

Strategies of wh-coordination

Anikó Lipták (2011)

Universität Leipzig – Institut für Linguistik
PD Dr. Martin Salzmann
Sharing constructions: movement, multidominance or ellipsis?
04-046-2011
Simone Loi – LSLoiSimone@gmail.com

1. Main goals of the paper:

- Overview of the whole spectrum of coordinated multiple wh-questions (CMWQ) in all languages where this has been attested
- Syntactic analysis of their underlying structure
- Typological overview of the different structures

2. General picture of CMWQ

2.1 What is a CMWQ?

- (1)
- a. Wo und wann ist Chomsky geboren?
 - b. *Wem und was hast du gegeben?

- See also a similar construction in English:

- (2)
- What and when did you eat?

- The interpretation of these CMWQ is predominantly that of a single-pair question, which makes it different from normal multiple wh-questions.
- A question one could arise is if its structure really is a mono-clausal one, and what is the mechanism that generates such constructions.

- One could start the syntactic analysis by looking at all different types of constituents that can be coordinated.

2.2 Types of CMWQ

Starting with this approach, Lipták identifies three main types of CMWQ languages:

- **Adjunct CMWQ languages:**

only adjunct material can be coordinated

(3) _____

- | | |
|--|---|
| a. * <i>Wat en aan wie heb je gegeven?</i> | [*arg _{obl} & arg _{obl}] (Dutch) |
| what and to who have you given | |
| “What and to whom did you give?” | |
| b. * <i>Wat en waar heeft Jan gerepareerd?</i> | [*arg _{obl} & adj] |
| wat en waar has Jan fixed | |
| “What and where did Jan fix?” | |
| c. ?? <i>Wat en waar heeft Jan gegeten?</i> | [??arg _{opt} & adj] |
| what en where has Jan eaten | |
| “What and where did Jan eat?” | |
| d. <i>Wanneer en waarom ben je weggegaan?</i> | [✓adj & adj] |
| when and why aux you left | |
| “When and why did you leave?” | |

- **Free CMWQ languages:**

any type of constituent can be coordinated

(4) _____

- | | |
|--|--|
| a. <i>Co i komu Jan dał?</i> | [✓arg _{obl} & arg _{obl}] (Polish) |
| what and whom Jan gave | |
| lit. “What and to whom did Jan give?” | |
| b. <i>Kto i jak naprawił zlew?</i> | [✓arg _{obl} & adj] |
| who and how fixed sink | |
| lit. “Who and how fixed the sink?” | |
| c. <i>Co i dlaczego zjadłaś?</i> | [✓arg _{opt} & adj] |
| what and why ate | |
| “What and why did you eat?” | |
| d. <i>Gdzie i kiedy Jan się urodził?</i> | [✓adj & adj] |
| where and when Jan REFL born | |
| “Where and when was Jan born?” | |

- **Mixed CMWQ languages**

are languages of the type like English where only optional material can be coordinated, be that adjunct material or optional arguments

(5)

- | | |
|-----------------------------------|---------------------------------|
| a. *What and to who did you give? | $[* arg_{obl} \& arg_{obl}]$ |
| b. *What and where did you fix? | $[* arg_{obl} \& adj]$ |
| c. What and where did you eat? | $[\checkmark arg_{opt} \& adj]$ |
| d. When and why did you leave? | $[\checkmark adj \& adj]$ |

- **Summing up**

Table 1. Types of CMWQs patterns across languages and constructions

Pattern	No CMWQs allowed	“adjunct CMWQ”	“mixed CMWQ”	“free CMWQ”
wh-phrases used	—	adjuncts	adjuncts, optional arguments	adjuncts, optional, obligatory arguments
Example	Chinese Japanese (Whitman 2004–2007)	Dutch English _A (Whitman 2004–2007) Italian Spanish	Croatian multi-clitic construction (Gracanin-Yukse 2007) English _M (Gracanin-Yukse 2007) German (Haida & Repp in press)	Croatian single-clitic construction (Gracanin-Yukse 2007) Hungarian (Lipták 2003) Polish (Citko to appear) Romanian (Rațiu 2010) Russian (Gribanova 2009) Bulgarian (Citko & Gracanin-Yukse 2010)

3. Syntactic analyses

In this section we will look at the possible accounts for the patterns seen in the previous section.

3.1 Adjunct CMWQ languages

We can start with the question of whether these constructions are underlyingly monoclausal or biclausal.

(6)

- a. *Wanneer en waarom ben je weggegaan?*
when and why AUX you left
“When and why did you leave?”
- b. *Wanneer ben je weggegaan en waarom ben je weggegaan?*
when AUX you left and why AUX you left
- c. [_{CP} *Wanneer en waarom*] *ben je weggegaan?*
when and why AUX you left

It turns out for a series of properties that this construction is most probably bi-clausal:

(7)

-
- Waar heb je je fiets mee gerepareerd?*
R-what AUX you your bike with repaired
“With what did you repair your bike?”

preposition stranding in cases like in (7) in Dutch is assumed to be a valid clausality-tests:

(8)

- a. **Waar en wanneer heb je je fiets mee gerepareerd?*
R-what and when AUX you your bike with repaired
“With what and when did you repair your bike?”
- b. **Wanneer en waar ben je voor gekomen?*
when and R-what AUX you for come
“When and for what did you come?”

Therefore, examples like the ones in (8) seem to suggest that these constructions have an underlying bi-clausal structure.

There are different possible explanations for this surface structure, which we will be treating in the next section about mixed CMWQ languages.

3.2 Mixed CMWQ languages

3.2.1 Clausality inspection of mixed CMWQ languages

- Recall the pattern of mixed CMWQ languages, where only adjuncts and optional arguments can be coordinated:

- (9)
-
- CMWQs in English_M*
- *What and to who did you give?
 - *What and where did you fix?
 - ✓What and where did you eat?
 - ✓When and why did you leave?

Again, we can start by asking the same question, whether in these languages CMWQ are underlyingly mono-clausal or bi-clausal.

Once again the data seems to suggest that the underlying structure is bi-clausal:

- (10)
- Bi-clausal questions in English_M*
- *[What did you give] and [to who did you give]?
 - *[What did you fix] and [where did you fix]?
 - ✓[What did you eat] and [where did you eat]?
 - ✓[When did you leave] and [why did you leave]?

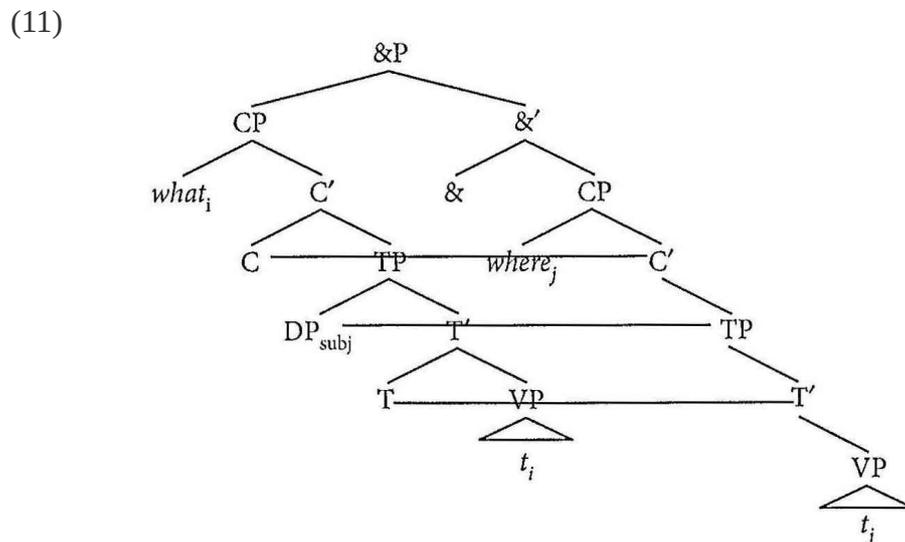
The grammaticality judgements of CMWQs match with those of bi-clausal constructions.

3.3 Mechanisms for biclausal CMWQs

If we assume that these constructions in these languages (i.e. adjunct CMWQ languages and mixed CMWQ languages) are indeed bi-clausal, we need an explanation to account for their surface form.

3.3.1 Multidominance

One way to account for these facts, is to assume that part of the structure is shared:



Data from Croatian seems to provide empirical evidence for this view:

(12)

- a. *Što je i kome je dao? [** arg_{obl} & arg_{obl}*]
 what AUX.3SG and whom AUX.3SG given
 “What and to whom did he give?”
- b. *Što si mu i zašto si mu popravio? [** arg_{obl} & adj*]
 what AUX him and why AUX him fixed
 “What and why did you fix for him?”
- c. Što će i kada će Ivan jesti? [*✓ arg_{opt} & adj*]
 what FUT.3SG and when FUT.3SG Ivan eat
 “What and where will Ivan eat?”
- d. Gdje mu je i kada mu je Petar
 where him AUX and when him AUX Petar
 pokazao novac? [*✓ adj & adj*]
 showed money
 “Where and when did Petar show him the money?”

There are two arguments related to the data in (12):

- first, there cannot be any obligatory arguments in the coordination
- second, and most importantly, the so called 2nd position clitics must occupy a very high position

These seem compatible with an ellipsis account, the only problem is that exactly in case of sluicing 2nd position clitics can never be spelled out:

(13)

Jan ne zna što (*mu je), ali zna da mu je
 Jan not knows what HIM AUX but knows that HIM AUX
 Ivan nešto kupio.
 Ivan something bought
 “Jan does not know what, but he knows that Ivan bought something.”

This seems to explain the pattern in Croatian, however, Lipták argues that strategies of wh-coordination vary starkly cross-linguistically, and that there is evidence that in English the strategy is TP-ellipsis

3.3.2 Ellipsis

The (backward) ellipsis of TP is an independently available mechanism in English:

(14)

It's not clear if [_{TP} ~~the police arrested the demonstrators~~] and when the police arrested the demonstrators.

- So the operation for the surface form of CMWQ in English would be the one in (15)

(15)

[What ~~did you eat~~] and [where did you eat]?
reduction through *ellipsis*

- One could argue that this could be an instantiation of RNR
- However, based on the crucial presence of *swiping*, Lipták's position is in defence of TP-ellipsis
- Swiping is a sluicing-specific mechanism in which the complement of a preposition appears before the preposition

(16)

- a. *Who from did Mary receive a package?
- b. Mary received a package, but I don't know who from.

- This mechanism seems to be available for CMWQ too:

(17)

- a. Who from and why did Mary receive a package?
- b. Who to and when did Chomsky lecture about syntax?

- Lipták admits that the examples are marked, but this is not due to swiping, being the examples still marked without swiping, possibly because the wh-phrases are PPs.

3.4 Free CMWQ languages

Turning now to the last type, the free CMWQ languages, we see of course that the scenario is completely different. In this case the argumental structure is one and the bi-clausal analyses is very hard to maintain.

In fact one of the two conjuncts would lack fundamental arguments that would lead to ungrammaticality.

Lipták provides compelling empirical evidence for the mono-clausality of free CMWQs from Hungarian:

(18)

- a. **Mit adtál és kinek adtál?*
what.A gave.NDEF.2SG and who.DAT gave.INDEF.2SG
“What did you give and to whom did you give?”
- b. **Mit javítottál meg és hol javítottál meg?*
what.A repaired.INDEF.2SG PV and where repaired.INDEF.2SG PV
“What did you repair and where did you repair?”
- c. *Mit ettél és hol ettél?*
what.A ate.INDEF.2SG and where ate.INDEF.2SG
“What did you eat and where did you eat?”
- d. *Mikor mentél el és miért mentél el?*
when left.2SG PV and why left.2SG PV
“When did you leave and why did you leave?”

In recent studies it has been proposed that the structure (in languages like Polish and Russian, which, however, lack object drop altogether!) is bi-clausal, and that the arguments are simply silent.

Evidence from Hungarian seems to show that this is not the case:
In Hungarian plural objects cannot be dropped

(19)

- a. *Itt van a könyv. Péter már elolvasta pro_{sg}.*
Here is the book Péter already PV-read.DEF.3SG
“Here is the book. Péter has read it.”
- b. *Itt vannak a könyvek. *Péter már elolvasta pro_{pl}.*
here are the book.PL Péter already PV-read.DEF.3SG
“Here are the books. Péter has already read them.”

Yet CMWQs are still grammatical, even if the hypothetical null element has to be plural:

(20)

Miket és hol javítottál meg?
what.PL.A and where repaired.INDEF.2SG PV
“What (things) and where did you repair?”

Another argument in favour of a mono-clausal account comes from verbal agreement.

- Hungarian verbal morphology shows agreement with the objects in definiteness
- Only definite objects can be dropped

Now, being wh-phrases indefinite, but hypothetical objects definite, we should expect to see definite verbal agreement on the verb.

This is not the case: definite object agreement morphology on the verb would even lead to

ungrammaticality:

(21)

Mit javítottál meg és hol
what.A repaired.INDEF.2SG PV and where
*javitott{-ad/ *-ál} meg pro_{sg}?*
repaired-DEF/INDEF.2SG PV
“What did you repair and where did you repair it?”

Again we can use the stranding test, which is an even more convincing argument for the mono-clausality of these constructions, given the results in the other types of languages:

(22)

- a. *Kinek_i és miért szerezted meg a t_i fényképét?*
who.DAT and why got.DEF.2SG PV the foto.POSS.3SG.A
“Whose photograph and why did you get hold of?”
- b. *Ki és kinek_i szerezte meg a t_i fényképét?*
who and who.DAT got.DEF.3SG PV the foto.POSS.3SG.A
“Who and whose photograph got hold of?”
- c. *Ki és melyik napján_i érkezett a hétnek t_i?*
who and which day.POSS3SG.ON arrived.3SG the week.DAT
lit. “Who and on which day of the week arrived?”
- d. *Kinek_i és miért ettél a t_i tortájából?*
who.DAT and why ate.2SG.INDEF the cake.POSS3SG.FROM
“Whose cake did you eat from and why?”

Stranding is a useful clausality-test for many languages, for not all languages have such a rich verbal morphology

(23)

Komu i kiedy zepsuł się samochód? (Polish)
who.DAT and when broke REFL car
“Whose car broke and when?”

3.5 Mechanisms for monoclausal CMWQs

If we assume that free CMWQs are indeed monoclausal we are confronted with the hard task of deriving its syntactic mechanism.

3.5.1 Small coordination

Perhaps the simplest way to deal with that, at least from a structural point of view, is the so called

“small coordination”:

- A &P whose constituents are two wh-phrases is moved to the position that these normally target (in Hungarian FocP):

(24)

[_{CP} [_{FocP} [_{&P} *mit_i* és *hol_j*] *javítottál* *meg t_i t_j*]]?
 what.A and where repaired.INDEF.2SG PV

However, the syntactic implementation of this strategy wouldn't follow straightforwardly, considering that this is a violation of the “Law of Coordination of Likes” (Williams 1981)

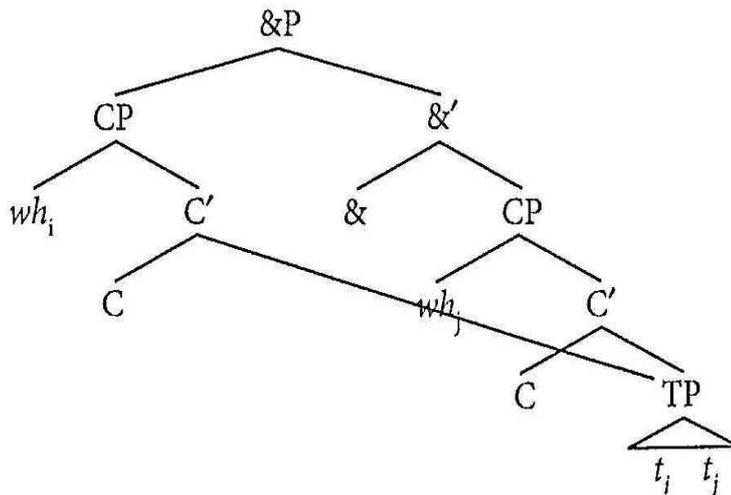
One way to deal with that could be to argue that constituents must be alike from a semantic and not from a categorial point of view (Schachter 1977, Grosu 1985, Lipták 2003)

Also the derivation has to happen by sideward movement of both wh-phrases to an unconnected &P that after that will merge to the rest of the tree.

3.5.2 Bulk sharing

One at first sight less intuitive way to deal with that is to postulate the existence of two left peripheries for these constructions. This strategy is referred to as “bulk sharing”.

(25)



This could also explain some phenomena related to free CMWQs which are problematic: the presence of material that can only occur in a very high position like question particles or speaker-oriented adverbs.

Example (26) shows the occurrence of question particles exclusively in coordinated multiple wh-

questions:

(26)

- a. *Oare cine (*oare) ce (*oare) va spune (*oare)?* (Romanian)
QPRT who QPRT what QPRT AUX say QPRT
“Who will say what?”
- b. *Oare cine și oare ce va spune?*
QPRT who and QPRT what AUX say
“Who and what will say?”

(27) shows the presence of a speaker-oriented adverb normally associated with a high position in the clause:

(27)

Kto i najważniejsze co powiedział? (Polish)
who and most.importantly what said
“Who and most importantly what said?”

Further evidence comes from superiority effects in Romanian:
Romanian shows superiority effects in simple multiple wh-questions:

(28)

- a. *Cine ce a văzut?*
who what has seen
- b. **Ce cine a văzut?*
what who has seen
“Who saw what?”

but these effects are absent in CMWQs:

(29)

- a. *Cine și ce ti-a spus?*
who and what to.you-AUX told
- b. *Ce și cine ti-a spus?*
what and who to.you-AUX told
“Who told you something and what was it?”

4. Typology of CMWQs

Table.2 summarizes what we have seen sofar

Table 2. Strategies of CMWQs in the languages under discussion

Language or construction	Pattern of CMWQs	Multiple fronting	Possible high material	Possible strategies
Dutch, English _A , Italian, Spanish	adjunct	no	— ²¹	(ellipsis) (RNR) (non-bulk sharing)
English _M	mixed	no	—	Ellipsis (RNR) (non-bulk sharing)
German	mixed	no	—	(ellipsis) (RNR) (non-bulk sharing)
Croatian multi-clitic construction	mixed	yes	✓ CLITICS	non-bulk sharing
Croatian single-clitic construction	free	yes	✓ HIGH ADVERBS	small coordination bulk sharing
Bulgarian, Polish, Russian	free	yes	✓ HIGH ADVERBS	small coordination bulk sharing
Hungarian, Romanian	free	yes	✓ HIGH ADVERBS, QUESTION PARTICLES	small coordination bulk sharing

Given this overview we can see the relevance of the availability of multiple fronting in a language in order to allow for mono-clausal CMWQs.

This follows straightforwardly under the current account.

Notice also that languages that lack wh-fronting altogether cannot allow for CMWQ either, because the TP cannot undergo ellipsis or RNR.

This leads to three generalizations:

- If a language does not have wh-fronting, it cannot have CMWQ
- If a language does not have multiple wh-fronting, it can have bi-clausal CMWQs only
- If a language has multiple wh-fronting, it must have strategies of CMWQs with a mono-clausal core, i.e. it must have small coordination and bulk sharing

5. References

- Grosu, Alexander. 1985. Subcategorization and Parallelism. *Theoretical linguistics* 12. 231 – 240
- Lipták, Aniko. 2003. “Conjoined Questions in Hungarian”. *Multiple wh-fronting*. ed. by C. Boeckx & K. Grohmann, *Linguistics Aktuel/Linguistics Today* 64. 141 – 160 Amsterdam : John Benjamins
2011. “Strategies of wh-coordination”. *Linguistic Variation* 11:2. 149 – 188
Amsterdam : John Benjamins
- Schachter, Paul. 1977. “Constraints on Coordination”. *Language* 53. 86 - 103
- Williams, Edwin. 1981. Transformationless Grammar. *Linguistic Inquiry* 12.4. 645 - 653