Wh-Questions in Russian Sign Language: in Search of a Syntactic Model

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Abstract

This paper is an attempt at constructing a syntactic model that would account for the most common surface word orders in wh-questions in Russian Sign Language (RSL). Within this attempt I assume a very simple tree architecture and a more complicated, multi-step pattern of movement. Direct wh-questions with rightmost wh-phrases are derived as follows: first, the wh-phrase moves to the Specifier of Foc, and then the rest of the TP is topicalized. The so-called double constructions are derived by further moving another copy of the wh-phrase further left (presumably, to the 'standard' SpecCP position).

The first part briefly describes the mainstream approach to dealing with wh-questions across languages within the formal framework. In the second part I present a quick summary of the main relevant data for American Sign Language (ASL) and RSL. The third part presents two existing syntactic models for ASL and points out their shortcomings. The fourth part is a proposal of an alternative syntactic model. In the concluding fifth part I outline the directions for further research. The appendix handles the glossing conventions adopted in this paper.

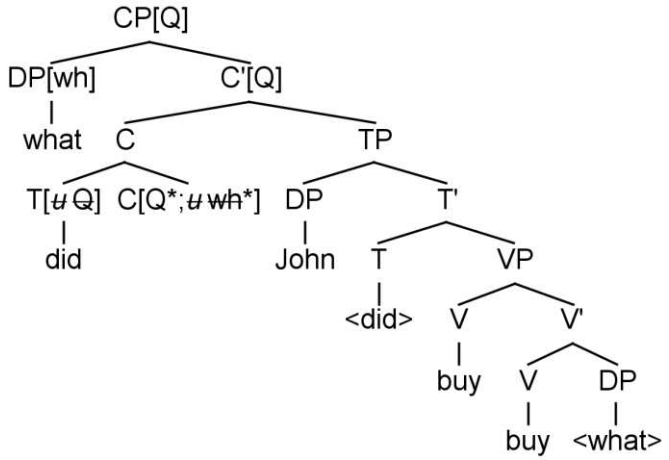
1. Wh-questions within the formal framework

Within the formal framework, the traditional typology of languages with respect to their wh-question formation patterns includes (i.) languages with (leftward) wh-movement, (ii.) languages with no wh-movement (in-situ languages). English is an example of the first type, i.e. in English the wh-phrase moves from the position in which it receives semantic interpretation to the left periphery of the syntactic tree. Traditionally, the Specifier of the Complementizer Phrase (SpecCP) is considered the landing site for wh-phrases. Thus, in (1) the wh-phrase what has moved out of the Object position and arrived at SpecCP:

(1) What did John buy <what>? [Eng]

(1)' is a variant of graphic representation of (1):

(1)'



In languages like Chinese, no such movement occurs overtly; the wh-phrase remains in situ (lat. 'in place'), hence the term wh-in-situ languages:

(2) ni xihuan shei? [Chinese]
you like who
'Who do you like?' (Huang 1982, (1))

Instead, as Huang 1982 proposes, wh-phrases move at the level of Logical Form, resulting in the following logical representation of (2):

(2)' [shei$_i$ [ni xihuan e$_i$]]
who you like (Huang 1982, (2))

This is, in a nutshell, the classical story of wh-question formation across languages. However, as we will see from the next part, sign languages (at least some of them) pose a problem for the traditional analysis.

2. Data from ASL and RSL

In this part of the paper I will present the main relevant data from ASL (as reported in Neidle et al. 1998 (NMLBK)) and RSL (as collected by myself[1]). The data from the two

[1] The examples presented in this paper were elicited mostly from one informant (Inf. 1), although the major facts about wh-question formation patterns in RSL have been confirmed to me by numerous RSL signers. Inf. 1

languages seem rather similar in general outline, and, therefore, a syntactic model correctly accounting for the facts of one language should in principle be capable (with a due amount of fine-tuning) of doing so for the other.

In ASL, RSL, and at least some other sign languages[2], wh-phrases in direct wh-questions regularly occur in the rightmost position:

(3) wh
HATE JOHN WHO[3] [ASL]
'Who hates John?' (NMLBK, (20))

(4) wh
JOHN SEE YESTERDAY WHO [ASL]
'Who did John see yesterday?' (NMLBK, (21))

(5) [RSL]
a. KILL WOMAN WHO? (Inf. 1, judgm.)
b. KILL WOMAN IX-a^{-} WHO? (Inf. 1, post-prod.)
'Who killed the woman?'

(6) IX-2 BUY YESTERDAY WHAT? [RSL] (Inf. 1, judgm.)
'What did you buy yesterday?'

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is a bimodal bilingual (a hard-of-hearing child of deaf parents) with native competence in both RSL and Russian. Most of the examples were elicited in the following manner: first, the informant was asked to translate the sentence of interest from Russian into RSL (while I am aware that the translation method can cause interference and trigger usage of manually coded Russian, I think it was justified in this case, since Inf. 1 is well aware of the difference between RSL and manually coded Russian); then the informant was presented with several surface order options (glossed in Russian or signed by me) for the same sentence and was asked to provide acceptability judgments (and additional comments if any). The entire process was videotaped. Some of the data were similarly obtained via Skype sessions (which were also recorded). Each example thus obtained is followed by a comment in brackets: 'judgm.' refers to an acceptability judgment provided by the informant for an option suggested by me, 'pre-prod.' means the example was signed by the informant herself prior to seeing the pre-designed options, 'post-prod.' means the example was signed by the informant after seeing the options. Now, it is important to note that sometimes pre-production utterances were indeed seemingly affected by the Russian stimulus, and later, when faced with this very order in pre-designed options, the informant would label them manually coded Russian. I do not include such examples as grammatical.

[2] In Brazilian Sign Language, for one (see Lillo-Martin & Quadros 2006).

[3] I try to preserve the authors' notation to the maximum, including non-manual markers. However, since non-manual marking might be very confusing and hard to interpret, I do not provide non-manual markers for my examples and for now remain agnostic about how exactly non-manual marking interacts with signing and how taking non-manual marking into consideration might affect my analysis. In examples from NMLBK I normally omit brackets and traces, which are indicative of their analysis, when they are irrelevant.

(7) IX-2 BUY IX-a BOOK WHEN? [RSL] (Inf. 1, judgm.)
'When did you buy this book?'

Now, while (7) might be interpreted as a wh-in-situ construction, examples (3—6) disable such an interpretation. In (3) and (5) the Subject is clearly not in situ (both languages are SV[4]), and in (4) and (6) the Object follows the adverbial YESTERDAY while an in-situ Object would precede it.

It is claimed in NMLBK and Petronio & Lillo-Martin 1997 (P&L) that ASL also allows optionally leaving wh-constituents in situ:

(8) wh
JOHN SEE WHO YESTERDAY [ASL]
'Who did John see yesterday?' (NMLBK, (16))

According to my data and observations, leaving the wh-phrase in situ in direct questions is not common in RSL.

Besides, both ASL and RSL allow so-called 'double' constructions that have wh-elements both in the leftmost and in the rightmost position:

(9) wh
"WHAT" JOHN BUY "WHAT"[5] [ASL]
'What, what did John buy?' (NMLBK, (28))

(10) WHO KILL WOMAN WHO? [RSL] (Inf. 1, judgm.)
'Who killed the woman?'

(11) WHAT IX-2 BUY YESTERDAY WHAT? [RSL] (Inf. 1, judgm.)
'What did you buy yesterday?'

Finally, the above described surface orders can coexist with topics[6] on the left:

[4] The data on the basic word order in RSL are not all that unambiguous. Depending on a variety of factors (such as animacy of the Object, its syntactic 'heaviness', aspect on the Verb, etc.), surface orders in RSL can be either SVO or SOV. For more information see Kimmelman 2010. In any case, the Subject necessarily precedes the Verb.

[5] NMLBK use "WHAT" in inverted commas to gloss a generic wh-sign, which, as they claim, behaves like a pronominal with respect to the antecedent wh-signs.

(12) [ASL]

a. wh tm2 wh
WHO VEGETABLE PREFER POTATO WHO
'Who, as for vegetables, who prefers potatoes?'

b. tm2 wh
VEGETABLE WHO PREFER POTATO WHO
'As for vegetables, who, who prefers potatoes?' (NMLBK, (29), (30))

(13) [RSL]

a. [WOMAN]$_{TOP}$ KILL <WOMAN> WHO?[7] (Inf. 1, pre-prod.)

b. WHO [WOMAN IX-a^{-}]$_{TOP}$ KILL <WOMAN> WHO? (Inf. 1, post-prod.)

c. [WOMAN IX-a^{-}]$_{TOP}$ WHO KILL <WOMAN> WHO? (Inf. 1, post-prod.)
'(This) woman, who killed [her]?'

d. [IX-2]$_{TOP}$ [BOOK IX-a]$_{TOP}$ <IX-2> BUY <BOOK IX-a> WHEN? (Inf. 1, pre-prod.)
'You, this book, when did [you] buy [it]?'

e. [IX-a BOOK]$_{TOP}$ WHEN IX-2 BUY <IX-a BOOK> WHEN? (Inf. 1, judgm.)
'This book, when did you buy [it]?'

3. Existing proposals for ASL

Clearly, data from SL are problematic for the classical typology of wh-phrases, since neither traditional overt leftward wh-movement, nor wh-in-situ can account for the above-described surface orders.

3.1. P&L: leftward wh-movement in ASL

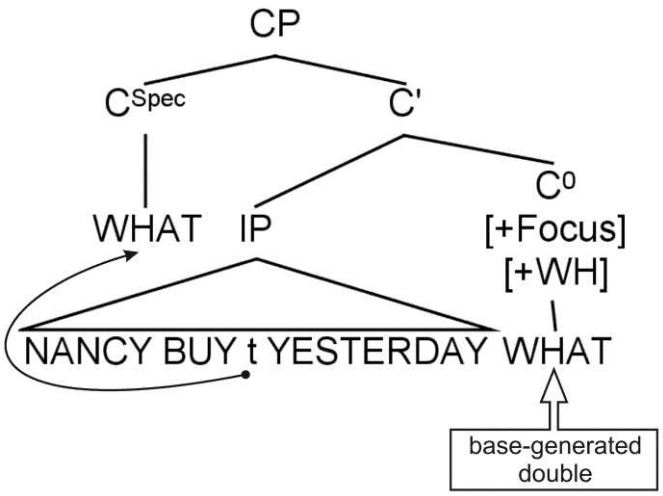
P&L set forth a hypothesis that in ASL there is (optional) wh-movement to SpecCP. However, while SpecCP is located on the left in the syntactic tree, the head C is on the right. The C position can be occupied by a base-generated wh-element (obviously, a head only), called a 'double'. Some non-wh doubles, such as modals or quantifiers, can also occur in this position. The element in this position gets a focused reading. The moved wh-phrase, called the 'twin', occupies the leftward SpecCP position and can remain unpronounced, which

[6] Topicalization seems to be an extensively used mechanism in sign languages in general.

[7] Although Inf. 1 produced this example herself, later, when she was assessing a pre-designed option with the same order, she noted that this order can be confusing and can be used for the question 'Who did the woman kill?'. Inf. 1 herself suggested that it is the context that is crucial in this case. Despite potential confusion, Inf. 1 showed a persistent preference for examples with additional topicalization.

should account for the surface order in which only the rightward wh-element is present. The architecture and the derivation process should be clear from the following tree:

(14)



(Petronio & Lillo-Martin, (20a))

The most obvious problem of this analysis is that it does not predict sentences in which there is a full-fledged wh-phrase on the right, not just a head. P&L claim such sentences to be ungrammatical, but this claim is empirically challenged by NMLBK:

(15) wh
JOHN BUY YESTERDAY WHICH COMPUTER [ASL]
'Which computer did John buy yesterday?' (NMLBK, (36))

According to our data, RSL, too, allows for rightward wh-elements that are unmistakably phrases:

(16) [RSL]

a. IX-2 BUY BOOK WHAT? (Inf. 1, judgm.)
'What book did you buy?'

b. HELP-1 DRUG WHAT? (Inf. 1, judgm.)
'What drug will help me?'

It is true, though, that in double constructions repeating the entire phrase on the right might be dispreferred:

(17) [ASL]

a. wh
WHICH COMPUTER JOHN BUY YESTERDAY WHICH

b. wh
WHICH COMPUTER JOHN BUY YESTERDAY “WHAT”

c. wh
*WHICH COMPUTER JOHN BUY YESTERDAY WHICH COMPUTER

(NMLBK, (37—39))

‘Which computer did John buy?’

(18) [RSL]

a. DRUG WHAT HELP-1 WHAT? (Inf. 1, judgm.)

b. ?DRUG WHAT HELP-1 DRUG WHAT? (Inf. 1, judgm.)[8]

‘What drug will help me?’

I agree with NMLBK, that the most plausible explanation for the degradedness of (17c) and (18b) is that a full wh-phrase on the right in the presence of its copy on the left is considered redundant.

3.1. NMLBK: rightward wh-movement in ASL

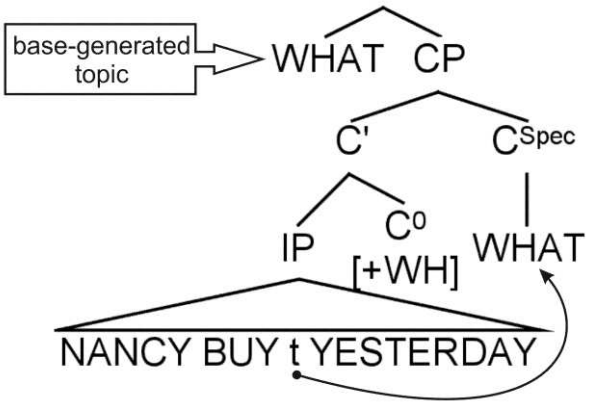
A group of researchers from Boston University (NMLBK) suggested an alternative proposal for wh-questions in ASL. They claim that ASL exhibits rightward wh-movement to SpecCP, which is located on the right. According to their proposal, in double constructions the leftward wh-phrase is a topic, base-generated outside CP[9]:

(19)[10]

[8] Inf. 1 claimed that (18b) is, in principle, acceptable, but worse than (18a). She also noted that (18b) is likely to be uttered by a signer who doesn’t know Russian well. In any case, according to Inf. 1, there is no strong ungrammaticality here, which would be expected if the degradedness resulted from structural reasons. See also (20b).

[9] The highest node is not labelled in NMLBK; presumably, it is TopP.

[10] I redraw the tree from P&L, (20b); this tree corresponds to an earlier version of the rightward wh-movement analysis, however, the structure is the same as in NMLBK.



NMLBK claim that distribution of topics in ASL questions, such as in (12a,b) supports the analysis of leftward wh-phrases as topics. However, it is exactly this part of their proposal that looks most implausible to me. The idea of treating wh-phrases as topics seems counterintuitive. Indeed, topics contain 'old' material, something that is presupposed either by the context or by the previous discourse. How a wh-element can be presupposed is unobvious to me. It is true, though, that a part of a wh-phrase can be topicalized. Consider the following examples:

(20) [RSL]

a. $[\text{BOOK}]_{\text{TOP}}$ IX-2 BUY <BOOK> WHAT?[11] (Inf. 1, judgm.)

b. $[\text{BOOK}]_{\text{TOP}}$ IX-2 BUY <BOOK> BOOK WHAT? (Inf. 1, judgm.)
'Book, what (book) did you buy?'

In (20) (and (21)) the idea of some book is somehow available from the context (say, the speaker might know that their addressee was going to buy a book, but does not know what book they eventually bought), but what exactly the speaker is asking about this unspecific book has no way of being 'old' information.

Apart from that and the non-standard tree architecture, the rightward analysis of wh-sentences in ASL has a problem of empirical kind. Lillo-Martin & de Quadros 2006 adduce data on acquisition of ASL and LSB, showing that deaf children first start using sentences

[11] Note that Russian has an equivalent construction:

(21) Knigu ty kupil kakuju? [Rus]
Book-ACC you bought-SG-MASC what-ACC-SG-FEM
'Book, what (book) did you buy?'

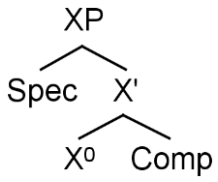
In (21) knigu is topicalized. For now I refrain from any strong claims about Russian, but I think that it is plausible that while neutral direct questions in Russian are formed through regular leftward wh-movement, there is an alternative, discourse-oriented option.

with wh-elements on the left or in situ, while questions with rightward wh-elements and double constructions emerge in their speech much later. The rightward analysis might have difficulties accounting for these data. Whereas I do not have any relevant data on acquisition of RSL, the model I propose in the next part, if applied to ASL, should be slightly less problematic in this respect, although one will still have some explanation to do.

4. Alternative model: simple architecture, multi-step movement

I propose an alternative model for wh-question formation in RSL. This model is based on a simple tree architecture and a multi-step movement pattern. In the terms of architecture our analysis is consistent with Kayne's Antisymmetry Theory (Kayne 1994). Kayne postulates a universal and simple Specifier-Head-Complement architecture:

(22)

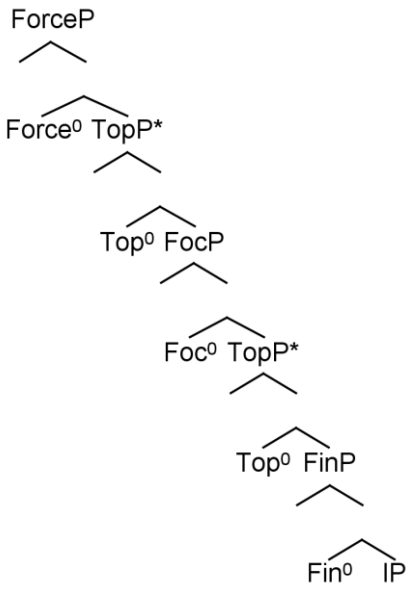


Any surface deviation from this order results from movement that is universally leftward[12].

I also assume some moderate cartographic intuitions in line with Rizzi 1997. Rizzi breaks up the complementizer 'zone' (the one between IP/TP and CP). He splits C into two functional projections, based on its functions as an interface between the proposition contained in IP and a higher order structure (e.g. the matrix clause): Force (sentence type) and Fin (finiteness)[13]. In between Rizzi places a system of Top (topic) and Foc (focus) projections. As a result, the left periphery of the tree starts looking like this:

(23)

[12] For example, Soare reinterprets data from Japanese in line with Antisymmetry Theory, showing how multi-step leftward movement can help derive various surface orders (Soare 2007).
[13] This distinction is not so relevant within this paper, so, I preserve the traditional C projection.

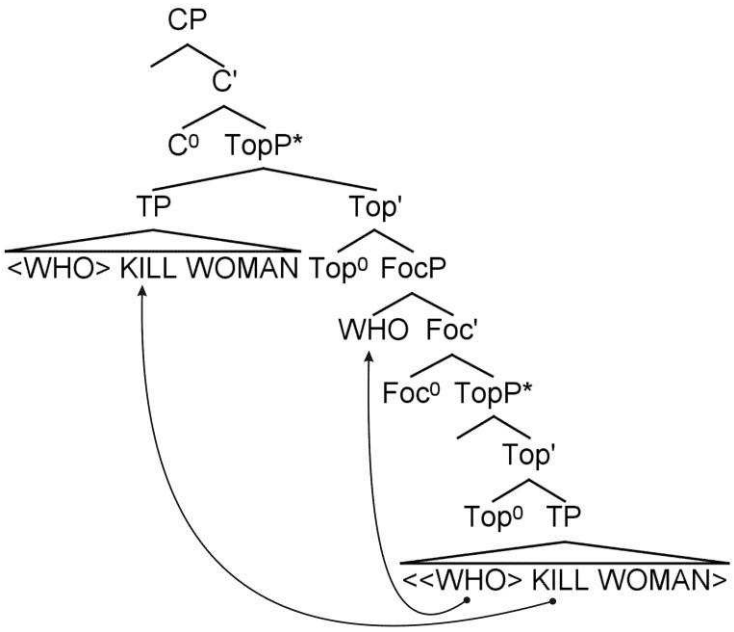


(Rizzi 1997, (41))

Topic in Rizzi's system is an element that contains contextually salient information that is presupposed. Topic is accompanied with a comment that contains new information. The notion of Focus is in some way inverse: Focus contains new information that is emphasized and is accompanied with contextually salient information that is presupposed.

The core intuition of the model I propose is that in direct wh-questions in RSL the wh-phrase moves to the Spec of Foc, and the rest of the TP gets topicalized. This is how we derive the surface word order with the wh-phrase in the rightmost position. Thus, a tree for (5a) will look like this:

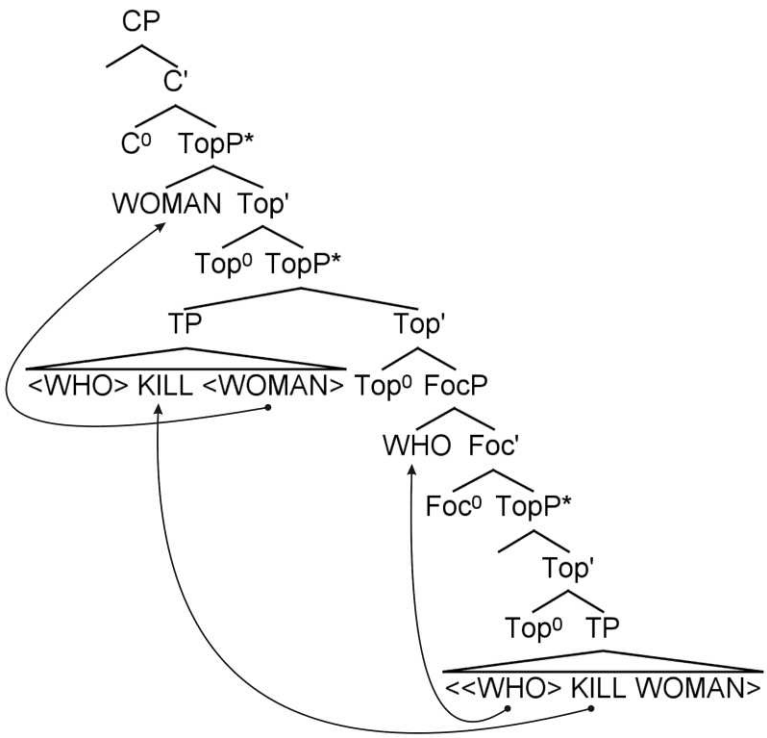
(24)



While some might oppose the idea of regularly treating wh-phrases as focalized elements, I maintain that it is a very intuitive interpretation of questions. Indeed, in direct wh-questions most of the information is trivially 'old', presupposed (when one asks who killed the woman, one normally presupposes that the woman was killed), apart from the 'lacking' one, the one expressed by the wh-phrase. Surely, focus in questions is different in the semantic-pragmatic sense from focus in declaratives. Question focus does not provide any new information about the topicalized material itself (a redundant comment, actually, since the pragmatic intension of direct questions is not to inform, but to inquire), but it specifies what we want to know about the topic, thus, providing some new information.

Accounting for sentences with the wh-phrase in the rightmost position in which some material is further topicalized out of the already topicalized TP (e.g. (13a,d)) is rather straight-forward. According to Rizzi 1997, Topic projections are recursive. Indeed, the semantic-pragmatic interpretation of Topic does not impose any constraints on the nature of the comment, i.e. the comment can also contain presupposed material. In other words, there can be multiple topics in a sentence. Here is the tree for (13a):

(25)



However, we also have to account for double constructions (e.g. (10), (11)), and, crucially, for double constructions with additionally topicalized material on the left (e.g. (13c,e)). The most obvious option is to posit another movement step, i.e. to claim that another copy[14] of the wh-phrase moves further left. The problem is that, unlike Topic, the Focus projection is not recursive, since Focus should be accompanied with presupposed material (Rizzi 1997). Consequently, multiple foci in a sentence are not allowed.

Intuitively, though, this constraint on the number of focalized elements should apply to different elements only, not to different instantiations of one and the same element. Therefore, one could in principle propose another Focus-like projection between the higher Topic and C that would be somehow interpretationally different from the lower Focus[15] and could only host copies of the already focalized element. For now, though, I do not have any data that would prompt introducing another functional projection into the left periphery (which is not to mean that I completely reject this idea).

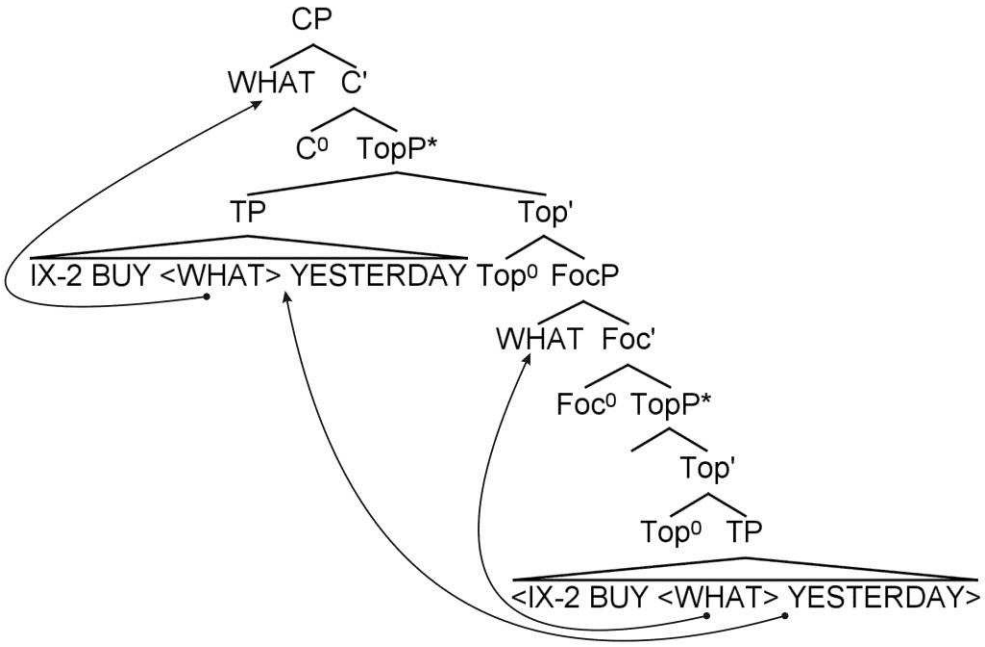
An alternative option would be to claim that another copy of the wh-phrase can optionally move to SpecCP, as in ordinary wh-movement. A more precise claim would probably be that another copy of the wh-phrase always moves to SpecCP (since optionality in wh-movement is clearly undesirable), however, the higher copy does not always get pronounced. Certainly, one has to explain why it is the lower copy that has to be pronounced. My explanation is that within a topic-comment structure the topic necessarily requires a comment, which cannot be phonologically null. Since direct wh-questions in RSL are preferably organized as topic-comment structures, omitting the focalized wh-phrase is prohibited. In this case the higher copy becomes redundant, however, it is sometimes[16] pronounced, which is not surprising, considering that sign languages are known for their tendency to double information. So, this is how the tree for (11) should look like under this account:

(26)

[14] I assume the copy theory of movement, within which the movement operation is conceptualized as moving a copy of an element without deleting the 'original'. Normally, only one of the copies gets pronounced. However, under my account it does not have to be necessarily so.

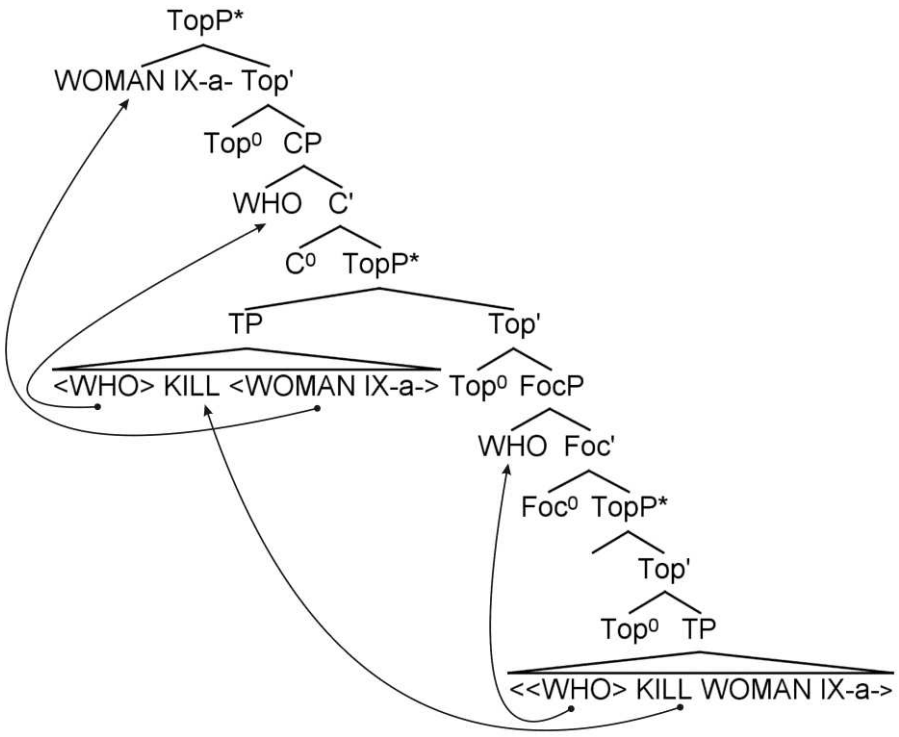
[15] It could be, for instance, emphatic focus; however, for now I do not have any solid evidence that double constructions are perceived as more emphatic. For example, Inf. 1 rejects this idea.

[16] Some signers actually prefer double constructions.



Assuming a tree like in (26) necessarily entails assuming a position outside CP for hosting topics that occur on the left periphery of double constructions. It does not have to be a position reserved for topics only, but for now I will label it as Top as well. Here is a tree for (13c):

(27)



Crucially, a structure like (27) should be in principle unembeddable. Indeed, a matrix predicate selects a complement based on its clause type, not on whether it contains topicalized material or not, i.e. it looks for a CP, not a TopP.

Whether this constraint exists or not needs to be checked empirically. However, for now my data on embedded wh-clauses are scanty and inconclusive. One of my tentative observations is that, apparently, embedded questions in reported speech do not preserve the information structure of the reported material. This is intuitively valid: a new communicative situation requires a new information structure. Instead, such sentences seem to exhibit regular wh-movement[17]. Preserving the topic-comment structure of the reported material, in its turn, is perceived as (at least partial) quotation:

(28) [RSL]

a. I-V-A-N ASK-1 WHO KILL WOMAN (Inf. 1, pre-prod.)
   'Ivan asked me who had killed the woman.'
b. I-V-A-N WANT KNOW WHEN IX-2 BE-PAST BUY BOOK (Inf. 1, judgm.)
   'Ivan wants to know when you bought the book.'
c. I-V-A-N ASK-1 [KILL WOMAN IX-a WHO]$_{RS}$ (Inf. 1, judgm.)
d. I-V-A-N ASK-1 [WHO KILL WOMAN IX-a WHO]$_{RS}$ (Inf. 1, judgm.)
   'Ivan asked me, 'Who killed this woman?''
e. I-V-A-N ASK-1 [[WOMAN IX-a]$_{TOP}$ WHO KILL <WOMAN IX-a> WHO]$_{RS}$ (Inf. 1, judgm.)
   'Ivan asked me, 'This woman, who killed (her)?''

(28), thus, does not clarify the structure of the left periphery in RSL, but indirectly supports the plausibility of modelling direct wh-questions in RSL with the help of discourse-oriented functional projections.

5. Conclusion

Further research on this and related issues should primarily focus on collecting a lot of diverse data on embedding wh-clauses into sentences with various semantics/pragmatics in order to elaborate the left periphery of the syntactic tree in RSL. Non-manual marking in questions should be rigorously studied and incorporated into the analysis. It would also be

[17] Again, the current data are insufficient to conclude whether it is obligatory.

enlightening to investigate the phenomenon of partial quotation and free indirect discourse in RSL and other languages in the context of how they relate to the actual and reported information structure.

Appendix: glossing conventions

WOMAN — English equivalents of signs are glossed in capital letters.

I-V-A-N — fingerspelt material is glossed as hyphenated.

IX — a pointing sign. Every pointing sign is furnished with a suffix that specifies the locus towards which the pointing is performed (IX-a). Suffixes 1 and 2 correspond to the first and the second person respectively.

HELP-1 — directional verbs are also furnished with suffixes to indicate argument encoding (the subscripts to the left and to the right of the verb indicate the starting and the ending point of movement respectively).

IX-a^{-} — the 'minus' superscript after the locus suffix means that pointing is towards a lower-than-neutral locus[18].

$[]_{TOP}$ — the $_{TOP}$ subscript marks topicalized material.

$[]_{RS}$ — the $_{RS}$ subscript marks the material perceived as (partial) quotation (the material under referential shift).

< > — angle brackets encompass the unpronounced copy of a moved element.

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[18] In the cited examples this presumably iconically reflects the perception of the killed woman as lying on the ground.

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