Varieties of Coordinated Questions in Twi

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1 Basic Goals

Are examples (1) and (2) derived in the similar ways?

(1) What and when did Dana eat?
(2) What did Dana eat and when?

Giannakidou and Merchant 1998 would say: yes, via sluicing:

(3) What did Dana eat and when did Dana eat?
(4) What did Dana eat and when did Dana eat?

Larson 2012 would say: no, only (2) involves sluicing.

(5) [What] and [when did Dana eat]?
(6) What did Dana eat and when did Dana eat?

In this paper I look to Twi to support this second view.

I Twi verbal morphology can be sensitive to transitivity.
II Twi employs different coordinators in different environments.
III Twi appears to lack the ability to sluice.
2 Bigger picture

Coordinated-wh constructions like (1) are perplexing in languages, like English and Twi, that only allow single wh-fronting.

(7) a. *What when did Dana eat?
   
b. *dɛn brebɛn na Kofi dii?
   
   what when C Kofi ate
   
   ‘what did Kofi eat when?’

In such languages, it is not the case that the wh-words could have moved independently.

(8) a. *What\(_i\) and when\(_j\) did Dana eat \(_{\text{ti}}\) \(_{\text{tj}}\) ?
   
b. *dɛn\(_i\) ne brebɛn\(_j\) na Kofi dii \(_{\text{ti}}\) \(_{\text{tj}}\) ?
   
   what and when C Kofi ate?
   
   ‘What and when did Kofi eat?’

Nor is it the case that the wh-words could have moved up en masse as a constituent:

(9) a. *[What and when]\(_i\) did Dana eat \(_{\text{ti}}\) ?
   
b. *[dɛn ne brebɛn]\(_i\) na Kofi dii \(_{\text{ti}}\) ?

There are two ways of resolving this paradox:

One means is that of **ellipsis** (see Browne 1972, Bánréti 1992, Giannakidou and Merchant 1998, and Whitman 2002)
There is actually two full clauses, thus two wh-movements is fine

(10)  a. [What$_i$ did Dana eat$_i$] and [when$_j$ did Dana eat$_j$]?
    b. [den$_i$ na Kofi dii$_i$] ne [bre[n$_j$ na Kofi dii$_j$]?}

Another means is that of **differing dependency-types**.

-- Larson 2012 (also Larson, Lewis, and Kush 2012 and Kush, Lewis, and Larson, 2013) posits that coordinated-wh questions are derived via long distance, overt wh-dependencies that are not derived via movement.

(11)

![Diagram of sentence structure]

-- This option is permitted under current Minimalist (Chomsky 1995) assumptions.
-- It entails that displacement not be monolithically driven by movement (or lexical features in transformation-less theories)
-- It relies on the possibility of a null variable down low to be bound (see Bresnan 1978 and Johnson 2001).

This differs from (12) in which there is coordination of two full clauses plus ellipsis.

(12)  [When did Dana eat] and [what did Dana eat$_i$]?
The sluiced wh-word could not possibly bind a variable in the first conjunct:

(13)

In this paper I argue that evidence from Twi supports this latter view over the former one.

3 Coordinated Questions in Twi

It is possible to coordinate argument wh-words, adjunct wh-words, and a mix of both in Twi:

(14) ḍhe ne brebεn na Kofi didii?
    where and when C Kofi ate
    ‘Where and when did Kofi eat?’

(15) hena ne dεn na Kofi bɔɔ?
    who and what C Kofi hit
    ‘Who and what did Kofi hit?’

(16) dεnɛ ne brebɛnɛ na Kofi dii?
    what and when C Kofi ate?
    ‘What and when did Kofi eat?’
Why might we suspect that there is no ellipsis in (16)?

3.1 Transitivity distinctions in Twi

In Twi, certain verbs have different instantiations depending on whether they are used transitive or intransitively (Ofori 2006).

(17) a. o-dii nam 3sg-ate fish
     b. o-didii 3sg-ate
     ‘he ate fish’
     ‘He ate’

This holds for wh-constructions as well:

(18) dɛn na Kofi dii? what C Kofi ate?
     ‘what did Kofi eat?’
(19) brebɛn na Kofi didii? when C Kofi ate?
     ‘When did Kofi eat?’

In coordinated-wh constructions in which the argument wh-word is the leftward one, we find that only the transitive version of the verb is possible:

(20) dɛn ne brebɛn na Kofi (*di)di? what and when C Kofi ate?
     ‘What and when did Kofi eat?’

This is unexpected under an ellipsis account. Under such an account the second conjunct ought to look like that in (19)
(21)  *dɛn  na Kofi dii ne  brebɛn na Kofi didii?
       what C  Kofi ate and when  C Kofi ate?
       ‘What and when did Kofi eat?’

Under the differing dependency-type approach, this result is expected as there is a
semantic (though not syntactic) dependency between the argument wh-word and the verb.

When the argument wh-word comes second, it too effects the transitive version of the
verb. This suggests that the argument dependency conditions the change.

(22)  brebɛn ne dɛn  na Kofi (*di)dii?
       when and what C  Kofi ate?
       ‘What and when did Kofi eat?’

3.2 Versions of ‘and’

In Twi there are at least two versions of ‘and’. One for clausal coordination, and one for
coordination of things smaller than clauses (Kobele and Torrence 2004):

Clausal ‘and’: na

(23)  me-huu Kofi na wo-bɔɔ Yaa
       1sg-saw Kofi and 2sg-hit Yaa
       ‘I saw Kofi and you hit Yaa.’

Smaller ‘and’: ne

(24)  me-huu Kofi ne Ama
       1sg-saw Kofi and Ama
       ‘I saw Kofi and Ama.’
When coordinating full wh-questions, the clausal coordinator *na* is obligatory:

(25)  
\[ \text{dɛn na Koﬁ dii } \textbf{na/*ne} \text{ brebɛn na Ama didii?} \]
\[ \text{what C Koﬁ ate and when C Ama ate?} \]
\[ \text{‘What did Koﬁ eat and when did Ama eat?} \]

But in coordinated-wh constructions, *ne* obligatory:

(26)  
\[ \text{dɛn } \textbf{ne/*na} \text{ brebɛn na Koﬁ (*di)dii?} \]
\[ \text{what and when C Koﬁ ate?} \]
\[ \text{‘What and when did Koﬁ eat?’} \]

This again militates against an account in which two whole clauses are coordinated. Under the account proposed by Larson, we are dealing with coordination of a clause with a ‘smaller’ constituent and this distinction is expected.

3.3 Sluicing in Twi

It is conceivable that the above data is what it is due to conditions on the use of *na* in conjunction with ellipsis. The use of *na* necessary when coordinating full clauses so long as there has been no ellipsis.

Yet Twi seems to not have ellipsis constructions generally:

(27)  
\[ \text{*Koﬁ bɔɔ obi na me-nim hena} \]
\[ \text{Koﬁ hit someone and 1sg-know who} \]
\[ \text{‘Koﬁ hit someone and I know who’} \]

Instead, a non-interrogative pronoun must be used:
Kofi bɔɔ obi na me-nim no

Kofi hit someone and 1sg-know him/her

‘Kofi hit someone and I know him/her.’

This makes an ellipsis-based analysis of coordinated-wh questions less plausible.

Recall that sentences like the English (29) were assumed to be derived via ellipsis

What did Dana eat and when?

If such is the case, then this type of sentence should not be possible in Twi. And they are not:

*deŋ na Kofi dii na brebɛn?

what C Kofi ate and when

‘What did Kofi eat and when?’

Further, note that Twi optionally leaves its wh-words in situ (from Kobele and Torrence 2004):

deŋ na wo-noae?

what C 2sg-cooked

‘What did you cook?’

wo-noaa deŋ?

2sg-cooked what

‘What did you cook?’

In these cases, it is sometimes possible to append a coordinated bare wh-word to the in situ wh-word:
Given this structure, the shared material ‘the book’ is c-commanded by elements from both conjuncts. This can easily be tested empirically. Elements from both conjuncts should show the effects of c-commanding the shared material. This turns out not to be the case. Shown in this section, only elements from the second conjunct show c-command effects while elements in the first conjunct do not.

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In this section, we saw that Twi does not seem to employ sluicing and as such a sluicing approach to coordinated-wh questions is implausible. The analysis in which coordinated-wh questions differ from sluicing makes the correct split.

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We have seen evidence from verbal morphology, coordination type, and the availability of sluicing. All of which point to the analysis in (35)

(33) Kofi bɔɔ hena ne dɛn?

Kofi hit who and what
‘Who and what did Kofi hit?’

Note however that the non-clausal coordinator is used here (obligatorily so). This suggests that there is mere DP coordination going on. Further, non-argument wh-words cannot be similarly coordinated:

(34) *Kofi didii brebɛn na dɛn?  (34) *Kofi dii dɛn na brebɛn?

Kofi ate when and what  Kofi ate what and when
‘When and what did Kofi eat?’  ‘When and what did Kofi eat?’

In this section, we saw that Twi does not seem to employ sluicing and as such a sluicing approach to coordinated-wh questions is implausible. The analysis in which coordinated-wh questions differ from sluicing makes the correct split.

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4 Another possible analysis

The data above could also be explained by a multidominance approach to coordinated-wh questions following Gracanin-Yuksek 2007 and Citko & Gracanin-Yuksek 2013.

Grossly simplified, this approach holds that so long as the verb in question is optionally transitive, then all else being equal, the sentence should be acceptable. The verb ‘shares’ the to-be-moved argument wh-word and the to-be-moved adjunct wh-word.

Optionally transitive verbs like *eat work:

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(37)
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\[
\text{eat} \quad \text{what} \quad \text{when}
\]
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Obligatory transitive verbs like *fix do not:

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(38)
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\[
\ast \text{fix} \quad \text{what} \quad \text{when}
\]
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This makes the correct predictions for both English (noted by Whitman 2002, Gracanin-Yuskse 2007, and Larson 2012) and Twi:
(39)  a.  What and when did Dana eat?
    b.  *What and when did Dana fix?

(40)  a.  dɛn ne brebɛn na Kofi dii?
    b.  *dɛn ne brebɛn na Kofi bɔɔ?

        what and when C Kofi hit?
        ‘What and when did Kofi hit?’

The multidominance account predicts that only verb-type matters. But the account presented here predicts the wh-word order matters as well.

Assuming that adjunct wh-words can always find a null variable to bind, they should be acceptable as the first wh-word no matter the verb-type:

(41)  When; and what; did Dana fix t; time-x;  

And this is the case:

(42)  a.  When and what did Dana eat?  (from Larson 2012)
    b.  When and what did Dana fix?

(43)  a.  brebɛn ne dɛn na Kofi dii?
    when and what C Kofi eat
    ‘When and what did Kofi eat?’
    b.  brebɛn ne dɛn na Kofi bɔɔ?
    when and what C Kofi hit?
    ‘When and what did Kofi hit?’
5 Conclusion

-- I have argued that coordinated-wh questions in Twi do are not derived via ellipsis or multidomiance

-- Instead, I posit that an approach to the construction wherein only one wh-word moves is correct. Evidence from this view comes from four types of evidence:

1) The transitive version of the verb arises in such constructions.
2) The particular coordinator employed is the one that joins sub-clausal elements
3) Sluicing does not seem to be available in Twi
4) The order of the wh-words crucially determines the acceptability of the sentences.

6 References


Larson, B. 2012. Wh-dependencies without movement in Germanic. Comparative Germanic Syntax Workshop (CGSW) 27. Yale University, New Haven, CT.

