Wh-dependencies without movement in Germanic

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Basic Claim: Coordinated wh-word questions (CWH) in German are derived via movement of one wh-word and high base-generation of the other.

(1)  a. What and when did Ivan eat?
     b. What; and when; did Ivan eat x; t; ?

This contrasts with languages that employ multiple wh-movement

(2)  a. Čto i kogda Igor remontiruet? (Russian)
     what and when Igor repairs
     ‘what and when does Igor repair?’
     b. What; and when; Igor repairs t; t; ?

Base-generated, left-periphery wh-words can enter into licit binding relations without movement.

This is the sort of relation that holds between the left wh-word and the relevant verb.

Outline of the Talk:

I  Preview of the Analysis
II Previous Analyses
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IV New Analysis
IV Predictions of the Analysis
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1 Preview of the Analysis

I assume an analysis of coordination like that in Munn 1993:

(3) \[ \begin{array}{c}
XP \\
&\&P \\
\& \\
XP \\
\end{array} \]

The second conjunct is an adjunct

(4) \[ \begin{array}{c}
CP \\
&\&P \\
\& \begin{array}{c}
\text{what}_i \\
C \\
\& \begin{array}{c}
\text{when} \\
C' \\
\end{array} \\
\end{array} \\
\end{array} \]

-- The rightmost wh-word moves to its overt position.

-- The left wh-word is base-generated high in a conjoined clause and ‘specifier binds’ a lower variable (e.g. Reinhart 1976, 1987; Hornstein 1995)

Movement is only to the first spec,CP on pain of CSC violation

(5) a. What\(_i\) and when\(_j\) did Ivan eat \(x_i t_j\) ?
b. What\(_i\) and when\(_j\) did Ivan eat \(x_j t_i\) ?

2 Previous Analyses

Mono-clausal movement analyses (roughly those of Gribanova 2008, Kazenin 2001)

(6) \[ \begin{array}{c}
CP \\
&\&P \\
&' \begin{array}{c}
\text{C} \\
\& \begin{array}{c}
\text{TP} \\
\end{array} \\
\end{array} \\
\&^0 \begin{array}{c}
\text{Wh}_2 \\
\text{t}_1 \ldots \text{t}_2 \\
\end{array} \\
\end{array} \]

\(\text{Wh}_1\)
Problems with this approach:

Germanic languages can only move one wh-word

(7)  a. What did Ivan steal when?
     b. *What when did Ivan steal?

It cannot be the case that the conjoined wh-words moved en masse.

(8)  a. What and when did Ivan steal
     b. *Ivan stole a bike and at four o’clock

There is wh-movement to a non c-commanding position

(9)

\[
\begin{array}{c}
\text{CP} \\
& & \\
& \& P & \\
& & \\
\& & & C' \\
& & \\
\& & & & \& \\
Wh_1 & \& & & & C \\
& & \\
& & & & & \text{TP} \\
& & & & & \\
& & & & & t_1 \ldots t_2 \\
\end{array}
\]

In short, they cannot move up alone and they cannot move up together.

Bi-clausal backwards sluicing Analyses (Bárány 1992, Browne 1972 and Giannakidou and Merchant 1998)

As noted by Merchant (2008), this runs into problems with the Backwards Anaphora Constraint (Ross 1969)

(10) a. I know he wants to see someone, although I don’t know who.
     b. *I don’t know who, although I know that he wants to see someone.
Swiping (Ross 1969, Merchant 2002 and others) only occurs under ellipsis and as noted by Gracanin-Yuksek, CWHs do not allow swiping:

(11) a. John was dancing, but I don’t know who with
   b. *Who with were you dancing?
   c. *Who with and when were you dancing?

Finally, the unsluiced version differs in meaning from the putatively sluiced one

(12) a. What did John sing and where did John sing?  
   does not mean:
   b. What and where did John sing?  
   but rather:
   c. What did John sing and where did John sing what he sung

The wh-words cannot move up together, they cannot move up alone, and no ellipsis has take place.

MD analyses (Gracanin-Yuksek 2007, Citko & Gracanin-Yuksek 2010, Ratiu 2009)

(13)

(14)
This way we can capture the fact that there is independent movement by assuming two clauses. The effects of sluicing are derived via linearization, not deletion.

Further, a prediction is made. Only optionally transitive verbs should be allowed

(15)  a. What and when did John eat?

     *What and when did John fix?

(16)  a. Was und wann hat Dieter gegessen?
     What and when has Dieter eaten?
     ‘What and when did Dieter eat?’

     *Was und wann hat Dieter repariert?
     What and when has Dieter repaired?
     ‘What and when did Dieter repair?’

(17)  a. Hva og hvor spiste Jon?
     What and where ate Jon?
     ‘What and where did Jon eat?’

     *Hva og hvor fikset Jon?
     What and where fixed Jon
     ‘What and where did Jon fix?’

(18)  a. Wat en wannen heeft Jan gegeten?
     What and when has Jan eaten
     ‘What and when did Jan eat?’

     *Wat en wannen heeft Jan gerepareerd?
     What and when has Jan repaired
     ‘What and when did Jan repair?’

In fact, this extends beyond Germanic languages and seems to hold for other non multiple wh-movement languages:

(19)  a. Mitä ja milloin Matti söi?
     What and when Matti ate?
     ‘What and when did Matti eat?’

     *Ketä ja million Matti rakasti?
     Who and when Matti loved
     ‘who and when did Matti love?’
But this fails to predict the difference word order can make

\[(20)\]

\[\text{Verb-Type: eat} \quad | \quad \text{Verb-Type: fix} \]
\[\begin{array}{c|c|c}
\text{Wh-order: Arg first} & \text{Good} & \text{Bad} \\
\text{Wh-order: adj first} & \text{Good} & \text{Bad} \\
\end{array}\]

As long as the verb is of a particular type, then the sentence will be good or bad

Predictions made by the Multidominance approach:

This holds of optionally transitive verbs:

\[(21)\] When and what did John eat?

\[(22)\] Wann und was hat Dieter gegessen?
   ‘When and what has Dieter eaten’

\[(23)\] Hvor en hva spiste Jon?
   ‘Where and what did Jon eat?’

However, obligatorily transitive verbs are acceptable if the adjunct wh-word is first:

\[(24)\] When and what did John fix?

\[(25)\] Wann und was hat Dieter repariert
   ‘When and what did Dieter repair’
(26)  Hvor og hva fikset Jon?
Where and what fixed Jon
“where and what did Jon fix?”

Again, this extends outside of Germanic to a degree:

(27)  a.  Milloin ja mitä Matti söi?
When and what Matti ate
‘When and what did Matti eat?’

b.  Milloin ja ketä Matti rakasti?
When and who Matti loved
‘When and who did Matti love?’

These judgments can be rather subtle

3 Judgment Study

Work with Shevaun Lewis and Dave Kush (Lewis, Larson, Kush 2012)

7-Point rating scale of acceptability

Sample items:

Optionally-transitive verb ("eat"):  
Context: Jim was trying to lose weight. But he gave in and ate a doughnut at midnight last night.

- Left-conjoined:
  - Argument-first: What and when did Jim eat?
  - Adjunct-first: When and what did Jim eat?

Obligatorily-transitive verb ("fix"):  
Context: Rodney is a young mechanic. He fixed a limousine for the first time last week.

- Left-conjoined:
  - Argument-first: What and when did Rodney fix?
  - Adjunct-first: When and what did Rodney fix?
The verb-type restrictions go away when the wh-word order is reversed

4 New Analysis

Note that these constraints are quite different from Slavic CWHs

(29) Co i komu Jan dał? (Polish From Liptak, in press)
    what and whom Jan gave
    ‘What and to whom did Jan gave?’

(30) Kto i jak naprawił zlew?
    who and how fixed sink
    ‘Who and how fixed the sink?’

(31) Čto i kogda Igor remontiruet? (Russian)
    what and when Igor repairs
    ‘what and when does Igor repair?’
Given this structure, the shared material 'the book' is c-commanded by elements from both conjuncts. This can easily 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.

This extends to multiple wh-fronting languages generally.

(33) a. Mit és kinek adtál? (Hungarian from Liptak)
what and who gave.indf.2sg
‘What and to whom did you give?’

b. Mit és hol javítottál meg?
what and where repaired.indf.2sg pv
‘What and where did you repair?’

This suggests that both wh-words are actually undergoing movement.

(34) What, and when Igor repairs t_i t_j ?

But in Germanic, we seem to have this sort of pattern.

<table>
<thead>
<tr>
<th>Wh-order</th>
<th>Verb-Type: eat</th>
<th>Verb-Type: fix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arg first</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>adj first</td>
<td>Good</td>
<td>Good</td>
</tr>
</tbody>
</table>

This is best accounted for with an analysis like the following:

(35)
The derivation works like this:

(36) **Build the first conjunct:** $[\text{TP} \text{ Ivy ate when}]$

(37) **Move the first wh-word:** $[\text{CP} \text{ when [Ivy ate t]}]$

(38) **Build the second conjunct via base-generation of the wh-word in the specifier position:** $[\text{CP} \text{ what } C^0]$

*This relies on a syntax without any derivational subcategorization constraints. As long as the semantics works out, the sentence can be grammatical*

(39) **Conjoin the clauses:** $[\text{CP} [\text{CP} \text{ what } C^0] [\& \& \& \text{CP} \text{ when [Ivy ate t]]}]$

If there is an argument in the first conjunct, it must be able to bind a variable in the other conjunct to get its thematic interpretation. If there is an adjunct in the first conjunct, it should always be possible to bind a relevant null variable:

(40) a. What ... eat-$x$
    b. *What ... fix
(41) a. When ... eat time-$x$
    b. When ... fix time-$x$

5 Predictions of this analysis

Optionally transitive verbs without indefinite interpretations should be as bad as fix-type verbs:

(42) a. Iris noticed $\text{means:} \text{ Iris noticed that thing we were talking about.}$
    b. *What and when did Iris notice?
Quantifier float should not be possible, since the first conjunct wh-word was never actually in the second conjunct:

(43) a.  *Welche torten und wann hast du alle essen muessen?
        which cakes and when have you all to eat must
        ‘All of which cakes and when did you need to eat?’

b.  Wann und welche torten hast du alle essen muessen?
        when and which cakes have you all to eat must
        ‘When and all of which cakes have did you need to eat?’

If there is only a semantic, binding relation between the leftward wh-word and its thematic position, it should be impervious to islands

(44)  *What and when did Ivy meet a man who ate?

For some reason, but wh-words must be interpreted in the same clause. We need to test with weak islands

(45) a.  ?What and when did you wonder why John ate

b.  *When and what did you wonder why John ate

(46) a.  ?Hva og hvor lurte Jon på om Marie spiste?
        what and where wondered Jon on about Mary ate
        ‘What and where did Jon wonder whether Mary ate?’

b.  *Hvor og hva lurte Jon på om Marie spiste?
        where and what wondered Jon on about Marie ate

(47) a.  ?Was und wann hat Bruno gefragt ob Irene gegessen hat/ aß?
        what and when has Bruno asked whether Irene eaten has/ ate
        ‘What and when did Bruno ask whether Irene ate?’

b.  *Wann und was hat Bruno gefragt ob Irene gegessen hat/ aß?
        when and what has Bruno asked whether Irene eaten has/ ate

This is quite different from the multiple wh-fronting languages
(48) *Čto i kogda Igor pointeresovalsia Anna otremonirovala?
What and when Igor wondered Anna repairs
‘What and when did Igor wonder whether Anna repairs?’ (Russian)

(49) *co i kiedy Aleksy zastanawiał się, czy Anna naprawiła?
what and when Aleksy wonder whether that Anna repaired
‘What and when did Aleksy wonder whether Anna repaired?’ (Polish)

(50) *šta se i kada Ivana pitala da li je Ivan popravio?
what CL and when Ivana wonder whether CL Ivan repaired
‘What and when did Ivana wonder whether Ivan repaired?’ (Serbo-Croatian)

For both types of languages, strong islands are out:

(51) *Was und wann hat Bruno den Mann der gegessen hat/ aß gesehen?
what and when has Bruno the man who eaten has / ate seen
‘What and when did Bruno see than man who ate?’ (German)

(52) *Hva og når så Jon mannen som spiste?
what and when saw Jon man.def who ate
‘What and when did Jon see the man who ate?’ (Norwegian)

(53) *Čto i kodga Igor uvidel človeka, kotoryj remontiruet?
what and when Igor saw man who repairs
‘What and when did Igor see the man who repairs?’ (Russian)

(54) *co i kiedy Aleksy zobaczył mężczyznę, który naprawiał?
what and when Aleksy see man who repaired
‘What and when did Aleksy see the man who repaired?’ (Polish)

(55) *šta je i kada Ivana videla čoveka koji je popravio?
What CL and when Ivana see man who CL repaired
‘What and when did Ivana see the man who repaired’ (Serbo-Croatian)

6 Conclusion
• There seems to be a typological split in wh-coordination between multiple wh-fronting languages and non multiple wh-fronting languages.
• For non multiple wh-fronting languages, effects of verb type hinge upon the order of the wh-words.
• This can be captured with an analysis in which the leftward wh-words are base-generated high, not involving movement.
• For non multiple wh-fronting languages, effects of verb type hinge upon the order of the wh-words
7 References


