What and when did they give?' (Gribanova 2009: 134)

The main difference between the two accounts concerns the relationship between multiple wh-fronting (MWF) and mono-clausal CWHs. In Citko & Gračanin-Yuksek (2013) (henceforth CGY 2013), we link the availability of mono-clausal CWHs to the availability of MWF. Here, we extend this proposal to account for the presence of mono-clausal CWHs in wh-in-situ languages. First, however, we summarize our 2013 account (§2), in which the mono-clausal structure is only one of the three possible structures for CWHs. In §3, we summarize Bošković's (2022) proposal and contrast it with ours. In §4, we discuss the problems that Bošković raises for our analysis, involving superiority effects in mono-clausal CWHs and their behavior with respect to island effects, and show how we can handle these problems. And finally, in §5, we turn to the predictions that Bošković's analysis makes and raise some empirical issues for it.

2 CITKO & GRAČANIN-YUKSEK'S (2013) ANALYSIS OF CWHs

Broadly speaking, CWHs have been analyzed in two different ways (see Gračanin-Yuksek 2017 for a comprehensive, handbook-style overview). On some accounts (Gribanova 2009, Haida & Repp 2011, Kazenin 2002, Merchant 2007, Skrabalova 2006, Zhang 2007, among others), CWHs involve a mono-clausal structure, shown in (2-a), in which the wh-phrases originate inside the same clause and coordination is between the two (or more) wh-phrases. On bi-clausal accounts (Bánréti 1992, Browne 1972, Giannakidou & Merchant 1998, Sinopoulou 2009, 2020, Whitman 2002, among others), coordination is between two (or more) CPs, and a single wh-phrase undergoes wh-movement in each CP, as shown in (2-b).

- (2) a. $[_{CP} \text{ wh}_1 \& \text{ wh}_2 [_{TP} \dots \text{wh}_1 \dots \text{wh}_2]]$
 b. $[_{CP} \text{ wh}_1 [_{TP} \dots \text{wh}_1 \dots]] \& [_{CP} \text{ wh}_2 [_{TP} \dots \text{wh}_2 \dots]]$

In CGY (2013), we combined the insights of both types of accounts in that we posited three structures for CWHs: one mono-clausal and two bi-clausal ones, given in (3).

- (3) a.
-
- b.
-
- c.
-

In some languages, like Polish or Bosnian/Croatian/Montenegrin/Serbian (BCMS), all three structures are in principle available, whereas in others, like English, only one is. We used the diagnostics listed in (4) to determine which of the three structures a given language allows.

- (4)
- a. availability of multiple wh-fronting
 - b. behavior of CWHs vs. multiple wh-questions (MWHs) with respect to superiority effects
 - c. ability to coordinate two argument wh-phrases in a CWH
 - d. compatibility of CWHs with obligatorily transitive verbs (i.e., the ability to coordinate a direct object wh-phrase with an adjunct wh-phrase in a CWH involving an obligatorily transitive verb)

The mono-clausal structure, given in (3-a), is available in multiple wh-fronting languages like BCMS, Bulgarian, Czech, or Russian. We adopt Zhang's (2007, 2010) derivation, in which the two wh-phrases start out non-coordinated in their selected positions, undergo so-called sideward movement to merge with the conjunction head, and the Conjunction Phrase containing the two coordinated wh-phrases merges in [Spec CP]. Since the two wh-phrases start inside the same TP, this structure predicts that coordination of argument wh-phrases should be possible, and that it should be possible to coordinate a complement wh-phrase with an adjunct one if the verb is obligatorily transitive. Both of these predictions are confirmed for Polish. The attested examples in (5-a)-(5-b) show that it is possible to coordinate a direct and an indirect object, or a subject and an object. And the grammaticality of (6-a), contrasted with the ungrammaticality of (6-b), shows that the thematic and subcategorization requirements of an obligatorily transitive verb are satisfied in a CWH if one of the wh-phrases is an obligatory internal argument.

- (5)
- a. Co i komu oddać? Polish
 what and whom return.INF
 Lit. 'What and to whom should one return?'
 - b. Kto i co ugotuje ci na obiad?
 who and what will.cook you for dinner
 Lit. 'Who and what will make you for dinner?' (Google)
- (6)
- a. Co i kiedy Jan naprawił?
 what and when Jan fixed
 Lit. 'What and when did Jan fix?'
 - b. *Kiedy Jan naprawił?
 when Jan fixed
 Lit. 'When did Jan fix?'

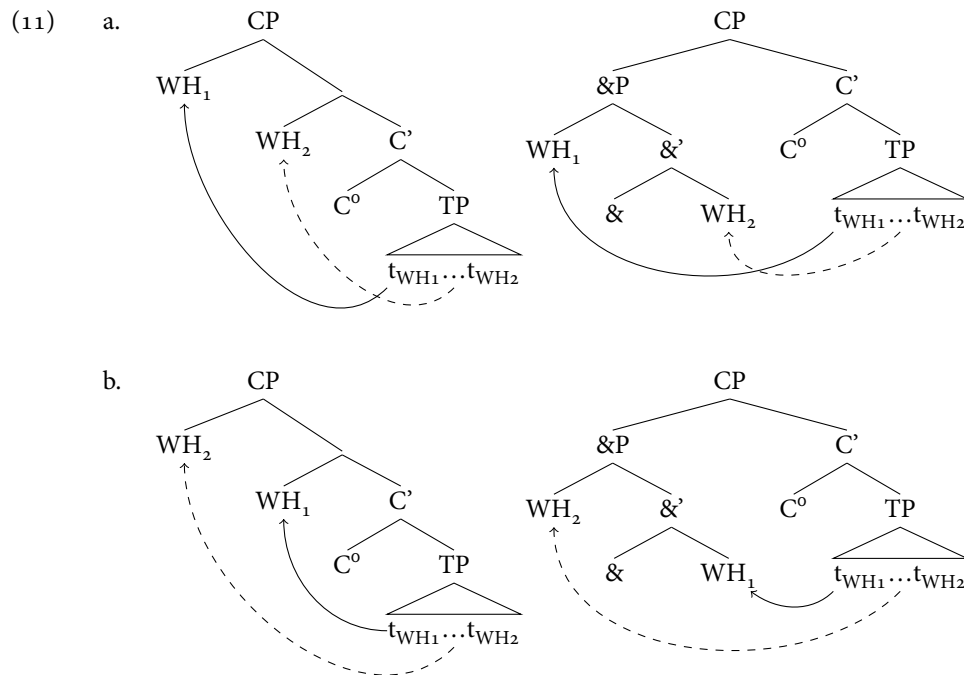
Furthermore, the grammaticality of either order of fronted wh-phrases in both MWHs and CWHs, illustrated in (7) – (8), shows that neither MWHs nor CWHs obey superiority.

- (7)
- a. Co komu oddać? MWH
 what whom return.INF
 Lit. 'What to whom should one return?'
 - b. Komu co oddać?
 whom what return.INF
 Lit. 'To whom what should one return?'
- (8)
- a. Co i komu oddać? CWH
 what and whom return.INF
 Lit. 'What and to whom should one return?'
 - b. Komu i co oddać?
 whom and what return.INF
 Lit. 'To whom and what should one return?'

In a language with mono-clausal CWHs, we expect MWHs and CWHs to behave the same way with respect to superiority. If a language allows violations of superiority in MWHs, it will also allow violations of superiority in CWHs. This is what we have just seen in Polish. And if a language obeys superiority in MWHs, it will also obey superiority in CWHs. This is the behavior of Bulgarian, illustrated in (9) and (10).¹

- (9) a. Koj koga šte si hodi v Bulgaria? Bulgarian
 who when will REFL go in Bulgaria
 ‘Who is going to Bulgaria when?’
 b. *Koga koj šte si hodi v Bulgaria?
 when who will REFL go in Bulgaria
 Lit. ‘When is who going to Bulgaria?’
- (10) a. Koj i koga šte si hodi v Bulgaria?
 who and when will REFL go in Bulgaria
 Lit. ‘Who and when is going to Bulgaria?’
 b. *Koga i koj šte si hodi v Bulgaria?
 when and who will REFL go in Bulgaria
 Lit. ‘When and who is going to Bulgaria?’

We derive the presence (or absence) of superiority effects in both multiple wh-questions and mono-clausal CWHs from the properties of wh-paths in both constructions: crossing paths yield superiority obeying orders, as shown in (11-a), and nesting paths yield superiority violating orders, as shown in (11-b) (Pesetsky 1982, Richards 1997).



The second structure in CGY (2013), originally due to Gračanin-Yuksek (2007), is the so-called bi-clausal non-bulk sharing structure, given in (3-b). In this structure, every node except the ones dominating the wh-phrases is shared between the two CP conjuncts (hence the term non-bulk sharing). Since there is only one instance of wh-movement per CP, this structure is available both in languages with MWF and without MWF, and it

¹As we note in CGY (2013: fn. 21), not all speakers of Bulgarian find a contrast between (10-a) and (10-b). Our analysis focused on the speakers that do.

predicts no superiority effects in CWHs. Since the two *wh*-phrases are in two different clauses (and the selectional requirements of the shared predicate should be satisfied in each clause), this structure predicts that CWHs should be impossible with two argument *wh*-phrases, as well as with obligatorily transitive verbs if only one of the *wh*-phrases is a direct object. And this is precisely what we find in English CWHs, as shown in (12)–(15).² The contrast between (12) and (13) shows that CWHs, unlike MWHs, do not have to obey superiority. (14) shows that it is impossible to coordinate argument *wh*-phrases, and the contrast between (15-a) and (15-b) shows that it is impossible to coordinate a direct object with an adjunct *wh*-phrase in CWHs with obligatorily transitive verbs like *devour*, while it is possible to do so when the verb is optionally transitive like *eat*.

- (12) a. ??What did you teach why?
b. Why did you teach what?
- (13) a. What and why did you teach?
b. Why and what did you teach?
- (14) *What and to whom did John give?
- (15) a. *What and why did you devour?
b. What and why did you eat?

And the third structure we argued for, following Rațiu (2011), was the bi-clausal bulk-sharing structure, given in (3-c) above. This structure is only available in multiple *wh*-fronting languages (for reasons we discuss in §4 below). This structure predicts no superiority effects in CWHs, since each *wh*-phrase moves to its own CP specifier. It also predicts that coordination of two argument *wh*-phrases should be possible, and that obligatorily transitive verbs should be allowed with a *wh*-object. This is the behavior of Romanian CWHs, as shown in (16)–(19).

- (16) a. Cine ce a văzut? Romanian
who what has seen
b. *Ce cine a văzut?
what who has seen
'Who saw what?' (Comorovski 1996: 2-3)
- (17) a. Cine și ce ti-a spus?
who and what to.you-has told
b. Ce și cine ti-a spus?
what and who to.you-has told
'Who told you something and what was it?' (Comorovski 1996: 135)
- (18) Cui și ce i-ai dat?
to.whom and what to-him you.have.given
'What did you give and to whom?' (Comorovski 1996: 135)
- (19) Cine și ce a cumpărat?
who and what has bought
'Who bought something and what was it?'

3 BOŠKOVIĆ'S (2022) ACCOUNT

Bošković's analysis of CWHs, which he refers to as *wh&wh* coordinations, shares some aspects of CGY's (2013) analysis, but also differs from it in a number of ways. Bošković focuses on mono-clausal CWHs, so our comparison of his account to ours will also focus on mono-clausal CWHs. Both accounts rely on sideward movement, essentially adopting Zhang's 2007 insight (see also Haida & Repp 2011).

²Sinopoulou (2009, 2020) argues that Greek CWHs involve the same structure.

Bošković starts with the observation that CWHs in BCMS, unlike MWHs, are subject to superiority. Thus, he disagrees with our claim, discussed in the previous section, that mono-clausal CWHs parallel MWHs with respect to superiority.

- (20) a. Ko šta kupuje? MWH
 who what is-buying
 ‘Who is buying what?’
 b. Šta ko kupuje?
 what who is-buying
 ‘Who is buying what?’ (Bošković 2022: 2)
- (21) a. Ko i šta kupuje? CWH
 who and what is-buying
 Lit. ‘Who and what buys?’
 b. *Šta i ko kupuje?
 what and who is-buying
 Lit. ‘What and who buys?’ (Bošković 2022: 2-3)

Bošković further reports that superiority effects hold only for mono-clausal CWHs. CWHs in which the first wh-phrase or both wh-phrases are followed by an auxiliary clitic are not subject to superiority, as shown in (22). Such CWHs, according to Bošković, are necessarily bi-clausal.³

- (22) a. Ko je i šta (je) kupio?
 who is and what is bought
 Lit. ‘Who and what bought?’
 b. Šta je i ko (je) kupio?
 what is and who is bought
 Lit. ‘What and who bought?’ (Bošković 2022: 3)

Bošković takes this as evidence that the derivations of mono-clausal CWHs and MWHs must be different, and that the availability of mono-clausal CWHs in a language cannot be tied to the availability of multiple wh-fronting, contra CGY (2013). Bošković (2022) thus refutes the claim made in CGY that mono-clausal CWHs are derived through MWF and that languages without MWF don’t have such CWHs. Instead, he takes the availability of an indeterminate system to be “a prerequisite for the coordination in question” (Bošković 2022: 5), where an indeterminate system is what Haspelmath (1997: 31) refers to as “interrogative-based indefinites”: a system of indefinites (universal quantifiers, negative polarity items, free-choice items, etc.) derived from interrogative pronouns. English differs from languages like BCMS or Bulgarian in that it does not have an indeterminate system, as shown in Table 1.⁴

	interrogative	existential	NPI	negative	universal
person	who	some-one	any-one	no-one	every-one
thing	what	some-body	any-body	no-body	every-body
place	where	some-thing	any-thing	no-thing	every-thing
time	when	some-where	any-where	no-where	every-where
manner	how	some-time	any-time	never	every time
which	which	some-how	any-how	no way	every way
		some	any	no	every

Table 1: English

³He also takes prosody to be a possible disambiguating factor.

⁴Instead, English indefinite system is “generic-noun-based” (Haspelmath 1997: 32), where indefinites are derived from general ontological-category nouns, such as *person*, *thing*, *place*, etc.

Slavic languages, on the other hand, have a more specific type of indeterminate system, which Bošković refers to as “a sub-wh-system”, defined as “a fully productive system where addition of an inseparable affix to a wh-phrase results in a series of meanings” (Bošković 2022: 6). Given that a sub-wh-system is a type of an indeterminate system, it is not surprising that MWF languages also have mono-clausal CWHs. A language that has a sub-wh-system, according to Bošković, may have both MWF and mono-clausal CWHs or just one of the two.⁵ Tables 2 and 3, adapted from Haspelmath (1997), show the indeterminate systems of BCMS and Polish.

	interrogative	existential	neg-concord	NPI	universal
person	(t)ko	ne-(t)ko	ni-(t)ko	i-(t)ko	sva-(t)ko
thing	šta/što	ne-što	ni-šta	i-šta	sva-šta
place	gd(j)e	ne-gd(j)e	ni-gd(j)e	i-gd(j)e	sva-gd(j)e
time	kad	ne-kad	ni-kad	i-kad	*sva-kad
manner	kako	ne-kako	ni-kako	i-kako	sva-kako
what.kind.of	kakav	ne-kakav	ni-kakav	i-kakav	sva-kakav
which	koji	*ne-koji	*ni-koji	*i-koji	*sva-koji

Table 2: Bosnian/Croatian/Montenegrin/Serbian

	interrogative	existential	neg-concord	free choice
person	kto	kto-ś	ni-kt	kto-kolwiek
thing	co	co-ś	ni-c	co-kolwiek
place	gdzie	gdzie-ś	ni-gdzie	gdzie-kolwiek
time	kiedy	kiedy-ś	ni-gdy	kiedy-kolwiek
manner	jak	jako-ś	ni-jak	jak-kolwiek
what.kind.of	jaki	jaki-ś	*ni-jaki	jaki-kolwiek
which	który	który-ś	*ni-który	który-kolwiek

Table 3: Polish

In order to derive superiority effects in mono-clausal CWHs, Bošković modifies the timing of Zhang’s sideways movement analysis; the wh-phrase that enters the derivation first has to be merged with *and* as soon as possible; crucially, before the second wh-phrase is introduced (Bošković 2022: 8). To illustrate, the derivation of the Polish example in (23) proceeds along the steps given in (24), illustrated with English glosses for the sake of clarity.⁶

- (23) Kto i co kupił? Polish
 who and what bought
 Lit. ‘Who and what bought?’
- (24) a. Merge *bought* and *what*:
 [_{VP} bought what]
 b. Sideward Merge *what* with *and*:
 [_{ConjP} and what]
 c. Merge *v* with [_{VP} bought ~~what~~]:
 [_{vP} v bought ~~what~~]
 d. Merge *who* with [_{vP} v bought ~~what~~]:
 [_{vP} who v bought ~~what~~]

⁵The reason is that bare wh-phrases cannot be licensed in situ, so they have to front.

⁶To Bošković’s derivation, we added the steps in (24f-i), which might alternatively proceed as follows: *who* might move to [Spec TP] to check the EPP feature on T before it sideward moves to form the specifier of ConjP. In that case, the derivationally formed ConjP would be merged directly into [Spec CP].

- e. Sideward Merge *who* with [_{ConjP} and what]:
[_{ConjP} *who* and what]
- f. Merge T with [_{VP} ~~who~~ *v* bought ~~what~~]:
[_{TP} T [_{VP} ~~who~~ *v* bought ~~what~~]]
- g. Merge [_{ConjP} *who* and what] with TP:
[_{TP} [_{ConjP} *who* and what] [_{T'} T [_{VP} ~~who~~ *v* bought ~~what~~]]]
- h. Merge C with TP:
[_{CP} C [_{TP} [_{ConjP} *who* and what] [_{T'} T [_{VP} ~~who~~ *v* bought ~~what~~]]]]]
- i. Internally Merge [_{ConjP} *who* and what] with CP:
[_{CP} [_{ConjP} *who* and what] C [_{TP} [_{ConjP} ~~who and what~~] [_{T'} T [_{VP} ~~who~~ *v* bought ~~what~~]]]]]

This ensures that the lower wh-phrase (the wh-phrase introduced into the structure first) necessarily becomes the complement of *and*, while the higher one becomes its specifier; this in turn guarantees that the superiority-obeying word order is preserved. However, Bošković also proposes that mono-clausal CWHs can only involve wh-phrases that are movable in principle, and that the wh-phrases “need to undergo a step of regular movement prior to sideward merger into the derivationally formed ConjP” (p. 9).⁷ It is not clear to us though where wh-phrases move, and what this means for the derivation of simple mono-clausal CWH cases, such as the one in (23) above: If both *who* and *what* need to move upwards before sideward merging with the conjunction, the lower wh-phrase – *what* – needs to move both upwards and sideways before the higher one – *who* – is introduced into the structure, and then *who* needs to move upwards before it moves sideways. If *what* fails to move sideways before *who* is introduced, superiority-obeying word order in ConjP is not guaranteed. While a derivation along these lines is conceivable (*what* might move to [Spec VP] or [Spec vP], then move sideways before *who* is introduced into [Spec vP]; *who* then moves to [Spec TP] before it sideward moves to ConjP), we do not see what forces this particular sequence, other than the need to derive the superiority effects.

4 RESPONSE TO BOŠKOVIĆ’S CRITICISM OF CGY (2013)

The main criticism that Bošković (2022) raises against the CGY’s (2013) analysis of CWHs concerns the claim made by CGY (2013) that multiple wh-fronting (MWF) is implicated in the derivation of mono-clausal CWHs. Bošković correctly observes that under the Zhang (2007, 2010) sideways movement analysis of mono-clausal CWHs, which both

⁷The reason Bošković proposes this has to do with his empirical observation that run-of-the-mill wh-questions and mono-clausal CWHs are subject to the same constraints in so-called deep left-branch extraction environments. The contrast in (ia-b) shows that structurally marked wh-complements cannot be moved but inherently case marked ones can.

- (i) a. *Kakvih_i je vidio vlasnike [_{NP} t_i kuća]?
what-kind-of.GEN is seen owners houses.GEN
‘What kind of houses did he see owners of?’
b. ?Čijem_i je podržao otpor [_{NP} t_i kongresu]?
whose.DAT is supported resistance congress.DAT
‘Whose congress did he support resistance to?’ (Bošković 2022: 9)

Bošković reports a similar contrast in mono-clausal CWHs:

- (ii) a. *Kakva_i i čije_j je [t_i djevojka] vidjela podstanara [_{NP} t_j kuće]?
what-kind-of.NOM and whose.GEN is girl.NOM seen tenant house.GEN
‘What kind of a girl saw a tenant of whose house?’
b. ??Kakva_i i čijem_j je [t_i djevojka] podržala otpor [_{NP} t_j kongresu]?
what-kind-of.NOM and whose.DAT is girl.NOM supported resistance congress.DAT
‘What kind of a girl supported resistance to whose congress?’ (Bošković 2022: 9)

2007, 2010, Jung 2018). Examples (26) show that in Korean, wh-phrases in MWHs may occupy sentence medial and sentence initial positions. And examples (27) show that wh-phrases in CWHs can occupy the same positions.

- (26) a. Swunhi-nun nuku-eke muoss-ul chuoss-ni? Korean
 Swunhi-TOP who-DAT what-ACC gave-Q
 Lit. 'Who did Swunhi give what?'
 b. Nuku-eke muoss-ul Swunhi-nun chuoss-ni?
 who-DAT what-ACC Swunhi-TOP gave-Q
 Lit. 'To whom what did Swunhi give?' (Kang 2005: 127-128)
- (27) a. John-un nwukwu-lul kuliko encey kefishop-eyse manna-ess-ni?
 John-TOP whom-ACC and when coffeeshop-at meet-PST-Q
 Lit. 'Whom and when did John meet at a coffee shop?'
 b. Nwukwu-lul kuliko encey John-un kefishop-eyse manna-ess-ni?
 whom-ACC and when John-TOP coffeeshop-at meet-PST-Q
 Lit. 'Whom and when did John meet at a coffee shop?' (Jung 2018: 117)

Example (28) shows that the same is true of Chinese. Zhang (2007: 2144-2145) notes that the coordinate complex can follow the subject, which is "generally recognized [as] a possible interrogative/focus/topic-operator position in the language."

- (28) Ni shenme-yao (yiji) zai shenme-shihou meitian dou chi? Chinese
 you what-medicine and at what-time everyday all eat
 'What medicine and when do you take every day?' (Zhang 2007: 2144)

So, even though our claim in CGY (2013) that mono-clausal CWHs can only be derived through MWF does not predict these facts, our original insight that CWHs and MWHs involve the same derivational mechanism, be it MWF or multiple wh-scrambling, remains valid. Similarly, the prediction that we make: that a language will have mono-clausal CWHs as long as it has a mechanism that allows extraction of multiple wh-phrases from the same νP , still holds.

The proposal that the coordination of wh-phrases happens late in the derivation of mono-clausal CWHs also explains why island effects are present in such CWHs, another point that Bošković raises against our (2013) analysis. Bošković correctly points out that in a CWH like (29), island effects are predicted to be obviated if the two wh-phrases undergo sideward movement from their thematic positions and if the derivationally formed ConjP is merged directly into the final landing site.⁹ As shown in (29), this is not the case – the CWH is ungrammatical because of an island violation. However, if the wh-phrases remain uncoordinated until the very end of the derivation, as we maintain is the case, their movement from the embedded adjunct clause would incur an island violation before they undergo sideward movement, as desired.

- (29) *Koj i kakvo si jadosan [zaštoto e kupil]? Bulgarian
 who and what are angry because is bought
 'You are angry because who bought what?' Bošković (2022: 7)

The second issue that is raised by the question of whether MWHs and CWHs are derived through same derivational steps, modulo sideward movement in CWHs, concerns superiority. Bošković reports that MWHs and CWHs in BCMS do not show parallel behavior with respect to superiority, and capitalizes on this difference to argue that mono-clausal CWHs are independent of MWF (but that both CWHs and MWHs depend on the existence of an indeterminate system in the language). In our analysis, if a language doesn't allow superiority violations, it doesn't allow the movement of wh-phrases to result in nesting paths, as opposed to crossing paths (see the structures in (11-a) vs. (11-b) above).

⁹This is why Bošković proposes that the derivationally formed ConjP cannot be merged directly into the final [Spec CP].

Wh-phrases are always related to their original positions either by forming nesting or crossing dependencies; this is independent of whether or not the wh-phrases are coordinated (have gone through an extra step of sideways movement). Thus, superiority violations will always emerge in mono-clausal CWHs if they emerge in MWHs and conversely, they will not emerge in CWHs if they also do not emerge in MWHs. The diverging behavior between mono-clausal CWHs and MWHs that Bošković reports for BCMS is not predicted on our analysis. In the next section, we show that the CWHs which, according to Bošković, must obey superiority are not necessarily mono-clausal, contra his proposal.

5 EMPIRICAL QUESTIONS

Bošković argues that CWHs like those in (30) can violate superiority because they are necessarily bi-clausal. For him, the presence of an auxiliary clitic between the first wh-phrase and the coordinator indicates a bi-clausal structure, regardless of whether the second wh-phrase is or isn't followed by an auxiliary clitic: the fact that the first wh-phrase in a CWH is followed by some material (here, the auxiliary clitic *je* 'be.3SG') is for Bošković sufficient indication of a bi-clausal structure of the CWH.

- (30) a. Ko je i šta (je) kupio?
 who is and what is bought
 Lit. 'Who did and what did buy?'
 b. Šta je i ko (je) kupio?
 what is and who is bought
 Lit. 'What did and who did buy?'

In our view, the presence versus the absence of the second auxiliary clitic in (30) is crucial: While we agree with Bošković that the examples in which both wh-phrases are followed by an auxiliary, given in (31), must indeed be bi-clausal, we maintain that those in which only the first wh-phrase is followed by an auxiliary clitic, given in (32), are mono-clausal.

- (31) a. Ko je i šta je kupio?
 who is and what is bought
 Lit. 'Who did and what did buy?'
 b. Šta je i ko je kupio?
 what is and who is bought
 Lit. 'What did and who did buy?'
- (32) a. Ko je i šta kupio?
 who is and what bought
 Lit. 'Who did and what buy?'
 b. Šta je i ko kupio?
 what is and who bought
 Lit. 'What did and who buy?'

Our reasoning goes as follows: In BCMS, auxiliary clitics, like pronominal clitics, are second position elements – they follow the first constituent in their clause (Browne 1974, 1975, Franks & Holloway King 2000, Halpern 1995, Progovac 1996, among many others). For example, in (33-a) the 3rd person auxiliary clitic *je* follows the entire subject, in (33-b) it follows the first complex constituent within the subject, and in (33-c) it follows the first prosodic word of that constituent.

- (33) a. [Jako dobar prijatelj mog brata] je stigao u deset.
 very good friend my.GEN brother.GEN is arrived at ten
 'My brother's best friend arrived at 10.'
 b. [[Jako dobar] je prijatelj mog brata] stigao u deset.
 very good is friend my.GEN brother.GEN arrived at ten

- c. [[[Jako] je dobar] prijatelj mog brata] stigao u deset.
 very is good friend my.GEN brother.GEN arrived at ten

Similarly, clitics can occupy different ‘second’ positions when the first complex constituent in their clause is a coordinate phrase, as shown in (34).¹⁰ In (34-a), the auxiliary clitic *će* ‘will, 3SG’ follows the entire coordinate subject, while in (34-b) it follows the first conjunct inside the subject.

- (34) a. [Lorena i Jan] će igrati šah.
 Lorena and Jan will play chess
 ‘Lorena and Jan will play chess.’
 b. [[Lorena] će i Jan] igrati šah.
 Lorena will and Jan play chess
 ‘Lorena and Jan will play chess.’

The same is true when the first constituent in the clause is a constituent other than the subject; for example, when it is a topicalized coordinated object: the clitic can follow the entire coordinate phrase, as in (35-a) or it can follow the first conjunct, as in (35-b).

- (35) a. [Lorenu i Jana] će dovesti roditelji.
 Lorena.ACC and Jan.ACC will bring parents
 ‘The parents will bring Lorena and Jan.’
 b. [[Lorenu] će i Jana] dovesti roditelji.
 Lorena.ACC will and Jan.ACC bring parents
 ‘The parents will bring Lorena and Jan.’

In (36), the fronted constituent is a coordination of universal quantifiers, which, as Bošković notes, also admits unlike categories, in our case a direct object and a temporal adjunct. The auxiliary clitic can again occupy different positions.

- (36) a. [Svakome i uvijek] je pomogao.
 everyone.DAT and always is helped
 ‘He has always helped everyone.’
 b. [[Svakome] je i uvijek] pomogao.
 everyone.DAT is and always helped
 ‘He has always helped everyone.’

Given the data in (33)-(36), it seems that in BCMS an auxiliary clitic can always be placed within the first constituent in a single clause, whatever that constituent is, as long as its position counts as second by some independent criterion (first constituent/first prosodic word). We thus conclude that the placement of clitics in (37) below is entirely compatible with a mono-clausal analysis, on which the first constituent is a ConjP with

¹⁰Progovac (1996: 418) reports that example (i), from Browne (1975), is ungrammatical for her:

- (i) *Sestra će i njezin muž doći u utorak.
 sister will and her husband come in Tuesday
 ‘My sister and her husband will come on Tuesday.’

Similarly, Bošković (2001: 15) marks as ungrammatical the example in (ii):

- (ii) *Tvoja su majka i Petar otišli.
 your are mother and Petar left
 ‘Your mother and Petar left.’

However, Browne (1975) reports (i) to be fully grammatical (which is also Martina Gračanin-Yuksek’s judgment), and Halpern (1992, 1995) notes that examples like this are grammatical for at least some speakers, and are acceptable in literary language. For reasons why (ii) is not completely comparable to (i) and why (ii) is ungrammatical, while (i) is grammatical, see Gračanin-Yuksek & Arsenijević (2017).

Moreover, CWHs like (41-a) contrast with CWHs like the one in (42), where each wh-phrase is followed by an auxiliary clitic. Such CWHs with repeated auxiliaries cannot contain an obligatorily transitive verb, as the ungrammaticality of (42) shows. The presence of a second auxiliary indicates the presence of a second T in the structure, and points to a bi-clausal structure of the CWH. Thus, the contrast between (41-a) and (42) shows that the two have different structures, namely, that (41-a) is mono-clausal and (42) is bi-clausal.

- (42) *Što je i kada je Sanja razvila? Obligatorily transitive verb
 what is and when is Sanja developed
 Lit. ‘What did and when did Sanja develop?’

Furthermore, the bi-clausal CWH with repeated clitics in (42) becomes grammatical when the obligatorily transitive verb *razviti* ‘develop’ is replaced by an optionally transitive *jesti* ‘eat’, as in (43), which shows that the contrast between (41-a) and (42) is related to the transitivity properties of the verb.

- (43) Što je i kada (je) Sanja jela? Optionally transitive verb
 what is and when is Sanja eaten
 ‘What did and when did Sanja eat?’

Given these considerations, CWHs in which the auxiliary clitic follows only the first wh-conjunct (as in (32)/(39)), are necessarily mono-clausal, thus arguing against Bošković’s statement that “When the clitic follows the first wh-phrase, [this] unambiguously shows that the first conjunct is larger than the wh-phrase itself [...]” (Bošković 2022: 3)

If CWHs like (39-a) are necessarily mono-clausal, the split between CWHs that, according to Bošković, can violate superiority and CWHs that cannot violate superiority no longer aligns with the split between CWHs with the bi-clausal versus mono-clausal analysis. Rather, it seems that some mono-clausal CWHs – those where the auxiliary clitic follows only the first wh-phrase – tolerate superiority violations, while some – those where the auxiliary clitic follows only the second wh-phrase – do not.

This brings us to the second empirical problem we note about Bošković’s analysis: the claim that CWHs in which an auxiliary clitic follows only the second wh-phrase are necessarily mono-clausal. Bošković states that “when there is no additional material following the first wh-phrase (i.e., when there is nothing intervening between the first wh-phrase and the coordinator) we have a wh&wh coordination.” (Bošković 2022: p. 3) Thus, for Bošković, (44) are necessarily mono-clausal and cannot be bi-clausal.¹²

- (44) a. Ko i šta je kupio?
 who and what is bought
 Lit. ‘Who and what has bought?’
 b. *Šta i ko je kupio?
 what and who is bought
 Lit. ‘What and who has bought?’

We disagree: we maintain that the clitic placement in examples like (44) is in principle compatible with both a mono-clausal and a bi-clausal structure. For us, these particular examples would have to be mono-clausal due to the presence of two obligatory wh-arguments, but this is not a problem for Bošković, who assumes that examples like this involve a null subject and a null object (see his fn. 3). Bošković (2022) does not provide an explicit analysis of bi-clausal CWHs. However, it is clear from his prose and the judgments he reports that some mechanism that results in the non-pronunciation of material in the first clausal conjunct must be available. Thus, claiming that the examples in (44) are necessarily mono-clausal means that they cannot be derived as in (45).

¹²Crucially, for Bošković this is not because the CWHs involve coordination of two obligatory arguments, but because there is no material following the first wh-phrase.

- (45) a. Ko je ~~kupio~~ *pro* i šta je *pro* kupio?
 who is bought *pro* and what is *pro* bought
 Lit. 'Who and what bought?'
 b. *Šta je *pro* ~~kupio~~ i ko je kupio *pro*?
 what is *pro* bought and who is bought *pro*
 Lit. 'What and who bought?'

We can think of no principled reason why this should be the case (assuming, like Bošković does, that coordination of argument wh-phrases can be bi-clausal in the first place). One might argue that in (45), the unpronounced material in the first conjunct has to include the auxiliary clitic (in addition to the rest of the TP), and if the clitic sits in C (Progovac 1996), the non-pronounced material would not be dominated by a maximal projection (but by a C'). However, in examples that do not contain auxiliary clitics, as in (46), that explanation would no longer work since the surface string would be derivable by simply non-pronouncing the TP. Yet, Bošković treats these examples as necessarily mono-clausal as well.

- (46) a. Ko i šta kupuje?
 who and what is-buying
 Lit. 'Who and what is buying/buys?'
 b. *Šta i ko kupuje?
 what and who is-buying
 Lit. 'What and who is buying/buys?' (Bošković 2022: 2)

The discussion in this section shows that the judgments regarding superiority violations in mono-clausal CWHs that Bošković reports in his paper do not dovetail with the mono-clausal versus bi-clausal structure of the CWHs in question. We have shown that some superiority-violating CWHs, which Bošković marks as grammatical, are, in fact, mono-clausal, and we have also shown that for some superiority-violating CWHs, which Bošković marks as ungrammatical, a bi-clausal analysis cannot be excluded. Thus, the judgments Bošković reports cannot be related to the mono-clausal versus bi-clausal structure of the examples.

Finally, we note that Bošković's analysis of mono-clausal CWHs in BCMS cannot be extended to other Slavic languages. Bošković's analysis is tailored to deriving superiority obeying word order in mono-clausal CWHs – this is why he proposes that the wh-phrase first merged into the structure has to undergo sideward movement (and become the complement of the coordinator in a different workspace) before the second wh-phrase is externally merged. This way, the wh-phrase that is introduced later always becomes the specifier of the coordinator, and this necessarily yields the superiority-obeying word order, thus explaining why mono-clausal CWHs cannot violate superiority even though MWH can. If this analysis is not language specific, it predicts that mono-clausal CWHs will necessarily obey superiority in all languages that have them, but this is not what we find: in many languages, superiority violations are tolerated equally in MWHs and CWHs. These languages include Slavic languages like Polish and Russian, but also wh-in situ languages like Korean or Chinese. Thus, either Bošković's analysis is valid only for BCMS or languages in which CWHs can violate superiority do not have mono-clausal CWHs.

6 CONCLUSION

This paper is our response to Bošković's (2022) analysis of mono-clausal CWHs. Bošković argues against our (2013) proposal that multiple fronting of wh-phrases is a prerequisite for the formation of mono-clausal CWHs in a language, as indicated by the fact that CWHs and MWHs are subject to the same superiority requirements. Instead, Bošković proposes that what makes mono-clausal CWHs possible in a language is the existence

of an indeterminate system. His analysis is motivated by the observation that in BCMS mono-clausal CWHs cannot violate superiority, while comparable MWHs can. Like CGY (2013), Bošković adopts Zhang's (2007, 2010) sideward movement analysis of mono-clausal CWHs, but he argues that without additional timing conditions on sideward movement, the sideward movement analysis predicts that the ordering of wh-phrases in CWHs should be free, even if MWHs in the language obey superiority. Furthermore, he claims that the sideward movement analysis cannot derive island sensitivity of mono-clausal CWHs.

In this paper, we show that our (2013) analysis predicts both the island sensitivity of mono-clausal CWHs and the parallelism in superiority requirements between mono-clausal CWHs and MWHs if we make an additional assumption that sideward movement of wh-phrases happens as late in the derivation as possible, and crucially, after the wh-phrases have already been extracted from the ν P in which they were externally merged.

Finally, we take issue with Bošković's claim that all and only mono-clausal CWHs in BCMS must obey superiority, and that bi-clausal CWHs and MWHs do not have to. We conclude that the difference between CWHs that can violate superiority and those that cannot does not correlate with their syntactic structure: it turns out that some mono-clausal CWHs can violate superiority and some bi-clausal CWHs cannot. This casts doubt on Bošković's analysis, in which superiority violations are disallowed only in mono-clausal CWHs. We also note that the analysis Bošković proposes for mono-clausal CWHs cannot be correct for many Slavic languages (or varieties of BCMS), in which both MWHs and mono-clausal CWHs allow superiority violations.

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ABBREVIATIONS

ACC	accusative	MWF	multiple wh-fronting
BCMS	Bosnian/Croatian/- Montenegrin/Serbian	MWH	multiple wh-questions
CGY	Citko & Gračanin-Yuksek	NOM	nominative
CWH	coordinated wh-question	NPI	negative polarity item
DAT	dative	PST	past
GEN	genitive	REFL	reflexive
INF	infinitive	TOP	topic

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