Coordinated multiple *wh*-sluicing in English: A corpus-based investigation

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Introduction. Multiple sluicing and coordinated *wh*-questions are restricted syntactically. This is because multiple sluicing obligatorily follows the clause-mate condition, yielding superiority effects, while coordinated *wh*-questions are confined to optionally transitive verbs, as in (1). However, coordinated multiple *wh*-sluicing (CM-sluicing) or coordinated clefts are relatively flexible, as they are not under any of the restrictions mentioned above, as shown in (2) (data from Lasnik 2014, Citko and Gračanin-Yuksek 2020):

(1) a. *Someone saw something, but I can't remember **who what**.
    b. ***Who or what** saw?

(2) a. Someone saw something, but I can't remember **who or what**.
    b. Someone saw something, but I can't remember **who** it was **or what** it was.

In addition, CM-sluicing is insensitive to locality effects such as island constraints (Adapted from Merchant 2003):

(3) a. Bob ate dinner and saw a movie last night, but he didn't say **what and where**.
    [Coordinate Structure Constraint]
    b. Ben will be mad if Abby talks to one of the men, but she couldn't remember **who and why**.
    [Adjunct island]

To account for such distinct properties of CM-sluicing, Citko and Gračanin-Yuksek (2020) suggest that CM- sluicing is the coordination of two interrogative CPs together with *wh*-movement and TP deletion. But questions remain if we can postulate bi-clauses for all CM-sluicing. The postulation of two *it*-clefts as the sources, as did Merchant (1999), appears to be untenable since *it*-clefts are unable to express implicit arguments and are incompatible with adjuncts.

In this paper, we try to investigate authentic uses of CM-sluicing. Identifying a significant number attested data that challenge the reconstruction of putative clausal source, we suggest a non-derivational analysis of CM-sluicing that could better account for the attested data.

Data collection and discussion. In order to check authentic uses of CM-sluicing, we performed a corpus investigation with nine search strings in COCA (Corpus of Contemporary American English), and obtained 387 tokens of CM-sluicing examples including the following, which we have distinguished into four types:

(4) Argument-argument pair

   a. Someone was keeping something a secret. The only way to get Gella out of there is to find out **what and who**. (COCA 1991 FIC)

   Argument-adjunct pair

   b. He's moving something with all new guys. I don't want to tell you **what or where**. (COCA 2006 FIC)

   Adjunct-argument pair

   c. I knew I had to do something. I had no idea **why or what**. (COCA 1997 FIC)

   Adjunct-adjunct pair

   d. Breast cancer can be beaten, they say, and they are here to tell **how and why**. (COCA 2002 MAG)

To resolve the meaning of such examples, Citko and Gračanin-Yuksek (2020) suggest that these involve a derivation from the coordination of singular wh-questions, with an E-type pronoun in the second conjunct, co-indexed with the trace of the *wh*-phrase in the first conjunct. We could observe that this approach, however, faces challenges from examples like (4c) since either the second clause would not have an E-type pronoun or be different from the first clause. Examples like (5) also question this derivational analysis, as the two putative clauses would be syntactically different, and the second clause also cannot derive an E-type pronoun from the antecedent.

(5) Experts claim that there could be another attack possible, but none of us know **who and what**. (COCA 2016 MOV)

Proposal. Considering the possible issues of such a clause-based derivational analysis, we suggest a Direct Interpretation (DI) approach assumes that the meanings of the unpronounced material is generated without any syntactic structure. Instead, the sole daughter of an S-node, a fragment, is directly projected to its maximal projection (see Ginzburg and Sag 2000; Culicover and Jackendoff 2005). In particular, adopting Ginzburg and Sag (2000), we assume that the *wh*-remnants function as nonsentential utterances (directly projecting into an utterance unit), and that its resolution refers to a structured discourse which includes information such as question-under-discussion (QUD) and focus-establishing constituent (FEC).

In particular, we suggest that the structure of CM-sluicing is flexible in that it could involve a simple *wh*-coordination and a (sluiced) Head-Fragment Construction or sluiced bi-clausal Head-Fragment Constructions. For instance, examples like (4b), (4c), and (4d) involve a simple coordination of two wh-phrases projected into a NSU as a Head-Fragment Construction:

(6) a. Breast cancer can be beaten, they say, and they are here to tell **how and why**. (COCA 2002 MAG)
b. Structure: ...tell [[$_S$ [$_{AdvP}$ how]] and [$_S$ [$_{AdvP}$ why]]]
c. QUD: $\lambda x \lambda y$[tell(they, beat(we,cancer,x[how],y[why]))]

In the case of (4d). the two *wh*-phrases share the antecedent, and the evoked QUD asks the question raised in the putative source clause from the antecedent. Here, the QUD asks the two questions, of 'how' breast cancer can be beaten, as well as 'why' breast cancer can be beaten. These two questions share one QUD, but are linked to a different variable, which are manner and reason. The proper interpretation also involves a single-pair reading only, which validates that an answer to the construction is derived from MAX-QUD. In the meantime, when the partial (or non-bulk) sharing of the antecedent is involved, we have a bi-clausal structure, which can be evoked in the argument-argument pair of (3a):

(7) a. Someone was keeping something a secret. The only way to get Gella out of there is to find out **what and who**. (COCA 1991 FIC)
b. Structure: ...find out [[$_S$ [$_{NP}$ what]] and [$_S$ [$_{NP}$ who]]]
c. QUD: $\lambda x \lambda y$[keep(x,y,secret)]

The antecedent of each *wh*-phrase is partially shared and do not have an E-pronoun interpretation for the second putative clause. For such partial-sharing examples, we suggest that each *wh*-phrase involves a head-fragment clause whose interpretation depends on the discourse structure. This direction would predict the flexibility of sharing the antecedent partially:

(8) I always knew that one day I would write and publish a novel, the question was never if but rather **what and when**. (COCA 2012 TV)

The evoked QUD here would be 'what I write' and 'when I publish it': the understood predicate is different. One thing to note here is that in such partial-sharing examples, we also have only a single-pair reading, not a pair-list reading. We suggest this is due to the sharing QUD information, not the syntactic structure, contra to Citko and Gračanin-Yuksek (2020). The discourse information and the issue raised is being constantly updated as the speaker moves on to the following remnant, hence they serve as hidden questions whose reconstructions must depend on their discourse structure, and not strictly from the syntactic structure.

In doing so, the DI approach is also able to account for syntactic identity problems such as voice and case mismatches.

(9) a. And that's all I'm saying, is if you start to look for the why Kennedy was killed, if you start to look for a motive, then you can begin to look for **who$_x$ and how**. (COCA 1991 SPOK)
b. Structure: ...look for [[$_S$ [$_{NP}$ who]] and [$_S$ [$_{AdvP}$ how]]]
c. QUD: $\lambda x \lambda y[\text{kill}(x, \text{Kennedy}, y[\text{how}])]$

(10) a. You need help, but I don't know **who$_x$ and why**. (COCA 1990 TV)
b. Structure: ...look for [[$_S$ [$_{NP}$ who]] and [$_S$ [$_{AdvP}$ why]]]
c. QUD: $\lambda x \lambda y[\text{need}(\text{you}, \text{help.of.x}, y[\text{why}])]$

  As welcoming consequences of the analysis we sketched here, it could account for the differences between multiple coordinated *wh*-questions and CM-sluicing, as in verb restriction, clause-mate condition, argument coordination, and evoking implicit arguments depict that CM-sluicing is a construction that must be analyzed regarding its own restrictions and distinctive features.

References

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