

Wh & Wh: Semantic and Syntactic Arguments for Clausal Coordination

Barbara Tomaszewicz
University of Southern California

1. Introduction

Multiple wh-questions where the wh-phrases are conjoined with the coordinator ‘and’ occur in multiple wh-fronting languages such as Slavic, Romanian and Hungarian. It has been a matter of contention in what way regular multiple wh-questions, such as the Polish one in (1), are related to the coordinated multiple wh-questions, as in (2).

- (1) Kto co kupił? Polish
who whatbought
- (2) Kto i co kupił?
who and what bought

In Tomaszewicz (2011) I have argued that coordinated multiple wh-questions (from now on Coordinated-WHs), have very different syntax, and consequently, semantics, than regular multiple wh-questions (Mult-WHs). While the structure of a Mult-WH is mono-clausal, the structure of a Coordinated-WH is bi-clausal, where two wh-questions are conjoined and the first clause contains ellipsis. Importantly, when the second question is a multiple wh-question we obtain the reading that involves multiple pairs. The present paper provides more detailed evidence from Polish that a special kind of a multiple pair reading is found with Coordinated-WHs. The findings should also apply to other languages with Coordinated-WHs. Alternative accounts that treat Coordinated-WHs as single clauses cannot derive this special kind of a multiple pair reading, and additionally need to stipulate that ‘and’ is a semantically spurious element that only serves a structural purpose.

2. Previous approaches to the phenomenon

2.1 Bi-clausal analysis

On the earliest accounts of Browne (1972) and Wachowicz (1974) Coordinated-WHs were seen as the coordination of two clauses (as in (3)), since “the conjunction of question words is no longer a constituent of the same type as either one separately” (Browne 1972:226). That is, the moved wh-phrases cannot have been conjoined before movement.

- (3) [[_{CP} wh₁ [_{TP} ... wh₁ ...]] and [_{CP} wh₂ [_{TP} ... wh₂ ...]]]

The bi-clausal structure as a uniform source for Coordinated-WHs is rejected in the majority of subsequent work. One exception is Ratiu (2009), who analyses Romanian Coordinated-WHs in terms of multidominance, where the TP is shared and a linearization algorithm results in the TP being pronounced in the second clause. This is also the approach of Citko & Gracanin-Yukse (2009), who examine several languages and argue that only when one of the phrases is an adjunct, the structure may be bi-clausal. In non-multiple wh-fronting languages such as English this is the only way to derive questions with conjoined wh-phrases. Similar stance is taken by Haida & Repp (to appear) who argue that only in languages with movement of wh-phrases into multiple specifiers of a FocP, coordination of the wh-phrases by sideward movement is possible within a single clause.

The main objection in the literature to the structure in (3) concerns the cases where the *wh*-phrases are both arguments, because in languages that do not have object *pro*-drop, such as Bulgarian, a null *pro* object has to be stipulated in the second conjunct (4) (this issue is discussed at length in Kazenin (2002), Gribanova (2009) and Ratiu (2009)).

- (4) [CP[kakvo]j [TP **pro** podarihte tj]] i [CP na kogoj [TP **pro** podarihte **pro** ti]]
 what pro_{SUBJ} gave_{2PL} and to whom pro_{SUBJ} gave_{2PL} **pro**_{OBJ}

To avoid this problem Ratiu (2009) treats the gap as parasitic to an indefinite pronoun in the first conjunct, while others turn to a mono-clausal account for such cases.

2.2 Mono-clausal analysis

The majority of recent analyses of Coordinated-WHs assume a mono-clausal derivation where the *wh*-phrases are fronted in the same way as in regular Mult-WHs but additionally the coordinator is inserted after the movement. The result can be represented either as a conjunction phrase (5)a¹ or as an intervention between the two specifiers (5)b.

- (5) a. [CP [&P wh₁ & wh₂] [TP ... **wh**₁ ... **wh**₂ ...]]] (Gribanova, 2009)
 b. [CP wh₁ & wh₂ [TP ... **wh**₁ ... **wh**₂ ...]]] (Merchant, 2007)

One motivation behind the post-movement insertion of the coordinator is the observation that Coordinated-WHs are more readily answered with a single pair than Mult-WHs, which typically have multiple-pair readings. The coordinator is claimed to block whatever process responsible for multiple pair readings (e.g. absorption in terms of Higginbotham & May, 1981). Thus, Coordinated-WHs are predicted, and claimed, to have only single pair readings in the work on Russian by Kazenin (2002), Gribanova (2009), Chaves & Paperno (2007), Paperno (to appear), and Scott (2010), on Polish by Cichocki (1983), on Romanian by Comorovski (1989), on Hungarian by Lipták (2003), on Czech by Skrabalova (2006), and on Vlach by Merchant (2007).

However, the assumption that there is a strict distinction between single and multiple-pair questions is not well-motivated theoretically. Although a multiple listing of pairs is typically expected as an answer to a Mult-Wh question, it has been noted that in some circumstances (context, intonational contour) a single pair may also be expected, as in (6) (Šimík 2009b, Dayal 2002, Bitter 1998, Wachowicz 1974).

- (6) Q: Which girl hit which boy first?
 A: Mary hit Johnny first.

Since a single-pair can always be obtained as a special instance of a list of pairs, syntactic blocking of a process deriving pair-list readings is not necessary (e.g. Dayal's 2002 choice function analysis).

Most importantly, once a syntactic intervention effect is assumed, the coordinator as the intervener must be treated as a meaningless element, since it cannot conjoin constituents before movement. Gribanova (2009) supports this conclusion arguing that intervention by a clitic in Serbo-Croatian also blocks multiple-pair readings. Nevertheless, the occurrence of

¹ Chaves & Paperno 2007 and Paperno (to appear) argue that in languages like Russian constituents with different syntactic functions and different thematic roles can be genuinely conjoined if they are quantifiers, but essentially they have "the same meaning as their non-coordinate counterparts".

the conjunction ‘and’ in Coordinated-WHs is common to all multiple wh-fronting languages, which cannot be accounted for on the view that the intervener is a spurious element. Moreover, Gracanin-Yukseki (2007) and Citko & Gracanin-Yukseki (2009) and Haida & Repp (to appear), conclude that Coordinated-WHs can be derived either from mono-clausal or bi-clausal structures even in the same language. As a consequence, the same coordinator needs to be semantically empty in mono-clausal questions and meaningful in bi-clausal questions.

2.3 Problems

Coordinated-WHs should never allow a multiple-pair reading if the presence of the coordinator as in (5) blocks the derivations of this type of reading, or if they result from a coordination of two single wh-questions as in (3). Moreover, whenever a mono-clausal analysis is assumed, the coordinator has to be seen as spurious.

In Tomaszewicz (2011) I provide data from Polish, Bulgarian, Russian and Romanian where a multiple pair reading of a special kind is present. In prior literature the availability of multiple-pair readings had not been reported. I have argued that the special kind of multiple pair reading in Coordinated-WHs can only be accounted for on a bi-clausal analysis, where a single wh-question is conjoined with a multiple wh-question, followed by ellipsis in the first conjunct. In this paper, I provide a more detailed discussion of the restrictions on Coordinate-WHs found in Polish, which can only be explained on the proposed bi-clausal account.

3. Coordination of Two Questions and Multiple Pair Readings

3.1 Multiple pair readings of a special kind

In Tomaszewicz (2011) I provide novel data that contradicts the claim prevalent in the literature that Coordinated-WHs are restricted to single-pair readings. This data will be expanded here with a more detailed discussion of the facts in Polish. The following examples come from languages that are most often discussed, Bulgarian (7), Romanian (10), (11), Polish (12), (12), Russian (11), and clearly refer to multiple pairs:

- (7) Povečeto gosti donesoha nešto, no ne znam koj i kakvo.
 most guests brought something but not know who and what
 'The majority of the guests brought something, but i don't know who brought what.'
- (8) Majoritatea invitatilor va aduce ceva, dar nu știu cine și ce va aduce.
 majority guests will bring something but not know who and what will bring
 'The majority of the guests will bring something, but I don't know who will bring what.'
- (9) Większość gości coś przyniosła, ale nie wiem kto i co przyniósł.
 most guests something brought but not know who and what brought
 'The majority of the guests brought something, but i don't know who brought what.'
- (10) Na sobranii mnogie vyskazali svoju tochku zrenija na etu problemu, no
 at meeting many presented self's point vision on this problem, but
 ja ne pomnju po porjadku kto i chto skazal.
 I not remember on order who and what said
 'At the meeting many people presented their views on the problem, but I don't remember who said what one after another.'
- (11) Cine și ce a spus pe rand la ședință?

who and what has said on turn at meeting?
 'Who said what after one another at the meeting?'

- (12) Kto i co po kolei mówił na zebraniu?
 who and what in order said at meeting
 'Who said what after one another at the meeting?'

However, these readings are different from those obtained with regular Mult-WHs. As mentioned above, multiple wh-questions are typically expected to be answered by a listing of pairs. Coordinated-WHs have a specific reading, due to which, as we will show, the range of contexts they can appear in is more restricted than that of Mult-WHs. On the present proposal, coordinated-WHs first ask for the identity of a single wh-phrase and then for the pairing. The evidence for this special reading comes from the following contrast. Compare (7) above and (13):

- (13) #**Vsički gosti** donesoha nešto, no ne znam koj i kakvo.
 all guests brought something but not know who and what
 'All of the guests brought something, but i don't know who brought what.'

In contrast to (7) above, (13) is infelicitous, which cannot be accounted for on the bi-clausal analysis in (3), nor on the mono-clausal approach in (5) even if Coordinated-WHs were allowed multiple-pair readings. The contrast between the use of a universal quantifier in (13) and a majority quantifier in (7) can be replicated for all the languages mentioned.

In order to derive this special kind of reading, and explain the contrast between (7) and (13), I have proposed in Tomaszewicz (2011) that, in addition to (3), Coordinated-WHs can be derived by a coordination of a single and a multiple wh-question as show in (14). The syntactic consequences are such that due to the multiple wh-fronting in the second conjunct (14)b, the multiple pair related reading of Coordinated-WHs will be found only in languages with multiple wh-fronting. This step is also crucial for the ellipsis in the first conjunct to take place under identity. In the subsequent step the two identical wh-phrases in both conjuncts undergo ATB movement, cf. (14)c.

- (14) a. [... wh₁ ...] & [...wh₁...wh₂...]
 b. [wh₁ [... wh₁ ...]] & [wh₁ wh₂[...wh₁...wh₂...]]
 c. [wh₁ [wh₁ [... wh₁ ...]]] & [wh₁ wh₂[...wh₁...wh₂...]]

Thus, the semantic result of the derivation in (14) is that a Coordinated-WH is necessarily interpreted as two questions, the first asking for the identity of the single wh-phrase referent, the second asking for the pairing, as shown by the English paraphrase in (15)c.

- (15) a. Kto i co kupił?
 who and what bought
 b. [who [~~who~~ [TP bought Ø]]] & [~~who~~ what [TP bought]]
 c. *Who bought something? And who bought what?*

Note that the first conjunct contains an empty pronoun interpreted as an indefinite. The availability of null object pronouns in a language and the consequences for Coordinated-WHs

have been discussed in Tomaszewicz (2011). For the present discussion, the crucial observation is that each of the conjuncts has to be felicitous with respect to the context.

3.2 Felicity requirements on the conjuncts

It is the infelicity of the first conjunct that explains the infelicity of the Coordinated-Wh in (13). The answer to the first conjunct, ‘Who brought something?’ is already given by the context – it is ‘everybody’, therefore it is simply redundant to ask the question in the first conjunct. The contrary holds for (7), where the single wh-question is felicitously asking who most of the guests who brought something are.

The second conjunct also has to be independently felicitous, as the following examples (16)-(18) show. If the answer to the question in the second conjunct is already given by the preceding context, i.e. the answer to the first conjunct, the result is infelicitous. This is illustrated in (17), where specifically in the given context the identification of one of the two people makes it infelicitous to ask either a multiple or a single wh-question in the second conjunct. The English paraphrases in (18) make this contrast clear.

- (16) Kto kogo pierwszy uderzył? (*when there are two people*) Polish
 who whom first hit
- (17) #Kto i kogo pierwszy uderzył? (*when there are two people*)
 who and whom first hit
- (18) a. *Who hit someone? #And who hit whom first? (when there are two people)*
 b. *Who hit someone? #And who did he hit first? (when there are two people)*

The context in (17) clearly allows for a single-pair question since only two people are involved, thus the infelicity of a Coordinated-WH is unexpected on mono-clausal accounts. Mono-clausal accounts predict that whenever a regular Mult-WH question is possible, its single-pair version should follow from the addition of the intervener (the conjunction ‘and’). The answer to (16) needs to provide the identity of two people and no more, since the question is about a single event of hitting and from the context we know that only two people were involved. The infelicity of (17) suggests that it cannot simply be a single-pair version of (16). On a bi-clausal analysis, (17) can either be a conjunction of a single and a multiple wh-question as in (14), or a conjunction of two single wh-questions as in (3). Both derivations are excluded in the context where there are two people, *a* and *b*, only. The answer to the question in the second conjunct is entailed in the answer to the first – if person *a* hit someone, then the other person must be person *b*.

Another contrast in support of the view that Coordinated-WHs are not simply single-pair versions of Mult-WHs comes from the examples with predicates taking measure phrase arguments. On a bi-clausal analysis, for the ellipsis to take place under identity, the first conjunct needs to contain a predicate identical to that in the second conjunct, as well as null pronoun to match the null pronoun/wh-trace in the second conjunct. The relevant configurations are shown below for the coordination of two single wh-questions (19), and of a single and a multiple wh-question (20).

- (19) [[wh₁ [... wh₁ ... ∅ ...]] & [wh₂ [... ∅ ... wh₂ ...]]]

- (20) [wh₁ [wh₁ [... wh₁ ... ∅ ...]] & [wh₁ wh₂ [... wh₁...wh₂...]]]

It follows then that if the interpretation of the null argument in the first conjunct as an indefinite is not felicitous, the whole Coordinated-WH will not be felicitous. Null measure phrase arguments are infelicitous with predicates such as *mieć n wzrostu* (‘to have *n* in

height', meaning 'to be n tall', where n stands for a numeral and a unit of measurement) or *mieć n lat* ('to have n years' meaning 'to be n years old'). Therefore, it is the infelicity of the first conjunct that results in the infelicity of the following Coordinated-WHs:

- (21) #Kto i ile ma wzrostu?
 who and how.much has height
 'Who measures \emptyset in height and how much do they measure in height?'
 'Who measures \emptyset in height and who measures how much in height?'
- (22) #Kto i ile ma lat?
 who and how.many has years
 'Who is \emptyset years old and how old are they?'
 'Who is \emptyset years old and who is how old?'

The first conjunct in (21) asks who has any height at all, and the first conjunct in (22) asks who is of any age at all, both of which are nonsensical. Importantly, the corresponding Multi-WHs are perfectly fine since they are asking for pairings of the measures of height/age with the people.

- (23) Kto ile ma wzrostu?
 who how.much has height
 'Who is how tall?'
- (24) Kto ile ma lat?
 who how.many has years
 'Who is how old?'

A null measure phrase can also result in an odd reading as in the following case where it is naturally expected that all employees receive salaries. The only reading available for (25) is such that it is being asked who earns anything at all at the institute and how much money those people who do earn salaries make. Again, the corresponding Multi-WH in (26) is unproblematic.

- (25) ?Kto i ile zarabia w waszym instytucie?
 who and how.much earns in your institute
 'At your institute, who earns \emptyset and how much do they earn?'
 'At your institute, who earns \emptyset and who earns how much?'
- (26) Kto ile zarabia w waszym instytucie?
 who how.much earns in your institute
 'At your institute, who earns how much?'

In the next set of examples, under certain conditions a null argument in the first conjunct excludes only one of the two available derivations of a Coordinated-WH, the coordination of a single and a multiple wh-question. Observe first that the Multi-WHs in (27) and (28) do not show any syntactic superiority effects.

- (27) a. Kto kiedy wysłał listy?
 who when sent.Prf letters
 b. Kiedy kto wysłał listy?
 when who sent.Prf letters

‘Who sent the letters when?’

In Coordinated-WHs we seem to observe a superiority effect² in that (28)b in comparison to (28)a is not acceptable in the situation where we want to find out who, out of the people who were assigned this task, sent out their batch of letters. The verb is in the perfective form meaning that the sending of the letters was a single event in the past. The only interpretation available for (28)b is that of a single pair question, derived by the coordination of two single wh-questions. A multiple reading is not available because the first conjunct is about a single event of sending letters at a single point in time, while the second conjunct is asking about multiple events of sending letters.

- (28) a. Kto i kiedy wysłał listy?
who and when sent.Prf letters
‘Who sent the letters and who sent the letters when?’
‘Who sent the letters and when did they the letters?’
b. Kiedy i kto wysłał listy?
when and who sent.Prf letters
#‘When did somebody send the letters and who sent the letters when?’
‘When did somebody send the letters and when did he send the letters?’

When the verb is in the imperfective aspect, the interpretation with multiple events of sending letters is available, therefore both Coordinated-WHs in (29) can have a multiple pair interpretation (a suitable setting would be an office where several people’s job is to send out our letters).

- (29) a. Kto i kiedy wysyłał listy?
who and when sent.Imp letters
‘Who has been sending letters and who has been sending letters when?’
‘Who has been sending letters and when have they been sending letters?’
b. Kiedy i kto wysyłał listy?
when and who sent.Imp letters
‘When has somebody been sending letters and who has been sending letters when?’

The above contrasts cannot be accounted for on a mono-clausal approach which assumes a strict distinction between multiple pair and single pair readings with the latter derived from the former by means of a syntactic intervener. We have seen that the presence of the coordinator does not exclude a reading where multiple pairs are involved. Moreover, the cases where a Coordinated-WH was not available, while the corresponding Mult-WH was fine, could not be explained by a simple contrast between a single and a multiple pair reading. On a bi-clausal approach, each of the conjuncts has to be felicitous on its own, and I have shown that the interpretation of the elided constituent in the first conjunct has an effect on the felicity of the whole Coordinated-WH question.

4. Ellipsis in Coordinated-WHs

4.1 Existential Presupposition in Coordinated-WHs

As mentioned above, the backwards ellipsis in the first conjunct of a Coordinated-WH is

² I would like to thank John Bailyn for telling me about this observation made for Russian by Tanya Scott.

possible because of the identity with the second conjunct. The first conjunct thus necessarily contains a null pronoun interpreted as an indefinite. I have argued in Tomaszewicz (2011) that this interpretation is crucially dependent on the context, thus Coordinated-WHs are not felicitous in out-of-the-blue contexts. I repeat the relevant data here providing further data from Polish as arguments for cross-clausal ellipsis.

Coordinated-WHs are associated with an existential presupposition that follows from the ellipsis in the first conjunct. In the following example, there is not enough information in the context for B to assume that ‘something’ has, in fact, been given to Mary:

- (30) A: Mary had her birthday yesterday.
 B: a. Kto co przyniósł Marii na urodziny?
 who what brought Mary.Dat for birthday
 ‘Who brought what for Mary on her birthday?’
 b. #Kto i co przyniósł Marii na urodziny?
 who and what brought Mary.Dat for birthday
 ‘Who brought something for Mary and what did they bring?’

In (30) the background information provided by A, that Mary had a birthday, does not entail that Mary received any presents, so the presupposition of (30)b is not satisfied. In (31) on the other hand, the presupposition that Mary received presents is satisfied because this information is entailed by the context.

- (31) A: Mary had her birthday yesterday. $\left[\begin{array}{l} \text{Many people came and brought her presents.} \\ \text{She is still opening the presents.} \end{array} \right]$
 B: a. Kto co przyniósł Marii na urodziny?
 who what brought Mary.Dat for birthday
 ‘Who brought what for Mary on her birthday?’
 b. Kto i co przyniósł Marii na urodziny?
 who and what brought Mary.Dat for birthday
 ‘Who brought something for Mary and what did they bring?’

We conclude that in contrast to regular Mult-WH questions ((30)a(31)a), Coordinated-WHs ((30)b(31)b), carry an existential presupposition that needs to be logically entailed by the common ground. The importance of context for the availability of a Coordinated-WH is also illustrated in (32)-(33) below.

- (32) A: Many people came to the exhibition.
 B: #Komu i co się podobało?
 who_{DAT} and what_{NOM} self pleased
 ‘Who liked something and what did they like?’
 (33) A: Many people admired paintings at the exhibition.
 B: Komu i co się podobało?
 who_{DAT} and what_{NOM} self pleased
 ‘Who liked something and what did they like?’

The context in (32) is not sufficient to entail that any of the people who came to the exhibition liked it. Thus, I have proposed that the existential presupposition in Coordinated-WHs is crucially linked to the backwards ellipsis in the first conjunct. To further illustrate the licensing effect of context on cross-clausal ellipsis consider the following contrast in English

(from Sag 1976 (p.346) reported in Johnson, 2001):

- (34) a. *He did _ when they asked him to (leave).
b. A: Did Harry leave?
B: He did _ when they asked him to (leave).

In (34)b there is a non-commanding antecedent that makes the ellipsis grammatical in contrast to (34)a. Similarly on the proposed analysis for Coordinated-WHs, the ellipsis in the first conjunct has to occur under identity with the second conjunct, but a licensing context is additionally needed. The examples in (30)-(33) showed that enough information needed to be shared in the common ground for a Coordinated-WH to be felicitous. The following example shows that in non-factive environments, which are by default incompatible with existential presupposition, Coordinated-WH will not be found.

- (35) Kto (*i) kogo lubi, ten na niego zagłosuje. (Pol, *google*)
who and whom likes that.one for him will.vote
'Those people who have their preferred candidates will vote for them.'

The correlative construction in (35) has a conditional-like interpretation, it is incompatible with existential presupposition, and thus the Coordinated-WH construction is not possible. In the next section I present syntactic evidence from Polish and Bulgarian that the elided constituent is interpreted.

4.2 Syntactic Evidence for Ellipsis

The elided constituent in the first conjunct is interpreted, and thus Coordinated-WHs are associated with existential presupposition, by which they cannot be uttered out of the blue. I show that the 'missing' proposition can be referred to by an anaphoric pronominal element *to*. Crucially, this element is allowed in Coordinated-WHs but not in regular WHs.

The uninflected demonstrative pronoun *to* (lit. 'this') is a focus particle in Slavic (e.g. Šimik 2009). Crucially, the pronominal has clausal scope, i.e. it is anaphoric to the preceding proposition whether in a separate sentence, or in a dialog, etc. (Progovac 1998, Citko 2000). The pronominal is associated with focus as indicated by the translation of the Polish sentence in (36)B as a cleft in English.

- (36) A: Janek przyniósł Marii bukiet. Polish
John brought Maria_{DAT} bouquet
'John brought a bouquet for Maria. '
B: O tak! I to już w niedzielę.
Oh yes! And *to* already on Sunday
'Oh, yes, and it was on Sunday that he did it.'

The *to* in (36)B would not be felicitous without the preceding context in (36)A. The fact that, the focus pronominal *to* can occur in the second conjunct of a Coordinated-WH (37) means that there is an appropriate antecedent for it in the elided first conjunct, i.e. the proposition 'somebody bought something', as schematized in (39). In a Mult-WH *to* cannot appear in between the wh-phrases, as can be seen in (38).

- (37) Koj i to kakvo kupi? Bulgarian
who and *to* what bought
'Who bought something and what was it that they bought?'

(38) *Koj to kakvo kupi?
 who to what bought
 'What was it that who bought?'

(39) who [~~who~~ [_{TP} ~~who~~ bought something] & [to ~~who~~ what [_{TP} ~~who~~ bought what]]

Kazenin (2002) argues that the coordinator is meaningless because you do not find it in answers to Coordinated-WHs – subject and object cannot be conjoined as shown in (40). However, we observe that the existential presupposition in a Coordinated-WH allows for an answer with a cleft like construction based on *to* (41)B, which is infelicitous with a non-coordinated MWH (42)B.

(40) A: Kto i jakie miasto podbił? Polish
 who and which city conquered
 B: *Wandalowie i Rzym (podbili).
 Vandals and Rome (conquered)

(41) A: Kto i jakie miasto podbił?
 who and which city conquered
 B: Wandalowie i to Rzym.
 Vandals and *to* Rome
 'Vandals, and it was Rome (that they conquered)'

(42) A: Kto jakie miasto podbił?
 who which city conquered
 B: #Wandalowie i to Rzym.
 Vandals and *to* Rome
 C: Wandalowie Rzym, Gepidowie Kluž, Wizygoci Leon, Goci Werone, ...
 Vandals Rome, Gepids Cluj, Visigoths Leon, Goths Verona, ...

The pronominal *to* in (41)B refers back to the proposition conveyed by the first conjunct that the Vandals conquered some city. The availability of *to* in both Coordinated-WHs such as (37) and in the answer to (41) is unexplained on a mono-clausal account. The ellipsis in the first conjunct accounts for the empirical observation that *to* can occur in Coordinated-WHs but not in Mult-WHs. The elided presupposed proposition is interpreted, which is why the pronominal focus marker *to* can refer back to the proposition in the elided first conjunct.

We conclude that the bi-clausal analysis can explain without stipulation why the distribution of Coordinated-WHs, in contrast to Mult-WHs, is restricted to the contexts that satisfy the extensional presupposition. In those contexts the elided information in the first conjunct is entailed by the common ground. This restriction complements the previous data showing that the way the first conjunct is interpreted affects the felicity of the whole Coordinated-WH.

5. Syntactic Evidence for the Coordination of Two Questions

In Tomaszewicz (2011) I presented syntactic evidence for the coordination of two (or more) questions in a Coordinated-WH. I showed that, as expected, one of the conjuncts can be a yes/no-question, since special yes/no-question particles (e.g. *da li* in Serbo-Croatian as observed in Browne (1972), or *czy* in Polish), can also be found in Coordinated-WHs (43)a-b. Those particles never co-occur with wh-phrases in regular Mult-WHs (43)c, which argues against a mono-clausal account.

- (43) a. Co i czy w ogóle studiujesz?
 what & whether at all study_{2SG}
 'What, if at all, do you study?'
- b. Czy i co studiować w U.K.?
 whether & what study_{INF} in U.K.
 'To study in the U.K.? And to study what?'
- c. *Czy co studiujesz?
 whether what study_{2SG}

Regarding Coordinated-WHs as coordinations of two questions allows us to naturally account for the fact that in contrast to Mult-WHs, Coordinated-WHs allow high (speaker-oriented) adverbs between the wh-words, as shown here for Polish ((44)a vs. b). Polish speaker-oriented adverbs include: *najważniejsze* 'most importantly', *zwłaszcza* 'importantly', *niestety* 'unfortunately', *na szczęście* 'fortunately', *o dziwo* 'surprisingly'.

- (44) a. Kto i/a najważniejsze co powiedział?
 who and *most-importantly* whatsaid
 'Who said something and, most importantly, what did they say?'
- b. *Kto najważniejsze co powiedział?
 who *most-importantly* whatsaid
 'Who said most importantly what?'
- c. A najważniejsze kto co powiedział?
 So *most-importantly* who whatsaid
 'So, most importantly who said what?'
- d. Kto później co powiedział?
 who *later* whatsaid
 'Who said later what?'

Note that wh-phrases in Mult-WHs can be split by an intervening low adverb (44)d. However, a speaker-oriented adverb has to occur initially in a Mult-WH as shown in (44)c. Therefore, what the high adverbs modify in (44)a is the question in the second conjunct, while the first conjunct is elided. As discussed in detail in Tomaszewicz (2011) the availability of the clausal coordinator *a* in Polish (cf. (44)) and in Bulgarian is a further indication of a bi-clausal structure.

One new piece of evidence for the proposed coordination structure of a single and a multiple wh-question followed by ATB movement comes from the fact that left-branch extraction is not possible in Coordinated-WHs, cf. (45)b. Polish allows left-branch extraction in regular Mult-WHs (45)a, so if Coordinated-WHs were also underlyingly mono-clausal this difference would be unexplained. It is known that ATB precludes LBE, as exemplified in (45)c.

- (45) a. Jaki kto kupił samochód swojej żonie?
 which who bought car self's wife_{DAT}
 'Who bought what kind of a car for his wife?'
- b. *Jaki i kto kupił samochód swojej żonie?
 which and who bought car self's wife_{DAT}
- c. *Jaki Jan kupił samochód a Marek sprzedał motor?

which Jan bought car and Marek sold motor-bike
'What kind of a car did Jan buy and what kind of a motor-bike did Marek sell?'

We conclude that in addition to the data showing that the interpretation of the ellipsis in the first conjunct affects the felicity of a Coordinated-WHs, the syntactic facts presented in Tomaszewicz (2011) and in the above section provide strong evidence for a bi-clausal account on which either two single wh-questions or a single and multiple wh-question are conjoined.

6. Conclusion

I have examined several properties distinguishing Coordinated-WHs from regular Multi-WHs that argue for the bi-clausal account that I proposed in Tomaszewicz (2011). On my analysis, Coordinated-WHs are compositionally derived by a conjunction of two single wh-questions or a single and multiple wh-question, that is followed by the ATB movement of identical wh-phrases and the ellipsis in the first conjunct. In the present paper I have provided arguments that the ellipsis in the first conjunct is interpreted, which accounts for (i) a special kind of a multiple pair reading when the second conjunct is a multiple wh-question, and (ii) existential presupposition carried by Coordinated-WHs. These two properties result in the specific restrictions on the availability of Coordinated-WHs. They are felicitous only if both of the conjuncts are independently felicitous and only if the context satisfies the existential presupposition. These findings support the view that Coordinated-WHs are not simply single-pair versions of Multi-WHs, since in the cases where a regular Multi-WH is available but the corresponding Coordinated-WH is not, it is the interpretation of the elided constituent that affects the felicity of the whole construction.

References

- Bittner, Maria. 1998. Cross-Linguistic Semantics for Questions. *Linguistic and Philosophy* 21, 1-82.
- Browne, E. Wayles. 1972. Conjoined Question Words and a Limitation on English Surface Structures. *Linguistic Inquiry* 3
- Chaves, Rui. P., Denis Paperno. 2007. On The Russian Hybrid Coordination Construction. *Proceedings of the 14th International Conference on Head-Driven Phrase Structure Grammar*. CSLI Publications
- Citko, Barbara. 2000. On the syntax and semantics of Polish adjunct clauses. *Journal of Slavic Linguistics* 8
- Citko, Barbara, Martina. Gracanin-Yukse 2009. Ways of Wh-Coordination. Abstract for *NELS 40*.
- Dayal, Veneeta. 2002. Single-pair vs. Multiple-pair Answers: Wh in-situ and Scope. *Linguistic Inquiry* 33.3, 512-520.
- Giannakidou, Anastasia, Jason Merchant. 1998. Reverse sluicing in English and Greek. *The Linguistic Review* 15
- Gribanova, Vera 2009. Structural Adjacency and the Typology of Interrogative. *Linguistic Inquiry* 40
- Gracanin-Yukse, Martina 2007. About Sharing. Doctoral dissertation, MIT.
- Haida, Andreas, Sophie Repp (to appear). Monoclausal question word coordinations across languages. *Proceedings of NELS 39*.
- Higginbotham, James, Robert May. 1981. Questions, quantifiers, and crossing. *The Linguistic*

Review 1

- Kazenin, Konstantin I. 2002. On coordination of wh-phrases in Russian. Ms., University of Tuebingen.
- Lipták, Ániko. 2003. Conjoined questions in Hungarian. In *Multiple wh-fronting*, Cedric Boeckx and Kleantes Grohmann, eds., 141–160, Amsterdam: J. Benjamins.
- Merchant, Jason 2007. Spurious coordination in Vlach multiple wh-fronting. *MALC Handout*.
- Paperno, Denis (to appear). Semantics of Hybrid Coordination in Russian. *Proceedings of FASL 18*
- Progovac, Ljiljana. 1998. Event Pronominal “to”. In *Journal of Slavic Linguistics 6*
- Ratiu, Dafina. 2009. Coordinated Questions vs. Matching Questions in Romanian. Abstract for *ConSOLE XVII*.
- Scott, Tanya. 2010. Spurious coordination in Russian multiple wh. Linguistic Society of America. 2010 Annual Meeting Handbook.
- Šimík, Radek. 2009a. The syntax, semantics, and pragmatics of the focus particle 'to' in Czech. *Proceedings of FDSL 7*
- Šimík 2009b. Interpretation of multiple interrogatives: An information structure sensitive account. *Proceedings of FASL 18*
- Skrabalova, Hana. 2006. Parataxe apparente et coordination des interrogatifs en tchèque. In : Bril, I. & Rebuschi, G. (eds), *Coordination et subordination : typologie et modélisation*. *Faits de Langue 28*. Paris: Ophrys.
- Wachowicz, Krystyna. 1974. *On the Syntax and Semantics of Multiple Questions* PhD dissertation, University of Texas, Austin.