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Free relatives in Croatian: An argument for the 'Comp Account'[*]

Abstract:

The paper argues for the Comp Account (Groos & Van Riemsdijk 1981, among others) over the Head Account (Bresnan and Grimshaw 1978, among others) of free relatives based on several converging arguments from Croatian. I show, based on reconstruction effects, that the wh-word of a free relative originates inside the relative clause and wh-moves to its surface position. In addition, using arguments from clitic placement, I argue that the derived position of WH_{FR} is no higher than [Spec, CP] of the free relative.

Keywords: free relatives, relative clauses, Croatian, clitics.

1. Introduction

In this paper I examine free relatives **(FRs)** in Croatian. I argue that in this language, the wh-phrase that introduces a FR **(WH_{FR})** occupies [Spec, CP] of the relative clause, a position to which it raises from within the FR.

FRs are illustrated in (1).

1. I will eat [$_{FR}$ what (ever) you cook.]

Analyses of FRs proposed in the literature have varied with respect to two parameters:[1]

a) the surface position attributed to the WH_{FR} ([Spec, CP] or higher);

b) the derivational history of the WH_{FR} (raising *vs.* external merge).

These two parameters of analysis create the following space of logical possibilities for the derivation of FRs.

Table 1

The analysis in box (a) of Table 1 was proposed for English FRs by Bresnan & Grimshaw (1978), and adopted by Larson (1987) and Citko (2002) among others. According to this account, the WH_{FR} is the head of the FR and it is externally merged in its surface position, outside the relative clause that follows it. I refer to this analysis as the *External-Head Account*.

The account schematized in (b) was proposed by Hirschbühler (1976), Bury & Neeleman (1999) and Iatridou, Anagnostopoulou & Izvorski (2002). According to these authors, the WH_{FR} raises from within the FR, to occupy a position outside it. I will call this analysis the *Derived-Head Account*.

Finally, the analysis sketched in box (d) was offered (among others) by Groos & Van Riemsdijk (1981), Harbert (1983), Suñer (1983) and Grosu & Landman (1998). According to this approach, the WH_{FR} occupies the specifier position of the relative clause, not a position external to the relative CP. This approach assumes that a FR is a modifier of a null head, as in (2), possibly a *pro,* as argued by Groos & Van Riemsdijk 1981, or a PRO, as argued by Harbert (1983).[2] The analysis has come to be known as the *Comp Account* of FRs.

2. $[_{NP} \varnothing [_{CP}$ wh-phrase$_i$ .... t$_i$]]

To my knowledge, the possibility represented by the shaded cell (c) in the table has not been proposed in the literature. This analysis shares with the External-Head Account merging of a wh-phrase in its *surface* position, and it shares with the Comp Account the idea that this position is [Spec, CP] of the FR. In the rest of the paper, we will see that reconstruction phenomena in Croatian provide good evidence against *externally* merging WH_{FR} in the [Spec, CP] of a FR. Furthermore, unlike the External-Head Account, an analysis in cell (c) fails to use the site of the merger of WH_{FR} to account for the *matching effect*, the phenomenon observed for FRs in some languages including Croatian, that WH_{FR} has to satisfy selectional category and case requirements of both matrix and embedded verbs. The matching effect is illustrated in (3) – (5), for English, German, and Croatian.[3]

3. a. John will see whoever Bill brings.   *English – category matching*

   b. *John will see with whoever Bill comes.

4. a. Wer   schwach ist, muss klug   sein.   *German – case matching*

      who.<u>nom</u> weak   is   must clever be

      'Whoever is weak is clever.'   *(Kubota 2003: ex. 1a, pg. 147)*

   b. *Wer   klug   ist, vertraue ich.

      who.<u>nom</u> clever is   trust$_{DAT}$ I

      Intended: 'I trust whoever is clever.' *(Adapted from Kubota 2003: ex. 1b, pg. 147)*

5. a. Petar će kupiti   koji   god auto   Ivan prodaje. *Croatian – case matching*

   Petar will buy$_{ACC}$ which.<u>acc</u> ever car.<u>acc</u> Ivan sells$_{ACC}$

   'Petar will buy whichever car Ivan is selling.'

   b. *Petar će kupiti   kojem   god autu   Ivan vjeruje.

   Petar will buy$_{ACC}$ which.<u>dat</u> ever car.<u>dat</u> Ivan   trusts$_{DAT}$

   Intended: 'Petar will buy whichever car Ivan trusts.'

Under the External-Head Account (Bresnan & Grimshaw 1978), the matching effect is accomplished by externally merging WH$_{FR}$ in the surface position, which is outside the relative CP, while the "gap" position inside the FR is occupied by a pronominal element subject to the so-called Controlled Pro Deletion rule. This rule deletes the pronoun under referential identity with WH$_{FR}$. The Derived-Head Account (Iatridou, Anagnostopoulou & Izvorski 2002) accounts for the matching effect by proposing that, after moving outside of the relative CP, WH$_{FR}$ projects, thus explaining the fact that it must meet the category and case requirements of the matrix verb in addition to those of the embedded verb. Finally, the proponents of the Comp-Account (Groos and van Riemsdijk 1981) propose that the matching effect is achieved by the Comp Accessibility Parameter, according to which when the external head is null, as illustrated in (2), the selectional requirements of the matrix verb may be satisfied by the element in [Spec, CP].

However, all of these ways of accounting for the matching effect have met with a number of criticisms (Izvorski 2000, Bury 2003, Chomsky 2004, Van Riemsdijk 2006).

In the External-Head Account, the deletion rule that is constrained by islands seems unprincipled, or at least unprecedented. The same is true of the *projection* of the moved element, proposed by the Derived-Head Account. Similarly, the Comp Accessibility Parameter has been criticized as unprincipled even by the original proponents (Van Riemsdijk 2006).

In this paper I do not aim to account for the matching effect. My sole purpose is to argue for a particular structure of FRs in a particular language. It follows that the mechanism responsible for the matching effect in this language will have to operate on this structure.

I argue that the Comp Account is the correct analysis of Croatian FRs. I use two tests to determine the structure of FRs in Croatian: reconstruction and clitic placement. I compare FRs both to headed relatives **(HRs)** and to questions with respect to each test. I show that in Croatian, FRs pattern consistently with interrogative CPs, and not with HRs.[4]

The reconstruction tests, presented in section 2, show that the WH_{FR} in Croatian is obligatorily interpreted in a position *internal to the FR*. This constitutes evidence that WH_{FR} raises from within the relative clause and is not base generated in its surface position, thus excluding the analysis in box (a) in Table 1, the External-Head Account.

The evidence from reconstruction facts is compatible with either box (b), the Derived-Head Account or box (d), the Comp Account. In Croatian, second position clitics can be used to decide between the two approaches. It turns out that in Croatian,

WH$_{FR}$ is no higher than [Spec, CP] of the FR. This eliminates the Derived-Head Account (box b) as a possible analysis of Croatian FRs. I conclude that the Comp Account (box d) is the correct analysis of FRs in Croatian.[5]

We will see that, with respect to both tests, HRs behave differently from FRs. Evidence from reconstruction and clitic placement argues for the analysis of HRs comparable to the one in box (a) of Table 1. In Croatian HRs, the head NP seems to be externally merged in a position outside the relative clause that modifies it.

2. Free Relatives, Headed Relatives, Questions – Evidence from Reconstruction

Croatian has a subject-oriented possessive anaphor *svoj* ('self's'), which stands in complementary distribution with the possessive pronouns. The anaphor must be bound by a subject antecedent within the same clause (6, 8). The non-reflexive possessive pronoun, on the other hand, can only be bound outside its local domain (7, 9).

6. Roditelji$_i$ vole **svoju**$_{i/*j}$ djecu.

  parents   love self's   children.

  'Parents love their children.'

7. Roditelji$_i$ vole **njihovu**$_{j/*i}$ djecu.

  parents   love their   children

  'Parents$_i$ love their$_j$ (somebody else's) children.'

8. Vid$_i$ tvrdi   da Dan$_j$ voli **svoju**$_{j/*i}$ djecu.

   Vid claims that Dan loves self's   children

'Vid$_i$ claims that Dan$_j$ loves his$_j$ (Dan's/*Vid's) children.'

9. Vid$_i$ tvrdi da Dan$_j$ voli **njegovu**$_{i/k/*j}$ djecu.

   Vid claims that Dan loves his children

   'Vid$_i$ claims that Dan$_j$ loves his$_i$ (Vid's/*Dan's) children.'

   ## 2.1. Reconstruction in Free Relatives

If *svoj* appears inside the nominal restriction of the WH$_{FR}$, it must be bound by the

subject of the FR, and not by the matrix subject (10).[6]

10. Vid$_i$ će nagraditi koje god **svoje**$_{j/*i}$ dijete Dan$_j$ preporuči.

    Vid will reward which ever self's child Dan recommends

    'Vid$_i$ will reward whichever of his$_j$ children Dan$_j$ recommends.'

If, by contrast, the nominal restriction of WH$_{FR}$ contains a possessive pronoun, it cannot

be bound by the subject of the FR, as shown in (11).

11. Vid$_i$ će nagraditi koje god **njegovo**$_{i/k/*j}$ dijete Dan$_j$ preporuči.

    Vid will award which ever his child Dan recommends

    'Vid$_i$ will award whichever of his$_{i/*j}$ children Dan$_j$ recommends.'

Finally, if the WH$_{FR}$ is the subject of a FR, it can only contain a possessive pronoun,

since an anaphor in this configuration always lacks a local subject antecedent (12).[7]

12. Hana$_i$ će prodati koje god **njezine**$_{i/j}$/***svoje** slike postignu najbolju cijenu.

    Hana will sell which ever her self's pictures reach best price

'Hana$_i$ will sell whichever of her$_{i/j}$ pictures reach the best price.'

These data suggest that the WH$_{FR}$ obligatorily reconstructs into its base position.

That WH$_{FR}$ must reconstruct is also shown by the ungrammaticality of examples where the reconstruction of the wh-phrase induces a Condition C violation:

13. *Vid će   nagraditi [$_{FR}$ koju   god Danovu$_j$ djecu   on$_j$ preporuči.]

    Vid will reward   which ever Dan's   children he   recommends

    'Vid will reward whichever Dan's$_j$ children he$_j$ recommends.'

The generalization that WH$_{FR}$ must reconstruct into its original position is supported by the data that involve variable binding. In (14), the pronoun, *njezino* ('her') contained within the WH$_{FR}$ can be bound by the quantifier inside the subject of the embedded clause, *nijedna majka* ('no mother'). This indicates that at LF the quantifier has wider scope than the wh-phrase. Given clause boundedness of QR, the observed scope relations can only be obtained by the reconstruction of WH$_{FR}$, and not by the QR of the quantifier.

14. Vid će   nagraditi [$_{FR}$ koje   god njezino$_{i/k}$ dijete Dan misli

    Vid will reward   which ever her   child Dan thinks

    [$_{CP}$ da [nijedna majka]$_i$ ne   vjeruje [$_{CP}$ da   treba   nagraditi.]]]

        that none   mother *Neg* believes   that should reward

    'Vid will reward whichever of her$_i$ children Dan thinks [no mother]$_i$ believes should

     be rewarded.'

Backwards variable binding is normally not allowed, as shown by (15).

15. *Njegova$_i$ majka misli   da [nijedan dječak]$_i$ nije   najbolji.

his   mother thinks that   none   boy   is not best

'His$_{*i}$ mother thinks that [no boy]$_i$ is the best.'

Finally, reconstruction in FRs can be demonstrated by the interpretation of idiom chunks. In (16), idiom interpretation of the sentence is available. Under the hypothesis that idiom meaning comes about only if the idiom chunks form a constituent at deep structure (Marantz 1984), the availability of idiom reading in (16) argues that the WH$_{FR}$ has at one point occupied a position where it formed a constituent with the verb and that it has come to occupy its surface position through movement.

16. Vida će   se   dojmiti kakav god   bostan   Dan obere.

    Vid will REFL impress what-kind-ever melon-field Dan picks

    'Vid will be impressed by however severe punishment Dan receives.'

The reconstruction facts presented here show that in Croatian FRs, the wh-phrase reconstructs into a FR-internal position. This is evidence that the WH$_{FR}$ is not externally merged in its surface position, but raises from within the relative clause.

2.2. Reconstruction in Headed Relatives

The binding facts in HRs are exactly the opposite of those in FRs. If *svoj* appears within the NP that heads the relative clause, as in (17), it must be bound by the matrix subject, *Vid*, and not by the subject of the relative clause, *Dan*.

17. Vid$_i$ će   nagraditi ono **svoje**$_{i/*j}$ dijete koje   Dan$_j$ preporuči.

    Vid will reward   that self's   child which Dan recommends.

'Vid will reward that of his own children that Dan recommends.'

The impossibility of binding between the embedded subject, *Dan* and the anaphor *svoj* in (17) indicates that the head of the relative clause, *ono svoje dijete* ('that self's child') cannot reconstruct into the relative clause. Moreover, the fact that (17) is grammatical, i.e. that the anaphor *is* bound by the matrix subject, shows that the matrix subject and the anaphor belong to the same local domain.

If the NP that heads a HR contains a possessive pronoun, the situation is different from what we saw in (17). The pronoun may be bound by the embedded subject, but not by the matrix subject. This is shown in (18).

18. Vid$_i$ će   nagraditi ono **njegovo**$_{j/k/*i}$ dijete koje   Dan$_j$ preporuči.

    Vid will reward   that his   child which Dan recommends.

    'Vid will reward that of Dan's/someone else's children that Dan recommends.'

Again, reconstruction of the head NP into the relative clause is impossible. The head NP and the matrix subject seem to belong to the same clause.

As illustrated in (19), HRs do not display Condition C violations when the head NP contains an R-expression coindexed with a pronoun inside the relative clause.

19. Vid$_i$ će   nagraditi [$_{NP}$ onu   Danovu$_j$ djecu   [$_{CP}$ koju   on$_j$ preporuči.]]

    Vid will reward   those Dan's   children   which he recommends

    'Vid will reward those Dan's$_i$ children that he$_i$ recommends.'

In (19), the head NP, *onu Danovu djecu* ('those Dan's children') does not reconstruct into the position where it is c-commanded by the coindexed pronoun *on* ('he').

If, on the other hand, a relative clause that modifies an NP is introduced by a complex wh-phrase, this wh-phrase does reconstruct, as illustrated by the fact that (on the relevant reading) (20) is excluded as a Condition C violation.

20. Vid će   nagraditi [$_{NP}$ onu   djecu   [$_{CP}$ čije   priče o   Danu$_j$ on$_{i/*j}$ preporuči.]]

    Vid will reward   those children   whose stories about Dan he   recommends

    'Vid will reward those children whose stories about Dan$_j$ he$_{i/*j}$ recommends.'

The lack of reconstruction of the head NP into the relative clause is also confirmed by the data from variable binding. In (21), the pronoun inside the head NP cannot be bound by the quantified subject of the relative clause, indicating that the NP, *ono njezino dijete* ('that her child') does not reconstruct to a position where it is c-commanded by the quantifier.

21. Vid će   odabrati ono njezino$_{j/*i}$ dijete koje [nijedna majka]$_i$ ne   misli

    Vid will choose   that her$_i$ child which none   mother *Neg* thinks

    da   treba   odabrati.

    that should choose

    'Vid will choose that of her$_{*i}$ children that [no mother]$_i$ thinks should be chosen.'

Also, if the head NP contains an idiom chunk, as in (22), the idiom reading is not available. This shows that the head NP at no level forms a constituent with the verb of the HR.

22. Vida će se   dojmiti bostan   kakav   Dan obere.

Vid will REFL impress melon-field what-kind Dan picks

'Vid will be impressed by the kind of melon field that Dan picks.'

#'Vid will be impressed by the severe punishment Dan receives.'

The evidence from reconstruction, presented here, indicates that in HRs, the head NP does not reconstruct into the relative clause. This is taken as evidence that the head NP in a HR is externally merged in its surface position.[8] Croatian HRs thus differ from HRs in languages like English and French. In these, the head NP of a HR can, for the purposes of variable and anaphor binding, be interpreted CP-internally.[9]

The data presented in this section suggest that in Croatian, FRs and HRs (except perhaps degree relatives) have different syntax. While the WH$_{FR}$ raises from inside the FR, the head NP in a HR seems to be externally merged in its surface position. In the following section, I discuss binding possibilities in interrogative CPs.

2.3. Reconstruction in Questions

In Croatian, an anaphor contained within the wh-phrase of a wh-question **(WH$_Q$)** is obligatorily interpreted in its base position. In (23), the pictures can only be Dan's pictures, and not Vid's.[10] Moreover, the anaphor cannot be bound by the subject of the matrix clause, *Ivan*.[11]

23. Ivan$_k$ ne zna   koje je **svoje**$_{j/*i/*k}$ slike Vid$_i$ mislio da   je Dan$_j$ poslao na natječaj.

   Ivan not know which is self's pictures Vid thought that *Aux* Dan sent   on contest

   'Ivan$_k$ doesn't know which pictures of himself$_j$ Vid$_i$ thought Dan$_j$ sent to the contest.'

A fronted wh-phrase that contains a name coindexed with a pronoun that appears lower in the structure is also obligatorily interpreted in its base position. (24) is ruled out on a Condition C violation.

24. *Koje   je   Danove$_i$ slike   on$_i$ poslao na natječaj?

   which *Aux* Dan's   pictures he sent   on contest

  *'Which Dan's$_i$ pictures did he$_i$ send to the contest?'

Finally, the variable contained inside the WH$_Q$, *njezine* ('her') can be bound by the quantifier *nijedna slikarica* ('no painter').

25. Koje   njezine$_{i/j}$ slike   Dan   tvrdi da   [nijedna slikarica]$_i$ ne vjeruje

   which her   pictures Dan claim that none   painter   *Neg* believes

   da   je   Vid poslao na natječaj?

   that Aux Vid sent   on contest

  'Which of her pictures does Dan claim that no painter believes that Vid sent to the

   contest?'

In Croatian, the WH$_Q$ and the head NP in a HR display opposite behavior with respect to binding. While WH$_Q$ must reconstruct into its base position, the head NP in a HR does not display reconstruction effects (putting aside degree relatives discussed in footnote 8). We saw that FRs pattern with questions, in that the WH$_{FR}$ also must be interpreted in the FR-internal position. Therefore, we can conclude that WH$_{FR}$ is not externally merged in its surface position, but raises from within the relative clause.

However, we cannot yet draw any conclusions about how high it raises. Does it move only as high as [Spec, CP], as in (26)? Or does it move further, to occupy a CP-external position, as in (27)?

26. [$_{CP}$ wh-phrase$_i$ ... t$_i$ ...]^{12}

27. [$_{NP}$ [$_{N'}$ wh-phrase$_i$ [$_{CP}$ t$_i$'.... t$_i$ ...]]]

In the next section, where I discuss clitic placement, we will see that the representation in (26) is correct for Croatian FRs. That is, the WH$_{FR}$ can be shown not to leave the FR.

3. Free Relatives, Headed Relatives, Questions – Evidence from Clitic Placement

In Croatian, clitics are second-position elements. They always follow the first position in their domain (for discussion, see Zec & Inkelas 1990, Ćavar & Wilder 1994, Franks & Progovac 1994; Schütze 1994, Franks 2000, Bošković 2001). The relevant domain is the minimal tensed CP in which the clitics were originally merged, as shown by (28). Clitics cannot raise from a tensed clause, as illustrated by the ungrammaticality of (29).[13] Clitic movement thus diagnoses the CP-hood of a phrase. [14]

28. Hana misli [$_{CP}$ da **će** **ga**   Dan udariti.]

   Hana thinks   that will him.<u>acc</u> Dan hit

   'Hana thinks that Dan will hit him.'

29. *Hana **će**$_i$ **ga**$_j$ misli [$_{CP}$ da t$_i$ t$_j$ Dan udariti.]

   Hana will him.<u>acc</u> thinks   that   Dan hit

In the following paragraphs, I first examine FRs, HRs, and questions with respect to the placement of clitics merged in the relative clause. I then go on to discuss the placement of clitics merged in the matrix clause. Both the "downstairs" and the "upstairs" clitics indicate that the WH$_Q$ in questions occupies a position that is different from the position of the head NP in a HR: the WH$_Q$, not surprisingly, occupies an edge position of the CP, while the head NP of a HR occupies a position external to the relative CP. The facts from FRs contrast with HRs, and pattern with wh-questions, indicating once again that FRs and wh-questions share the same syntax.

3.1. Clitics Originating in the Relative Clause

3.1.1. Clitics Originating in the Relative Clause and Free Relatives
In a FR introduced by *which+NP*, clitics can appear either after the wh-word + *god* ('ever'), as in (30), or after the whole wh-phrase, as in (31).[15]

30. Vid kupuje [$_{FR}$ [$_{DP}$ koji   god   **mu**   **je**   sat]   Dan preporučio.]

    Vid buys   which ever him.<u>dat</u> *Aux* watch Dan recommended.

    'Vid buys whichever watch Dan recommended to him.'

31. Vid kupuje [$_{FR}$ [$_{DP}$ koji   god sat]   **mu**   **je**   Dan preporučio.]

    Vid buys   which ever watch him.<u>dat</u> *Aux* Dan recommended.

This is, in fact, not surprising. For purposes of clitic placement in Croatian, what counts as the first position is either the first syntactic constituent (unless it is very heavy) or the first prosodic word **(PW)** (Browne 1975). If the first PW in the clause is a part of a

bigger syntactic constituent, clitic(s) can split the constituent. This is illustrated in (32).[16]

32. [Ova   **mu**   **je**   mala   djevojčica] pokazala   put.

   this.<u>nom</u> him.<u>dat</u> *Aux* little.<u>nom</u> girl.<u>nom</u>   showed   way

   'This little girl showed him the way.'

     In (30) and (31), *koji god* ('whichever') is the first PW, while *koji god sat* ('whichever watch') is the first syntactic constituent of the relative clause. As expected, both can successfully host clause-mate clitics. For an alternative explanation of clitic placement, see Appendix.

The clitics can also precede *god* ('ever'), as in (33).[17]

33. Vid kupuje [FR [DP koji   **mu**   **je**   god   sat]   Dan preporučio.]

   Vid buys   which him.<u>dat</u> *Aux* ever watch Dan recommended.

(30), (31), and (33) all contrast with (34), where the second position is computed without taking WH$_{FR}$ into account.

34. * Vid kupuje [FR [DP koji   god   sat]   Dan **mu**   **je**   preporučio.]

    Vid buys   which ever watch Dan him.<u>dat</u> *Aux* recommended.

This contrast shows that the WH$_{FR}$ forms part of the domain in which clitics must occupy the second position. Since clitic movement is diagnostic of CP-hood, WH$_{FR}$ must occupy a position *within* the CP to which the clitics thematically belong. This places the WH$_{FR}$ in [Spec, CP] of the relative clause. An additional piece of evidence in favor of this conclusion comes from the fact that (34) patterns with (iii) in footnote 16, in that in *neither* case can clitics occupy the third position in their domain, even though the first

constituent is heavy. This is true only when the first constituent is a fronted wh-phrase, but not when it occupies, say, the subject position (see contrast between (ii) and (iii) in footnote 16).

3.1.2. Clitics Originating in the Relative Clause and Headed Relatives

In a HR, the clitics that originate inside the relative clause follow the relative operator in the specifier of the relative CP, as shown in (35). They cannot follow the nominal head of the relative clause, as in (36).

35. Vid kupuje [NP Sonyjev sat   [CP koji **mu**   **je**   Dan preporučio.]]

    Vid buys   Sony's watch   which him.<u>dat</u> *Aux* Dan recommended

    'Vid buys the Sony watch that Dan recommended to him.'

36. * Vid kupuje [NP Sonyjev sat   **mu**   **je** [CP koji Dan preporučio.]]

     Vid buys   Sony's watch him.<u>dat</u> *Aux*   which Dan recommended

The contrasts between (30)/(31) and (36) on the one hand and between (34) and (35) on the other show that the head NP in a HR does not occupy the same position as the WH_{FR}.[18] The head NP of a HR appears to be outside the relative clause.[19]

3.1.3. Clitics in Embedded Questions

If an embedded question contains clitics, they follow either the whole WH_Q, as in (37), or the first PW in WH_Q, as in (38). (See Appendix for an alternative approach to clitic

placement.)

37. Vid ne zna   [_{CP} [čiji   sat]   **mu**   **je**   Hana pokazala].

 Vid not knows   whose watch him.<u>dat</u> *Aux* Hana shown

 'Vid doesn't know whose watch Hana showed to him.'

38. Vid ne zna   [_{CP} [čiji   **mu**   **je**   sat]   Hana pokazala].

 Vid not knows   whose him.<u>dat</u> *Aux*   watch Hana shown

  If the second position is calculated without taking the WH$_Q$ into account, the
sentence is ungrammatical. This is shown in (39). See also (iii) in footnote 16.

39. * Vid ne zna   [_{CP} [čiji   sat]   Hana **mu**   **je**   pokazala].

 Vid not knows   whose watch Hana him.<u>dat</u> *Aux*   shown

  In (28) and (29) we saw that clitic movement in Croatian is clause bound. The
contrast between FRs and HRs regarding the placement of clitics originating in the
relative clause indicates that the head NP of a HR is not within the relative CP, while the
WH$_{FR}$ is. This is further corroborated by the fact that WH$_{FR}$ behaves like WH$_Q$ with
respect to clitic placement. So, we can conclude that the WH$_{FR}$ not only originates in the
embedded CP, but also remains within it.

 3.2. Clitics Originating in the Matrix Clause

The discussion so far concerned the placement of clitics that originate in the

FR/HR/embedded question. I now proceed to examine the placement of clitics that originate in the matrix clause. We will see that these also behave differently with respect to FRs and questions on the one hand and HRs on the other. We need to examine FRs/HRs/questions that appear at the beginning of the sentence, since only these provide a potentially suitable position for the matrix second-position clitics. Here I examine the FRs/HRs/questions that occupy the subject position of the matrix clause.[20]

3.2.1. Clitics Originating in the Matrix Clause in Free Relatives and Questions

Clitics that thematically belong to the matrix clause are absolutely banned from occurring within a FR that is the subject of the sentence.

40. [$_{FR}$ Tko god laže] nanio **mu**   **je** uvredu.

 who ever lies   brought him.<u>dat</u> *Aux* offence

 'Whoever lies offended him.'

41. *[$_{FR}$ Tko god **mu**$_i$ **je**$_j$ laže] nanio   t$_i$ t$_j$ uvredu.

 who ever him.<u>dat</u> *Aux* lies   brought   offence

  The same distribution of clitics holds of an interrogative CP, when it is the subject of the sentence.[21, 22]

42. [$_{CP}$ Gdje Dan živi] nepoznato **mu**   **je**.

 where Dan lives unknown   him.<u>dat</u> *Aux*

 'Where Dan lives is unknown to him.'

43. *[$_{CP}$ Gdje **mu**$_i$ **je**$_j$ Dan živi] nepoznato t$_i$ t$_j$.

    where him.<u>dat</u> *Aux* Dan lives unknown

Examples (42) and (43) show that a clitic cannot be placed inside a CP to which it thematically does not belong, even when the CP belongs to the domain within which clitics are allowed to raise, in this case, when it is the subject of the matrix clause. A FR in the subject position patterns with *bona fide* CPs, in that it is impenetrable to the matrix clitics. This indicates that a FR also has the structure of a CP. WH$_{FR}$ therefore must occupy a position *internal* to the CP, which indicates that it has not moved out of it and that no further projection of WH$_{FR}$ has occurred.[23] I conclude that WH$_{FR}$ occupies a [Spec, CP] position.

3.2.2. Clitics Originating in the Matrix Clause and Headed Relatives

When the subject of a clause is a HR (44 - 47), the judgments are reversed. Clitics that thematically belong to the matrix clause can freely follow the first PW of the HR, whether it is a noun (45), a determiner (46) or an adjective (47). This behavior is analogous to non-complex DPs, which we saw in (32).[24, 25]

44. [$_{NP}$ Čovjek [$_{CP}$ koji   laže]] nanio   **mu**   **je** uvredu.

     man   which lies   brought him.<u>dat</u> *Aux* offence

     'A/the man who lies offended him.'

45. [$_{NP}$ Čovjek **mu**$_i$ **je**$_j$ [$_{CP}$ koji   laže]] nanio   t$_i$ t$_j$ uvredu.

       man   him.<u>dat</u> *Aux*   which lies   brought   offence

46. [$_{DP}$ Ovaj **mu**$_i$ **je**$_j$ čovjek [$_{CP}$ koji laže]] nanio t$_i$ t$_j$ uvredu.

    this him.<u>dat</u> *Aux* man which lies brought offence

47. [$_{DP}$ Visok **mu**$_i$ **je**$_j$ čovjek [$_{CP}$ koji laže]] nanio t$_i$ t$_j$ uvredu.

    tall him.<u>dat</u> *Aux* man which lies brought offence

The head NP of the subject phrase is accessible to the clitics of the matrix clause, while the WH$_{FR}$ is not. If we keep in mind the fact that clitics diagnose the CP status of a constituent, this argues that the head NP of a HR is not inside the relative CP, while the wh-phrase of a FR is. Thus, FRs in Croatian cannot be captured by the Derived-Head Account, since it places the WH$_{FR}$ in a position external to the FR. Instead, Croatian facts are best explained by the Comp Account of FRs.

4. Conclusion

In this paper I used two tools to examine the structure of FRs, HRs, and questions in Croatian, namely reconstruction effects and clitic placement. I showed that with respect to both tests WH$_{FR}$ patterns with WH$_Q$. Both WH$_{FR}$ and WH$_Q$ obligatorily reconstruct into their base positions – evidence that they both undergo movement to the surface position. The head NP of a HR behaves as if it were externally merged in its surface position. These facts argue that the External-Head Account cannot be the correct analysis of Croatian FRs, while it *is* the correct analysis for the derivation of HRs.[26]

Furthermore, the placement of clitics in Croatian shows that the head of a HR is external to the relative clause (which is consistent with its being externally merged in the

surface position), while the WH_{FR} remains inside the FR, just like the WH_Q does. The fact that the WH_{FR} is CP-internal eliminates the Derived-Head Account as a possible analysis of FRs in Croatian.[27] I conclude that the Comp Account is correct for Croatian FRs.

An obvious question that arises concerns the universality of the proposed analysis. Although it might well be that the Comp Account is the correct analysis for FRs in all languages, at the moment such a claim can only be made for Croatian. This is because the reconstruction data, which is available in most languages, only argues for or against the External-Head Analysis. Reconstruction facts, however, make no distinction between the Derived-Head Account and the Comp Account, in the absence of a diagnostic such as clitic placement, which indicates the exact position of WH_{FR}. Croatian is thus an important source of information about the structure of FRs more generally. However, the investigation of whether or not the Comp Account is the correct analysis of FRs universally is beyond the scope of the present paper.

Appendix: The status of *god*

As pointed out by a reviewer, the clitic placement in (30) and (33) raises an interesting question with respect to the prosodic status of *god* ('ever'). Namely, the fact that clitic can follow the wh-word+*god*, as in (30) implies that *god* is a clitic. However, if this is the case, the question arises as to why it does not have a fixed position in the clitic cluster, since in (33), pronominal clitics precede it, rather than follow it. In fact, material

other than clitics may come between the wh-word and *god* ('ever'), for example, the subject.

48. Vid kupuje [FR [DP koji **mu** **je** Dan god sat] preporučio.]

    Vid buys   which him.dat *Aux* Dan ever watch recommended.

    'Vid buys whichever watch Dan recommended to him.'

    Given that nothing may separate clitics in a clitic cluster, example (48) argues against *god* being a clitic. The subject may also be insterted between *god* and the nominal restriction of WH$_{FR}$, *sat* ('watch'), as in (49).

49. Vid kupuje [FR [DP koji **mu** **je** god Dan sat] preporučio.]

    Vid buys   which him.dat *Aux* ever Dan watch recommended.

    'Vid buys whichever watch Dan recommended to him.'

    This distribution of clitics and the subject makes (30) and (33) look more like a consequence of a split constituent, which Croatian independently allows.

    I propose therefore that in (48), (49), and all the relevant examples in the paper, the complex WH$_{FR}$ *koji god sat* ('whichever watch') consists of three words: *koji*, *god*, and *sat*. Crucially, I propose that *koji* and *god* form a constituent on their own. Clitics can follow the whole constituent, *koji god sat*, as in (31), the first constituent within it, *koji god*, as in (30), and the first constituent within this constituent, *koji*, as in (33) (this placement gives the same result as placing clitics after the first PW). Such placement of clitics is observed in other splits with the same constituent structure. This is shown in (50).

50. a. [[Koliko skupu]   haljinu] **mi**   **je**   Vid kupio?

    how   expensive dress   me.*dat Aux.* Vid bought

    'How expensive dress did Vid buy for me?'

  b. [[Koliko skupu]   **mi**   **je**   haljinu] Vid kupio?

    how   expensive me.*dat Aux.* dress   Vid bought

  c. [[Koliko **mi**   **je**   skupu]   haljinu] Vid kupio?

    how   me.*dat Aux.* expensive dress   Vid bought

   Furthermore, the subject may be placed after the whole wh-phrase, as in all of the examples in (50), but it may also be placed within it, to mirror the subject placement in WH_{FR}.

51. a. [[Koliko **mi**   **je**   Petar skupu]   haljinu] kupio?   *Cf. (48)*

    how   me.*dat Aux.* Petar expensive dress   bought

  b. [[Koliko **mi**   **je**   skupu]   Petar haljinu] kupio?   *Cf. (49)*

    how   me.*dat Aux.* expensive Petar dress   bought

   The distribution of clitics in (50) and (51), as well as in free relatives, can be accounted for if clitics are placed in the second position by being recursively placed after the first constituent.

   A question may arise whether, if splits are derived by fronting a part of the constituent (Progovac 2005), the fronted part is inside the CP. If it is not the case, the proposed analysis of free relatives would be brought into doubt. However, when a constituent is split, the clitics follow its fronted part, as shown in (52), just as they follow the first constituent/prosodic word in a *bona fide* CP (declarative and interrogative).

Progovac (2005) suggests that the fronted part of a wh-split is within the CP layer of the clause.

52. [Koji **mu** **je** (Dan) sat] (Dan) preporučio?

 which him.dat *Aux* Dan watch recommended

 'Which watch did Dan recommend to him?'

Finally, in FRs where WH$_{FR}$ is simplex, as in (53), and thus no splitting is involved, clitics also follow WH$_{FR}$.

53. Vid je pojeo što **mu** **je** Dan ponudio.

 Vid *Aux* eaten what him.dat *Aux* Dan offered

 'Vid ate what Dan offered him.'

---

 [1] The same parameters (applied to the head NP of a headed relative clause) are also responsible for different analyses proposed for headed relatives. I address these in section 2.2, footnote 9.

[2] It has been proposed in the literature that FRs are just bare CPs (Rooryck 1994, Jacobson 1995), without being modifiers of a null head. See also Izvorski 1998 for relevant discussion.

[3] As a reviewer points out, languages differ in which kinds of matching effects they observe. Often, differences are found even within a single language. Here I illustrate the matching effect for Croatian in object free relatives.

[4] For simplicity, I use the term HR to refer to the head NP modified by a relative clause.

[5] Arguments presented in the paper also argue against proposals along the lines of Caponigro 2002, which place WH_{FR} in the [Spec, DP] of a silent D^0 to which FR is a complement.

[6] Following orthographic conventions of Croatian, I write the WH_{FR} that contains *god* ('ever') as two words. This representation does not necessarily coincide with the prosodic status of such a complex WH_{FR}. See footnote 17 and the Appendix for further relevant considerations.

[7] In Croatian, an anaphor contained in the subject of the embedded declarative clause cannot be bound by the matrix subject either, as illustrated in (i):

(i) *Vid je mislio [$_{CP}$ da su svoje slike   na rasprodaji.]

   Vid is thought   that are self's pictures on sale

   'Vid thought that pictures of himself were on sale.'

In English, however, this is possible, as shown in (ii):

(ii) John$_i$ thought [$_{CP}$ that pictures of himself$_i$ were on sale.]

[8] The facts are more complicated than what is presented in the main text, where it is argued that binding relations in (17), (18), (19), (21) and (22) show that reconstruction is impossible for HRs. Data like (i) show that in certain cases, reconstruction of the head NP is possible, but only for HRs denoting degrees, as shown by the contrast between (i) and (ii) (see Carlson 1977, Heim 1987 and Grosu and Landman 1998 for the discussion of degree relatives).

(i) Količina $svog_i$ novca koju $Hana_i$ ima u banci iznosi sto dolara.

   amount self's money which Hana has in bank amounts-to hundred dollars

   'The amount of her_i money that $Hana_i$ has in the bank amounts to \$100.'

(ii) *Slika [$svog_i$ djeteta] koju $Hana_i$ ima na stolu je prekrasna.

   picture self's.<u>gen</u> child.<u>gen</u> which Hana has on desk is beautiful.

   'The picture of her_i child that $Hana_i$ has on the desk is beautiful.'

Even in degree relatives, reconstruction is restricted to environments where there exists no higher binder, as the contrast between (i) and (iii) shows:

(iii) Dan_i je obračunao količinu $svog_{i/*j}$ novca koji $Hana_j$ ima u banci.

   Dan *Aux* calculated amount self's money which Hana has in bank

   'Dan calculated the amount of his/*her money that Hana has in the bank.'

It is possible that the reconstruction of the head NP in a HR is restricted to equative sentences, regardless of the presence of a higher binder. I leave this issue for further research. For the purposes of this paper, the important comparison involves those examples of FRs and HRs where neither denotes a degree, a higher binder is available in both constructions, yet they still display different binding possibilities.

(i) Hana$_i$ će   prodati koje   god svoje slike$_{k/*i/*j}$ Vid$_j$ kaže da   je   Ivan$_k$ poslao.

Hana will sell   whichever selfs pictures   Vid says that *Aux* Ivan   sent.

'Hana will sell whichever pictures of himself Vid says that Ivan sent.'

[12] The CP might be adjoined to a null head, as in (2).

[13] It is possible for clitics to raise from an infinitival clause:

(i) Hana **ga**$_i$ želi   [udariti t$_i$.]

Hana him.<u>acc</u> wants hit.<u>inf</u>

'Hana wants to hit him.'

[14] According to Bošković (2001), second-position clitics in Serbo-Croatian are constrained by prosody, and not by syntax. Bošković argues that the clitics must occupy the second position in an intonational phrase, not in the clause. To exclude prosody effects, the WH$_{FR}$'s and head NPs of HRs are matched for "heaviness" throughout section 3. It is unlikely that HRs, but not FRs of the same heaviness, form separate intonational phrases, thus causing a difference in clitic placement. This indicates that, while prosody may play a part in the placement of clitics, syntactic make-up of the phrase must be taken into account.

[15] The auxiliary clitic, *je* is a second position clitic in Croatian.

[16] If the first constituent in a sentence is heavy, it is preferred for clitics not to follow that constituent ('clitic second'), as in (i) but the next constituent/word ('clitic third'), as in (ii).

(i) [Ova mala   djevojčica] **mu**   **je**   pokazala put.

this   little.<u>nom</u> girl.<u>nom</u>   him.<u>dat</u> *Aux* showed   way

(ii) [Ova mala   djevojčica] pokazala **mu**   **je**   put.

    this little.<u>nom</u> girl.<u>nom</u>   showed   him.<u>dat</u> *Aux* way

The 'clitic third' preference holds regardless of whether the subject is a heavy DP, a declarative CP, a FR or an NP modified by a HR, and thus does not influence the relevant contrasts shown in the following paragraphs. In all these cases, the 'clitic second' option is not ungrammatical, just dispreferred. I am grateful to an anonymous reviewer for pointing out the importance of the grammaticality of (i).

However, the 'clitic third' preference is not permissible if the first constituent is a heavy wh-phrase. Thus, (iii) is ungrammatical:

(iii) *[Koja mala   djevojčica] pokazala **mu**   **je**   put?

    Which little.<u>nom</u> girl.<u>nom</u>   showed   him.<u>dat</u> *Aux* way

    'Which little girl showed him the way?'

At this moment, it is not clear to me why the contrast between (ii) and (iii) obtains. I leave this question for further research.

[17] The fact that clitics can equally felicitously follow either the bare wh-word or *god* might indicate that *wh+god* ('wh+ever') is ambiguous between one PW and two. However, as an anonymous reviewer points out, no independent evidence for this claim seems to be available. Alternatively, this distribution of clitics might be an indication that clitics can target either the first PW or the first morphological word. In most cases the two coincide, but *wh+god* ('wh+ever') is a case where they come apart. For reasons of space I do not discuss here FRs introduced by a bare wh-word (without the nominal

restriction) or the FRs without 'ever'. In the former, clitics originating in the relative CP can also either follow or precede –*god*, while in the latter, they always follow the wh-word.

[18] Even though clitic movement in Croatian seems to be clause bound, it is worth checking that the ungrammaticality of (36) is not due to the fact that clitics do not occupy the second position in the *matrix* domain. This is shown by (i). In (i), clitics are placed in the second position of the matrix domain, but the sentence is still bad:

(i) *Vid **mu**$_i$ **je**$_j$ kupuje [$_{NP}$ Sonijev sat [$_{CP}$ koji   t$_i$ t$_j$ Dan   preporučio.]]

　　 Vid him.<u>dat</u> *Aux* buys   Sony's watch which   Dan recommended

[19] An anonymous reviewer suggests an analysis in which the WH$_{FR}$ is moved to [Spec, CP] and then the wh- *alone* raises out of the CP. Reconstruction effects observed in section 2 are thus accounted for by the reconstruction of *only the restrictor part* of the wh-phrase. The reviewer further suggests that clitic placement in FRs in (30), (31) and (33) is also explained by this analysis. He or she proposes the following structures for the relevant examples.

(i) Vid kupuje [koji   [$_{CP}$ god **mu**   **je** sat Dan preporučio.]]   *Cf. (30)*

　　 Vid buys   which ever him.<u>dat</u> *Aux* watch Dan recommended.

(ii) Vid kupuje [koji   [$_{CP}$ god sat   **mu**   **je** Dan preporučio.]]   *Cf. (31)*

　　 Vid buys   which   ever watch him.<u>dat</u> *Aux* Dan recommended.

(iii) Vid kupuje [koji   [$_{CP}$ **mu**   **je** god sat]   Dan preporučio.]] *Cf. (33)*

Vid buys   which   him.<u>dat</u> *Aux* ever watch Dan recommended.

Example in (36), where the head NP in HRs *cannot* host clitics, would not pose a problem for this analysis, in particular for (iii), proposes the reviewer, if a stipulation is made that an overt wh-element, if present, *must* serve as the host for the clitics. As the reviewer suggests, infinitival and reduced relative clauses, where the head NP is external to the CP, but an overt wh-element is absent, can be used to check whether this is in fact true. If the analysis proposed by the reviewer is correct, we expect that in those cases the head NP *is* able to host the clitics. This prediction is, however, not borne out. In Croatian infinitival and reduced relatives, the head NP cannot host clitics. Rather, clitics follow the first constituent in the relative clause. This is illustrated in (iv) – (vii). (Note that prepositional phrases can *never* be split by clitics.)

(iv) Čovjek [za upoznati **<u>ga</u>**   s   roditeljima.]   *Infinitival relative clause*

   Man   for introduce him.<u>acc</u> with parents

   'A man to introduce to one's parents.'

(v) *Čovjek [**<u>ga</u>**   za upoznati s   roditeljima.]

    Man   him.<u>acc</u> for introduce with parents

(vi) Medalja [dodijeljena **<u>mu</u>**   za   pobjedu.]   *Reduced relative clause*

   Medal   awarded   him.<u>dat</u> for win

  'A medal awarded to him for winning.'

(vii) *Medalja [**<u>mu</u>**   dodijeljena za   pobjedu.]

Medal   him.<u>dat</u> awarded   for win

Given the data from infinitival and reduced relatives, I conclude that the wh-part of WH$_{FR}$ does not leave the CP, as the reviewer suggests. The discussion, in fact, gives support to the present analysis, since it shows that even when the wh-element is not present, the head NP in a HR *cannot* host clitics. The reviewer might be correct in proposing that only the nominal restriction of WH$_{FR}$ reconstructs into its base position. This is, I believe, compatible with the Comp Account of FRs.

[20] The same argument can be made by using examples in which the fronted FR/HR/question is a topicalized/scrambled object of the matrix clause.

[21] Similar judgments obtain when matrix clitics are placed inside a declarative CP that is the subject of the sentence.

(i) [[$_{CP}$ Da   Dan ide]   nanijelo **mu**   **je**   uvredu.]

that   Dan goes   brought him.<u>dat</u> *Aux* offence

'That Dan is leaving offended him.'

(ii) *[[$_{CP}$ Da **mu**$_i$ **je**$_j$ Dan ide]   nanijelo t_i t_j uvredu.]

that him.<u>dat</u> *Aux* Dan goes   brought   offence

In (ii), the matrix clitics occupy the second position in the matrix domain, but nevertheless, the sentence is bad.

[22] Note that (i), (ii) and (iii) are not ungrammatical, just dispreferred. This indicates that the FR indeed occupies what counts as the first position in the clause. See also footnote 16.

(i) [FR Tko god laže] **mu** **je** nanio uvredu.

    who ever lies him.<u>dat</u> *Aux* brought offence

    'Whoever lies offended him.'

(ii) [CP Gdje Dan živi] **mu** **je** nepoznato.

    where Dan lives him.<u>dat</u> *Aux* unknown

    'Where Dan lives is unknown to him.'

(iii) [[CP Da Dan ide] **mu** **je** nanijelo uvredu.]

    that Dan goes him.<u>dat</u> *Aux* brought offence

    'That Dan is leaving offended him.'

[23] Thus, Move-and-Project analyses, as proposed by Larson (1998), Iatridou, Anagnostopoulu and Izvorski (2002), Cable (2005) and Donati (2005), although they can elegantly account for the matching effects, cannot be the right account of Croatian FRs.

[24] The HRs in (i) and (ii) have been constructed so that they prosodically match the FRs in (40) and (41), in order to rule out possible effects of prosody on the placement of clitics. To achieve this, the relative operator, *koji* ('which') has been replaced by the complementizer *što* ('what/that'). This manipulation does not affect the distribution of clitics, as the examples below show.

(i) [NP Pas [CP što   laje]] nanio   **mu**   **je**   uvredu.

   dog   what barks brought him.<u>dat</u> *Aux* offence

   'A/the dog that barks offended him.'

(ii) [NP Pas **mu**i   **je**j [CP što   laje]] nanio   tᵢ   tⱼ uvredu.

   dog him.<u>dat</u> *Aux*   that barks brought   offence

[25] Recall from footnote 16 that a sentence like (i) is grammatical, indicating the subject DP does count as the constituent occupying the first position in the clause.

(i) [NP Čovjek [CP koji   laže]] **mu**   **je**   nanio   uvredu.

   man   which lies   him.<u>dat</u> *Aux* brought offence

[26] Both External-Head analysis and the Matching analysis (Sauerland 1998, 2002) fare equally in accounting for anti-reconstruction effects in Croatian HRs. On the other hand, neither can capture the reconstruction effects observed in Croatian degree relatives.

[27] Bury (2003) proposes that the FR in (i) has the structure in (ii), where the copy of *who* in the [Spec, CP] is the one which is pronounced.

   (i) I don't like who you just met.

   (ii) I don't like [DP [DP <who>] [CP <who> you just met <who>]]

This kind of analysis is in principle compatible with the facts presented in the paper, as long as the copy of *who* at the bottom of the chain is the one that is interpreted. However, Bury's claim on pg. 171, that the restriction of WH_FR must be interpreted in the copy that

heads the construction, because otherwise the relative clause would have no antecedent, is incompatible with the presented data. If the restriction of the WH$_{FR}$ must be interpreted FR-externally, we do not expect any reconstruction effect, contrary to fact.

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