Against Spurious Coordination in Multiple Wh-questions

Barbara Tomaszewicz
University of Southern California

1. The Phenomenon

It is well known that in Slavic, Hungarian and Romanian multiple wh-questions are formed by multiple fronting of the wh-phrases, as shown in (1). Less often discussed is the fact that these languages have another type of multiple wh-questions, in which the fronted wh-phrases are conjoined with the coordinator 'and' (see (2)), as first noted by Browne (1972) and Wachowicz (1974).

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

In this paper I argue that coordinated multiple wh-questions (from now on Coordinated-WH), have very different syntax, and consequently, semantics, than regular multiple wh-questions (Mult-WH). While in a Mult-WH both wh-phrases are fronted within a single clause, in a Coordinated-WH two (or more) wh-clauses are conjoined and the first clause contains ellipsis. Importantly, this account allows for a compositional derivation of Coordinated-WHs – the coordinator is semantically contentful and conjoins two questions. Alternative accounts that treat Coordinated-WHs as single clauses need to stipulate that 'and' is a semantically spurious element that only serves a structural purpose.

1.1. Analysis

I make four novel observations concerning (1)-(2), which I then account for through the specifics of the bi-clausal analysis. (i) In contrast to Mult-WHs, Coordinated-WHs allow sentence-level adverbs between the wh-phrases, confirming that what is conjoined are indeed clauses. (ii) Coordinated-WHs allow an unambiguously clausal coordinator, which clearly indicates a bi-clausal structure. (iii) As opposed to Mult-WHs, Coordinated-WHs are associated with an existential presupposition, which facilitates the ellipsis in the first conjunct. (iv) Similarly to Mult-WHs (and contrary to the claims in literature), Coordinated-WHs do allow multiple-pair readings, but only in multiple wh-fronting languages and with an additional semantic effect due to the bi-clausal structure. Finally, the present account captures better the cross-linguistic distribution of Coordinated-WHs, specifically the fact that they are found even in non-multiple wh-fronting languages, but only with single-pair interpretation.

On the present proposal Coordinated-WHs with single-pair readings are derived by a coordination of two (or more) single wh-questions, where both wh-phrases are fronted and the TP of the first clause is elided under identity with the second clause, as shown in (3).

(3) [wh₁ [_TP_ ... ~~wh₁~~ ...]] & [wh₂ [_TP_ ...~~wh₂~~...]]]

As a result of the derivation in (3), the interpretation of a Coordinated-WH question such as (2) is that of two conjoined questions, as given by the English gloss and paraphrase in (4)a,b (ignoring for now the specifics of ellipsis). Such a structure could in principle be available in non-multiple wh-fronting languages, yielding Coordinated-WHs, provided other conditions are also met (e.g., the availability of backwards ellipsis, null arguments). Thus, Polish allows (2), not because it is a multiple-wh-fronting language, but because it has backwards ellipsis and null subjects. English too has Coordinated-WH questions (see section 5), but the identity condition on ellipsis requires that the first wh-phrase be an adjunct, so that there is no need for a null argument in the second conjunct.

(4) a. [who [_TP_ ~~who~~ bought something]] & [what [_TP_ *pro* bought ~~what~~]
     b. *Who bought something? And what did they buy?*

Coordinated-WHs with multiple-pair readings are derived by a coordination of a single and a multiple wh-question. The multiple wh-fronting in the second conjunct in (5) is responsible for the multiple-pair reading, accounting for the fact that Coordinated-WHs with multiple-pair readings are found only in languages with multiple wh-fronting. The multiple wh-fronting in the second conjunct also removes the need for the first wh-phrase to correspond to a null argument in the second conjunct. Finally, the two identical wh-phrases in the two conjuncts undergo ATB movement, as in (5)c.

(5) a. [wh₁[_TP_ ... ~~wh₁~~ ...]] & [wh₁ wh₂ [_TP_ ...~~wh₁~~...~~wh₂~~...]]]

     b. [wh₁ [~~wh₁~~[_TP_ ... ~~wh₁~~ ...]] & [~~wh₁~~ wh₂ [_TP_ ...~~wh₁~~...~~wh₂~~...]]]

The resulting interpretation of a Coordinated-WH is that of two questions, the first asking for the identity of a single wh-phrase, the second asking for the pairing, as shown by the English gloss and paraphrase in (6)b,c.

(6) a. [who [~~who~~ [_TP_ ~~who~~ bought something]] & [~~who~~ what [_TP_ ~~who~~ bought ~~what~~]]]
     c. *Who bought something? And who bought what?*

I show that the newly observed properties of Coordinated-WHs – sentence level adverbials, clausal coordinators, existential presupposition, and the availability of a special kind of a multiple-pair reading but only in multiple wh-fronting languages – as well as the previously noted facts about the cross-linguistic distribution of Coordinated-WHs, follow straightforwardly from the proposed analysis.

1.2. Previous analyses
1.2.1. Monoclausal analysis

Most recent work on Coordinated-WHs argues for a monoclausal derivation parallel to that of regular Mult-WHs with additional insertion of the coordinator after the wh-phrases have been fronted. The coordinator is thus seen as spurious whether it results in a conjunction phrase as (7)a[1] or merely intervenes between the two specifiers (7)b.

(7) a. [_CP_ [_&P_ wh₁ & wh₂] [_TP_ ... ~~wh₁~~ ... ~~wh₂~~ ...]]]   (Gribanova, 2009)
     b. [_CP_   wh₁ & wh₂ [_TP_ ... ~~wh₁~~ ... ~~wh₂~~ ...]]   (Merchant, 2007)

Kazenin (2002), Gribanova (2009), Chaves & Paperno (2007) and Paperno (to appear) focus on Russian, Comorovski (1989) on Romanian, Lipták (2003) on Hungarian, Skrabalova (2006) on Czech, and Merchant (2007) on Vlach. Some authors, like Gracanin-Yuksek (2007), Citko & Gracanin-

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[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".

Yuksek (2009), and Haida & Repp (to appear) discuss Coordinated-WHs in several languages, and conclude that when wh-arguments are coordinated, the structure is mono-clausal, but when a wh-adjunct is involved, two single wh-questions may be coordinated. Consequently, in non-multiple wh-fronting languages such as English a bi-clausal structure (see 1.2.2) is available.

On all monoclausal analyses, the coordinator must be treated as a meaningless element. Its insertion is claimed to block whatever process is responsible for multiple-pair readings (e.g. absorption in terms of Higginbotham & May, 1981). Thus, Coordinated-WHs in multiple wh-fronting languages, are predicted, and claimed, to have single-pair readings only. I show that this prediction is wrong.

1.2.2. Bi-clausal analysis

The alternative analysis, on which Coordinated-WHs involve the coordination of two clauses (as in (8)) was put forth already in Browne (1972) and Wachowicz (1974). As noted above, I adopt this analysis for Coordinated-WHs with single-pair readings, but modify it to involve coordination of a single and multiple wh-questions, as in (5) for Coordinated-WHs with multiple-pair readings.

(8) $[[_{CP}$ wh$_1$ $[_{TP}$ ... ~~wh~~$_1$ ...]] and $[_{CP}$ wh$_2$ $[_{TP}$ ... ~~wh~~$_2$ ...]]]

Ratiu (2009), on the basis of Romanian, and Citko & Gracanin-Yuksek (2009), examining several languages, analyze bi-clausal 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.

Haida & Repp (to appear) and Citko & Gracanin-Yuksek (2009) 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. The main objection to the structure in (8) for cases when the wh-phrases are both arguments is that in languages that do not have object *pro*-drop, such as Bulgarian, a null *pro* object has to be stipulated in the second conjunct (9) (this issue is discussed at length in Kazenin (2002), Gribanova (2009) and Ratiu (2009)).

(9) $[_{CP}$ [kakvo]$_j$ $[_{TP}$ pro   podarihte t$_j$]] i $[_{CP}$ na kogo$_i$ $[_{TP}$ pro   podarihte **pro** t$_i$]]
     what   pro$_{subj}$ gave.2Pl   and   to whom   pro$_{subj}$ gave.2Pl   **pro$_{obj}$**
     'What did you give to someone and who did you give it to?'

Furthermore, a coordination of two single wh-questions as in (8) cannot underlie all Coordinated-WHs, as such a coordination cannot derive multiple-pair readings. This issue has not been previously noted, as the availability of multiple-pair readings has not been reported. I show, however, that a multiple-pair reading of a special kind is present, and can be obtained if a single and a multiple wh-questions are conjoined. Data from Polish, Bulgarian, Russian and Romanian supports this analysis.

2. Clausal coordination as evidence for bi-clausal structure

I provide two novel arguments in favor of clausal coordination – sentence-level adverbs and clausal coordinators, and I further elaborate on two supporting arguments from the literature.

2.1. Sentence-level adverbs in Coordinated-WHs

The first novel observation contrasting Coordinated-WHs with Mult-WHs is that high (speaker-oriented) adverbs can occur in the former (as in (10)a) but not in the latter ((10)b), even though wh-phrases in Mult-WHs can be split by an intervening low adverb ((10)d).

(10) a. Koj **i**   naj-važno   kakvo kaza?   Bulgarian
          who and *most-importantly*   what said
          'Who said something and most importantly what did they say?'
      b. *Koj   naj-važno   kakvo kaza?
          who   *most-importantly*   what said
          'Who said most importantly what?'

    c. (I/A) naj-važno   koj kakvo kaza?
       and *most-importantly* who what said
       'And, most importantly, who said what?'
    d. Koj posle kakvo kaza?
       who *later* what said
       'Who said later what?'

In a Mult-WH such as (10)c, a speaker-oriented adverb has to occur initially. Therefore, what the adverbs modify in (10)a is the question in the second conjunct. Other speaker-oriented adverbs in Bulgarian include *po-važno* 'more importantly', *osobeno važno* 'particularly importantly', *za neštastie* 'unfortunately', *za štastie* 'fortunately', *iznenadvašto* 'surprisingly', *nerazbiraemo zašto* 'not obviously why'. In Polish the facts are exactly the same as in Bulgarian and the speaker-oriented adverbs include: *najważniejsze* 'most importantly', *zwłaszcza* 'importantly', *niestety* 'unfortunately', *na szczęście* 'fortunately', *o dziwo* 'surprisingly'.

2.2. Clausal Coordinators

In Polish and Bulgarian, not only *i*, but also the coordinator *a* can be used (11). The coordinator *a* has an additional contrastive flavor in comparison with *i*, but importantly *a* never conjoins constituents smaller than a full clause (12)a,b[2]. It can conjoin questions, as in (12)d.

(11) Kto **a** najważniejsze co mówił o   tobie?[3]   Polish
       who and most.importantly what said about you
       'Who said something about you and what did they say?'

(12) a. Jan **i/*a** Maria   Polish
    b. wąski **i/* a** długi mostek
       narrow and   long bridge
    c. Jan grał   na gitarze **i/a** Maria grała na pianinie.
       Jan played on guitar and Maria played on piano
       'John was playing the guitar and Maria was playing the piano.'
    d. Kto grał   na gitarze **i/a** kto grał na pianinie?
       who played on guitar and who played on piano
       'Who played the guitar and who played the piano?'

The presence of the clausal conjunction *a* in Coordinated-WHs is evidence in favor of their analysis as coordinated questions. Monoclausal analyses would have to posit two semantically vacuous elements, while those among them involving coordination of the wh-phrases, as in (7)a, are directly contradicted.

2.3. Doubled question particles in Coordinated-WHs

Ratiu (2009) observes that in Romanian the question marker *oare,* which can appear only once per clause, can appear more than once in Coordinated-WHs, as in (13)c, but not in Mult-WHs (13)b.

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[2] It must be noted that "a" may co-occur together with negation in some seemingly non-clausal coordinations, in both Polish (i) vs. (ii), and in Bulgarian (not illustrated here). Lack of space prevents me from arguing that (i) does in fact involve clausal coordination.
    (i) Kupiłam   zieloną *a*   *nie* czerwoną bluzkę. vs. (ii) *Kupiłam   ładną a   starą bluzkę.
       bought.1Sg green and not red   blouse   bought.1Sg nice   and old blouse
       'I bought a green, not a red blouse'   'I bought an old but nice blouse.'
In other cases, such as the Polish *stary a głupi* ('old but stupid') *a* does have the meaning of 'but', unlike (13)c and d; however this use is becoming rare in present day Polish and is not at all available in Bulgarian.

[3] The adverb is needed here since "a" is contrastive, and the adverb provides the needed contrast. Similarly:
    (i) Przeczytałam (*a) / (a   później) wyrzuciłam   tę gazetę.
       read.1.Sg   and / and later   threw.away.1.Sg this newspaper
       'I read and (later) threw away the newspaper'

(13) a. **Oare** cine ce   va spune?   Romanian
         oare   who what Fut say
         'Who will say what?'

     b. **Oare** cine ***(și) oare** ce   va   spune?
         oare   who   and oare what Fut say
         'Who will say something and what will he say?'

Similar facts obtain in Bulgarian. The question particle *li* can appear only once in Mult-WHs. For *li* to appear twice in a multiple wh-question, the question must be a Coordinated-WH.

2.4. Coordinating Yes/No question markers and wh-expressions

Browne (1972) notes that Coordinated-WHs may involve yes/no-questions markers (e.g. *da li* in (14)) seemingly coordinated with wh-phrases. He took this to be evidence for bi-clausal structure.

(14) Da li   i   gdje si   ih video?   Serbo-Croatian
     whether and where aux.2Sg them saw
     'Whether and where did you see them?'

In Polish the clause-initial marker *czy* cannot co-occur with wh-phrases, yet it is allowed in Coordinated-WHs, which provides evidence for the clausal character of the conjuncts. In the examples below obtained via *google.com*, one of the conjuncts is a yes/no-question, while the other is a wh-question. I argue that in all Coordinated-WHs the TP is elided in the first conjunct irrespective of whether it is a yes/no- or a wh-question.

(15) a. Czy   studiujesz?   c. Co i   czy   w ogóle studiujesz?   Polish
         whether study.2Sg   what & whether at all   study.2Sg
         'Do you study?'   'What, if at all, do you study?'

     b. *Czy   co (gdzie) studiujesz?   d. Czy   i   co   studiować w U.K.?
         whether what (where) study.2Sg   whether & what study.Inf   in U.K.
         'Do you, and what do you study'   'To study in the U.K.? And to study what?'

It should be noted that the data suggests that languages may have preferences as to which of the TPs in the conjunction to elide (see section 5).

The important finding of Section 2 is that the occurrence of high speaker-oriented adverbs, the clausal conjunction *a,* the 'doubling' of yes/no-question-markers in Coordinated-WHs and the apparent coordination of yes/no-markers and wh-phrases can be accounted for only on a bi-clausal analysis.

At this point there are two options: either there is ellipsis in one of the clauses or these are multidominance structures. Gracanin-Yuksek (2007) and Citko & Gracanin-Yuksek (2009) postulate multidominance for Coordinated-WHs involving wh-adjuncts that are derived from bi-clausal structures. I argue that ellipsis can better account for the facts under discussion.

3. The role of preceding context and ellipsis in Coordinated-WHs
3.1. Existential presupposition in Coordinated-WHs

Coordinated-WH questions cannot be used as neutral information questions. They require preceding context in order to be uttered felicitously. This observation provides evidence for existential presupposition in Coordinated-WHs. (2), for instance, has the presupposition *Someone bought something*. This presupposition, I will argue, legitimizes ellipsis in the first conjunct.

A Mult-WH can be asked out of the blue, in contrast to a Coordinated-WH. In the short dialog (16) there is not enough information in the common ground for B to satisfy the existential presupposition of a Coordinated-WH, and as a result (16)B' is not felicitous.

(16) A: Mary had her birthday yesterday.
     B: Kto co   przyniósł Marii   na urodziny?   Polish
        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 (16), that Mary had a birthday does not entail that she received presents, so the presupposition of (16)B' that someone brought something for Mary, cannot be satisfied. In (17), on the other hand, the context update entails that Mary received presents, so the presupposition of (17)B' is satisfied.

(17) A: Mary had her birthday yesterday. { Many people came and brought her presents. / She is still opening the presents. }

      B: 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 can conclude that in contrast to regular wh-questions, Coordinated-WH questions ((16)B',(17) B') carry an existential presupposition that is logically entailed by the common ground[4]. Compare also (18) and (19) where the mere fact that many people came to the exhibition does not entail that any of them liked it.

(18) A: Many people came to the exhibition.
      B: #Komu i co się podobało?   Polish
         who.Dat and what.Nom self pleased
         'Who liked something and what did they like?'
(19) 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?'

Thus, I propose that it is the existential presupposition in Coordinated-WHs that legitimizes the backwards ellipsis in the first conjunct as shown by the schematic example below:

(20) a. *Someone gave something to Mary for her birthday.*   (presupposition)
      b. *Who (gave something to Mary)? And who gave what to Mary?*

In Section 5 I will discuss the requirement that the ellipsis site is structurally identical with the second conjunct, but presently, in Section 3.2. I will show additional evidence that the elided constituent is structurally represented and interpreted.

3.2. The focus pronominal 'to'

The uninflected demonstrative pronoun *to* (lit. 'this') is a focus particle in Slavic (e.g. Šimík 2009); see the translation of (21)B as a cleft in English. Two facts about *to* are relevant here. One, *to* has clausal scope (Progovac 1998, Citko 2000); I assume it appears higher than TP. Two, the pronominal is anaphoric to the preceding proposition, whether expressed in a separate clause by a single speaker or in a dialog – what is required is that the antecedent has to be represented linguistically. Note that (21)B is not appropriate in the absence of (21)A, even if the same information is conveyed by the first speaker by showing a bouquet and noting that it is from Janek to Maria. (21) is an example from Polish, but the facts are identical in Bulgarian.

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[4] A negative response to a Coordinated-WH is possible as a denial – a refusal to accommodate the presupposition of the question. Cf. English: A: What was it that Mary got for her birthday? B: Nothing.

(21)   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.'

Importantly, the focus pronominal *to* can occur in a Coordinated-WH as in (22), but not in between the wh-phrases in a Mult-WH, only preceding all wh-phrases, as shown in (23). This is in conformity with the analysis of (22) as a conjunction of clauses. Furthermore, the presence of *to* in the second conjunct in (22) in the absence of an overt prior linguistic material means that there is an appropriate linguistic antecedent for it in the elided first conjunct, as shown in (24). This is an argument in favor of ellipsis over alternative representations of bi-clausal structure. In contrast, the *to* appearing initially in Mult-WHs requires a linguistic antecedent, (23). The facts are the same in Polish.

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

(23)   … (i   to)   koj (*to)   kakvo kupi?
            and TO   who   TO   what   bought
       '… and what was it that who bought?'

(24)   [who [~~who~~ [$_{TP}$ ~~who bought something~~] & [TO ~~who~~ what [$_{TP}$ ~~who~~ bought ~~what~~]]]

The conclusion from Section 3 is that Coordinated-WHs have an existential presupposition, which facilitates backwards ellipsis in the first conjunct. The pronominal focus marker *to* is licensed in Coordinated-WHs (but not between the wh-phrases in Mult-WHs) because it can refer back to the proposition in the elided TP of the first conjunct.

4. Coordination of a single and multiple wh-question in Coordinated-WHs
4.1. Multiple-Pair Readings

The following examples from languages most often discussed in the literature (Bulgarian (25), Russian (26), Polish (27), Romanian (28)) clearly show that the claims that Coordinated-WHs do not have multiple-pair readings cannot be correct:

(25) Povečeto gosti donesoha nešto,   no ne znam koj **i**   kakvo.   Bulgarian
     most   guests brought   something but not I.know who and   what
     'Most guests brought something, but i don't know who bought what.'

(26) Na sobranii mnogie vyskazali svoju točku   zrenija na etu problemu, no   Russian
     at meeting many   presented self's point   vision   on this problem, but
     ja ne   pomnju po porjadku kto **i**   čto 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.'

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

(28) Cine **şi**   ce   a   spus pe rand la şedinţă?   Romanian
     who and   what has   said on turn at meeting?
     'Who said what after one another at the meeting?'

Recall, however, that the derivation that I proposed in (5) predicts that multiple-pair readings should occur with Coordinated-WHs, but in contrast to regular Mult-WHs such questions first ask for the identity of a single wh-phrase and then for the pairing. The evidence for this special reading is presented in the following section. Note that mono-clausal approaches to Coordinated-WHs cannot compositionally account for the data in (25)-(28).

4.2. A special kind of a Multiple-Pair Reading

The coordination of a single and a multiple wh-question results in the interpretation in (29):

(29) *Who bought something? And who bought what?* (English paraphrase)

The first conjunct, being a single wh-question, has to be felicitous with respect to the context. Compare (30) and (31), in Romanian:

(30) **Majoritatea** invitatilor va adduce ceva,   dar nu ştiu   cine şi   ce   va   aduce.
     majority   guests   will bring something but not know$_{1Sg}$ who **and** what will bring
     'The majority of the guests will bring something, but I don't know who will bring what.'
                                                                                  Romanian
(31) #**Toată** lumea va aduce ceva,   dar nu ştiu   cine şi   ce   va   aduce.
      all   people will bring something but not know$_{1Sg}$ who **and** what will bring
     'Everyone will bring something, but I don't know who and what will bring.'

The reason (31) is not felicitous is that the single wh-question in the first conjunct ("Who will bring something") is redundant; it is known that everyone will. This point is illustrated in English below. The question (32)B' is clearly infelicitous following (32)A as opposed to (32)B. Similarly, the Coordinated-WH in (30) above is felicitous because the identity of 'most people' is not known, which is illustrated in English in the dialog in (33):

(32) A: Everyone bought something
     B: Who bought what?
     B': # Who bought something and what did they buy?

(33) A: Most people bought something
     B: Who bought what?
     B': Who bought something and what did they buy?

The second conjunct also has to be felicitous with respect to the context. If the answer to the question in first conjunct already answers the second, it makes the question in the second conjunct infelicitous, as in the example in (35). When there are two people, knowing that one person hit the other first equals knowing who hit whom first. See also the English paraphrase in (36).

(34) Kto kogo   pierwszy uderzył? *(asked about two people)*   Polish
     who whom   first   hit
(35) #Kto i   kogo pierwszy uderzył? *(asked about two people)*
       who and whom first   hit
(36) #*Who hit someone first? And who hit whom first? (asked about two people)*

These interpretive facts cannot be captured on a monoclausal analysis of Coordinated-WHs even if it is amended to allow multiple-pair readings to obtain freely. The presence of the additional meaning component in the multiple pair reading supports only a bi-clausal analysis as in (5).

5. Final note: Identity requirement on ellipsis

I assume that languages may have different restrictions on which conjunct may be elided, but in order for the deletion of the first conjunct to be possible, at LF the elided TP has to be identical to the

TP in the second conjunct (modulo copies of the QR-ed quantifier and the wh-expressions after movement). This is schematically shown in (37) below:

(37)   who something [~~TP~~ ~~who bought something~~]   &   who what [~~TP~~ ~~who~~ bought ~~what~~]

Some support for this assumption comes from the insights of Browne (1972), and Gracanin-Yuksek (2007), who specifically show that English allows Coordinated-WHs only if the argument of the verb is optional as in 0b in contrast to 0a.

(38)   a. Who [~~who sang~~] and where [did they sing ~~where~~]:   *Who and where sang?
        b. What [did you sing ~~what~~] and where [did you sing ~~where~~]: What and where did you sing?

The identity requirement holds for all languages, but the choice of the conjunct targeted by ellipsis is language specific. In English, for instance, sluicing is typically found in the final conjunct (39), while in Polish having the sluice finally is arguably less preferred (40).

(39)   a. Who deleted my posts and why?   (40)   a. ?Kto skasował moje posty i   dlaczego?
        b. *Why and who deleted my posts?   who deleted   my posts & why
        c. *Who and why deleted my posts?   b. Dlaczego i   kto skasował moje posty?
                                                          c. Kto i   dlaczego skasował moje posty?

Giannakidou and Merchant (1998) attribute the availability of what they term 'reverse sluicing' to the availability of indefinite-DP drop, which allows the null argument in the sluice to be identical to the wh-trace in the second conjunct. On the present analysis, it is predicted that languages which, like Serbo-Croatian, Polish or Russian allow object drop in certain anaphoric contexts (41)a (from Browne 1972) will always allow Coordinated-WHs (41)b, c:

(41)   a. A: Da li   je razbio staklo?   b. Ko i   šta razbio? (SC)
               whether aux broke   glass   who and   what broke
               'Did he break the glass?'   'Who broke something and what?'
           B: Da, razbio   je Ø.   c. Šta i   ko   razbio? (SC)
               yes, broke.3Sg aux   what and   who broke
               'Yes, he did.'   'What did someone break and who did it?'

I observe further that languages like Bulgarian that do not allow object drop with specific NPs, do not allow Coordinated-WHs with a wh-object question in the first conjunct and a wh-subject in the second. Compare the Polish example in (42) with the Bulgarian one in (43).

(42)   Kupiłem jabłko i zjadłem Ø.   (43)   Kupih   edna yabŭlka i   **ja/*** Ø izjadoh.
       bought.1Sg apple and ate   bought.1Sg an   apple   and **it**   ate
       'I bought an apple and ate (it).'   'I bought an apple and ate it.'

Unlike Polish, Bulgarian doesn't allow an empty object pronoun in the second conjunct, which is shown in the examples in (44). On the present analysis, such questions as (44)b, a coordination of two single wh-questions, are bad because of the empty pronominal. (44)c, a coordination of a single and a multiple wh-question, is also excluded because the configuration does not allow for the ATB movement to take place, given that Bulgarian obeys superiority in multiple wh-fronting.

(44)   a. Koj [~~koj~~ e kazal nešto]   i   kakvo [pro e   kazal ~~kakvo~~]
             who who aux said   something and what pro_Subj aux said   what
             'Who said something and what did they say?'
        b. * Kakvo [njakoj   e   kazal ~~kakvo~~] i   koj [~~koj~~ e   kazal Ø]
             what   someone aux said   what   and who who aux said
             'What did someone say and who said it?'
        c. * Kakvo [njakoj   e kazal ~~kakvo~~] i [koj kakvo [~~koj~~ e kazal ~~kakvo~~]
             'What did someone say and who said what?'

Importantly, we predict that languages that do not allow multiple wh-fronting will always derive Coordinated-WHs via a conjunction of two single wh-questions, and consequently, will only have single-pair readings. Browne (1972) notes that in English, in contrast to Serbo-Croatian, a Coordinated-WH as in (45) can only have a single-pair reading.

(45)   a. When and where did you see them?   Coordinated-WH   (single pair)
        b. When did you see them where?   Mult-WH   (multiple pair)

This section discussed the fact that ellipsis in one conjunct is possible only under identity with the second conjunct. It was suggested that independent facts of argument structure and availability of unpronounced arguments condition the availability of Coordinated-WHs cross-linguistically.

6. Conclusions

I proposed a bi-clausal analysis that allows Coordinated-WHs to be compositionally derived either via a conjunction of two single wh-questions or via a conjunction of a single- and a multiple wh-question. The proposed analysis straightforwardly accounts for the several properties of Coordinated-WHs (some identified here for the first time), which clearly distinguish them from standard multiple wh-questions. The availability of (i) 'high' speaker-oriented adverbs, (ii) the strictly clausal coordinator *a* in Polish and Bulgarian, (iii) the facts about yes-no markers, and (iv) the focus pronoun *to* all provide unambiguous evidence for the bi-clausal status of Coordinated-WHs in contrast to regular Mult-WHs. (v) The presence of existential presupposition in Coordinated-WHs but not in Mult-WHs can be linked to the ellipsis in the first conjunct. (vi) Multiple-pair readings are possible, with an additional effect, which can be explained by a structure that coordinates a single and a multiple wh-question.

None of the above properties can be accounted for without stipulation on the monoclausal approach. Additionally, I avoid a major drawback of the monoclausal analysis, which is the treatment of the coordinator as a truth-conditionally meaningless element.

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