CP-recursion and the derivation of verb second in Germanic main and embedded clauses

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Abstract
This paper will give an overview of the verb second (V2) phenomenon, as found in both main and embedded clauses in Germanic, and it will also explore a particular derivation of (embedded) V2, in terms of a cP/CP-distinction.

All the Germanic languages except modern English (but including e.g. Old English) are V2, i.e. in all declarative main clauses and in all wh-questions, the finite verb is in the second position, regardless of whether the first position is occupied by the subject or by some other constituent. This can be extended to yes/no-questions, provided it is assumed that the first position in such questions is empty (and such an assumption is supported by the fact that it allows an account for Greenberg’s 1963: 83 “Universal 11”, cf. Vikner 2007).

No particular type of embedded clause in Germanic ever requires V2, and although V2 is optionally possible in many embedded clauses, this is normally not the case for all types of embedded clauses, as e.g. embedded questions (almost) never allow V2 (Julien 2007, Vikner 2001, though see McCloskey 2006 and Biberauer 2015).

As in Nyvad et al. (2016), I will explore a particular derivation of (embedded) V2, in terms of a cP/CP-distinction, which may be seen as a version of the CP-recursion analysis (deHaan & Weerman 1986, Vikner 1995 and many others). The idea is that because embedded V2 clauses do not allow extraction, whereas other types of CP-recursion clauses do (Christensen et al. 2013a; Christensen et al. 2013b; Christensen & Nyvad 2014), CP-recursion in embedded V2 is assumed to be fundamentally different from other kinds of CP-recursion, in that main clause V2 and embedded V2 involve a CP (“big CP”), whereas other clausal projections above IP are instances of cP (“little cP”).

Keywords: verb second (V2), CP-recursion, embedded verb second, verb first (V1), Greenberg’s (1963) Universal 11, OCC-feature, extraction, islands, complementizer stacking

1 Verb second (V2)

1.1 V2 in main clauses in general

As frequently observed, at least since Wackernagel (1892) and Fourquet (1938), all Germanic languages (with the single exception of Modern English) are “verb second” (V2), in that the
finite verb always occupies the second position in the main clause (and in some embedded clauses too). In other words, in main clauses, the subject position may be preceded both by the finite verb and by some maximal projection.

(1) **Verb second = V2**

![Diagram of Verb second = V2]

Den Besten (1983) was the first to suggest an analysis that found its canonical form in Platzack (1985) and Chomsky (1986: 6), as double movement of some XP into Spec-CP and of the finite verb into C⁰:

(2) **V2**

![Diagram of V2]

In order to find out whether a language is V2, we have to examine main clauses, but not subject-initial ones, because here even English and French might appear to be V2:

(3) a. **Danish**
   Peter *har* sandsynligvis læst den her bog.
   Peter has probably read this here book

b. **Icelandic**
   Pétur *hefur* sennilega læsti þessa bók.
   Peter has probably read this book

c. **German**
   Peter *hat* wahrscheinlich dieses Buch gelesen.
   Peter has probably this book read
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d. **English**
   Peter has probably read this book.

e. **French**
   Il a probablement lu ce livre.
   he has probably read this book

This is an illusion, however. Only in (3a)-(3c) does the subject occupy Spec-CP and the finite verb C₀, whereas in (3d)-(3e) the subject presumably occupies Spec-IP and the finite verb I₀.

We also cannot rely on wh-initial-clauses (clauses that begin with a question element) when you test for V2, as even English and French have V2 in main clause questions, as seen in (4).

(4) a. **Danish**
   Hvad for en bog har Peter læst?

b. **Icelandic**
   Hvaða bók hefur Pétur lesið?

c. **German**
   Welches Buch hat Peter gelesen?

d. **English**
   Which book has Peter read?

e. **French**
   Quel livre a-t-il lu?

(5) a. **Danish**
   Den her bog har Peter læst.

b. **Icelandic**
   Þessa bók hefur Pétur lesið.

c. **German**
   Dieses Buch hat Peter gelesen.

d. **English**
   *This book has Peter read.

e. **French**
   *Ce livre a-t-il lu.

(6) a. **Danish**
   Nu har Peter læst den her bog.

b. **Icelandic**
   Nú hefur Pétur lesið þessa bók.

c. **German**
   Jetzt hat Peter dieses Buch gelesen.

d. **English**
   *Now has Peter read this book.

e. **French**
   *Maintenant a-t-il lu ce livre.

We need to consider non-subject-initial and non-wh-initial clauses, as in (5) and (6). Here it is clear that only the Germanic languages (with the exception of modern English) are “real” V2 languages.
The single CP-analysis of V2, (2), is thus that the finite verb in V2 main clauses occupies the same position that the complementiser (that, if, because) occupies in an embedded clause, namely C₀:

(7) **English**
   
a. [Spec-CP ...] [C₀ that] [the children have not seen this film.]_{IP}
   b. [Spec-CP Only this film₂] [C₀ have₁] [the children ——1 not seen ——2.]_{IP}

(8) **Danish**
   
a. [Spec-CP ...] [C₀ at] [børnene har set den her film.]_{IP}
   b. [Spec-CP Den her film₂] [C₀ har₁] [børnene ——1 set ——2.]_{IP}

(9) **Icelandic**
   
a. [Spec-CP ...] [C₀ að] [börnin hafa séð þessa mynd.]_{IP}
   b. [Spec-CP Pessa mynd₂] [C₀ hafa₁] [börnin ——1 séð ——2.]_{IP}

(10) **German**
    
a. [Spec-CP ...] [C₀ dass] [die Kinder diesen Film gesehen haben.]_{IP}
   b. [Spec-CP Diesen Film₂] [C₀ haben₁] [die Kinder ——2 gesehen ——1.]_{IP}

A further indication that the finite verb in main clauses occupies the same position as the complementiser does in embedded clauses may be found in conditional clauses, where the subject is preceded either by a complementiser (e.g. *if*) or by the finite verb (e.g. *had*), but not by both:

(11) **English**
    
a. If I had had more time, I would have made an even longer hand-out.
   b. Hvis jeg havde haft mere tid, ville jeg have lavet et endnu længere hand-out.
   c. Ef ég hefði haft meiri tíma, myndi ég hafa gert ennþá lengri úthendu.
   d. Wenn ich mehr Zeit gehabt hätte, hätte ich ein noch längeres Thesenpapier gemacht.

(12) **English**
    
a. Had₁ I t₁ had more time, I would have made an even longer hand-out.
   b. Havde₁ jeg t₁ mere tid, ville jeg have lavet et endnu længere hand-out.
   c. Hefði₁ ég t₁ haft meiri tíma, myndi ég hafa gert ennþá lengri úthendu.
   d. Hätte₁ ich mehr Zeit gehabt t₁, hätte ich ein noch längeres Thesenpapier gemacht.

(13) **English**
    
a. *Had₁ if I t₁ had more time, I would have made an even longer hand-out.
   b. *Havde₁ hvis jeg t₁ haft mere tid, ville jeg have lavet et endnu længere hand-out.
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c. Icelandic
*Hefði ef ég háf miðri tíma, myndi ég háfa gert ennþá lengri úthendu.
d. German
*Hätte wenn ich mehr Zeit gehabt t₁, hätte ich ein noch längeres Thesenpapier gemacht.

(14) a. English
*If had t₁ had more time, I would have made an even longer hand-out.
b. Danish
*Hvis havde jeg t₁ haft mere tid, ville jeg have lavet et endnu længere hand-out.
c. Icelandic
*Ef hefði ég t₁ haft meiri tíma, myndi ég háfa gert ennþá lengri úthendu.
d. German
*Wenn hätte ich mehr Zeit gehabt t₁, hätte ich ein noch längeres Thesenpapier gemacht.

The structures in (15a)-(15c) show how V2 works in three Danish main clauses under the single CP-analysis of V2 in (2) – with the added assumption of the subject being base-generated in Spec-VP.

(15) a. Subject-initial V2

The structures in (15a)-(15c) show how V2 works in three Danish main clauses under the single CP-analysis of V2 in (2) – with the added assumption of the subject being base-generated in Spec-VP.
b. Non-Subject-initial V2

```
CP
   DP
   Ost_3
   cheese
   C'
   C^0
   spiser_2
eats
   DP
   Erik_1
   Erik
   I'
   t_2
   VP
   AdvP
   aldrig
   never
   VP
   DP
   t_1
   V^0
   DP
   ost_3
   cheese
   t_2
   t_3
```

c. Non-Subject-initial V2

```
CP
   AdvP
   Måske
   maybe
   C'
   C^0
   spiser_2
eats
   DP
   Erik_1
   Erik
   I'
   t_2
   VP
   AdvP
   aldrig
   never
   VP
   DP
   t_1
   V^0
   DP
   ost_3
   cheese
   t_2
   t_3
```
1.2 V2 in English main clauses

As some of the examples above show, English has obligatory V2 in main clause questions, even though it is the only Germanic language not to have V2 in all main clauses:

(16) a. **English**
   
   [Spec-CP Which book$_2$] [$_c^o$ has$_1$] Peter $t_1$ read $t_2$?

   b. *[Spec-CP Which book$_1$] Peter has read $t_2$?

   c. **Danish**
   
   [Spec-CP Hvad for en bog$_2$] [$_c^o$ har$_1$] Peter $t_1$ læst $t_2$?

   d. **Icelandic**
   
   [Spec-CP Hvaða bók$_2$] [$_c^o$ hefur$_1$] Pétur $t_1$ lesið $t_2$?

   e. **German**
   
   [Spec-CP Welches Buch$_2$] [$_c^o$ hat$_1$] Peter $t_2$ gelesen $t_1$?

(17) a. **English**
   
   [Spec-CP Why] [$_c^o$ has$_1$] Peter $t_1$ read this book?

   b. *[Spec-CP Why] Peter has read this book?

   c. **Danish**
   
   [Spec-CP Hvorfor] [$_c^o$ har$_1$] Peter $t_1$ læst den her bog?

   d. **Icelandic**
   
   [Spec-CP Af hverju] [$_c^o$ hefur$_1$] Pétur $t_1$ lesið þessa bók?

   e. **German**
   
   [Spec-CP Warum] [$_c^o$ hat$_1$] Peter dieses Buch gelesen $t_1$?

English also has to have V2 with topicalised negative elements:

(18) a. **English**
   
   [Spec-CP Never] [$_c^o$ have$_1$] the children $t_1$ seen such a bad film.

   b. *[Spec-CP Never] the children have seen such a bad film.

   c. **Danish**
   
   [Spec-CP Aldrig] [$_c^o$ har$_1$] børnene $t_1$ set sådan en dårlig film.

   d. **Icelandic**
   
   [Spec-CP Aldrei] [$_c^o$ hafa$_1$] börnin $t_1$ séð svona slæma mynd.

   e. **German**
   
   [Spec-CP Nie] [$_c^o$ haben$_1$] die Kinder so einen schlechten Film gesehen $t_1$.

(19) a. **English**
   
   [Spec-CP Only in America] [$_c^o$ could$_1$] such a thing $t_1$ happen.

   b. *[Spec-CP Only in America] such a thing could happen.

   c. **Danish**
   
   [Spec-CP Kun i Amerika] [$_c^o$ kunne$_1$] sådan noget $t_1$ ske.

   d. **Icelandic**
   
   [Spec-CP Aðeins í Bandaríkjunum] [$_c^o$ gæti$_1$] eitt hvaða svona $t_1$ gerst.

   e. **German**
   
   [Spec-CP Nur in Amerika] [$_c^o$ könnte$_1$] so etwas passieren $t_1$. 
Rizzi (1996: 64) refers to modern English and modern French as languages with “residual V2”, because “real” V2 was fairly widespread in Old English and Old French, less so in Middle English and Middle French, and it is fairly limited in modern English and modern French. For more detail on the loss of V2 in English, see Fischer et al. (2000: 104-137).

1.3 V2 in embedded clauses

The standard form of an embedded clause is an IP inside a CP:

(20) **Danish**

**Standard embedded clause (i.e. non-V2)**

However, sometimes it is also possible to have what has been called “embedded main clauses”: embedded clauses with main clause word order, i.e. with V2. Vikner (1995: 80-87) and many others analyse such clauses as cases of a CP inside another CP (see also section 2 below).

(21a) is embedded subject-initial V2, whereas (21b) is embedded non-subject-initial V2, cf. (15a) and (15b) above. That (21a) is embedded V2 rather than e.g. Vθ-to-IPθ-movement can be seen from the fact that exactly those contexts that allow (21a) also allow (21b) (and vice versa). This is explained if (21a) and (21b) are the same phenomenon: embedded V2.

<table>
<thead>
<tr>
<th>(21a)</th>
<th>(21b)</th>
</tr>
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<tbody>
<tr>
<td>at that</td>
<td>aldrig never</td>
</tr>
<tr>
<td>never</td>
<td>at that</td>
</tr>
<tr>
<td>DP</td>
<td>DP</td>
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<tr>
<td>IP</td>
<td>IP</td>
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<tr>
<td>CP</td>
<td>CP</td>
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<tr>
<td>C</td>
<td>C</td>
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<tr>
<td>Vθ</td>
<td>Vθ</td>
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<td>VP</td>
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<tr>
<td>DP</td>
<td>DP</td>
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<tr>
<td>Erik</td>
<td>Erik</td>
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<tr>
<td>t1</td>
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<td>Vθ</td>
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<td>t1</td>
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<td>t1</td>
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<td>Vθ</td>
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<td>VP</td>
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<td>DP</td>
<td>DP</td>
</tr>
<tr>
<td>t1</td>
<td>t1</td>
</tr>
</tbody>
</table>
Notice that all three types of embedded clauses (non-V2 = (20), subject-initial V2 = (21a), and non-subject-initial V2 = (21b)) are also possible if the clause containing the matrix verb vide ‘know’ is itself an embedded clause (i.e. Ved Bo at … ‘Knows Bo that …’ in (20)/(21) can be replaced by Jeg er bange for at Bo ikke ved at … ‘I am afraid for that Bo not knows that …’, and all three types remain well-formed). According to Freitag & Scherf (2016: 11-12), this is an indication that the embedded clauses in question are truly embedded and not just “superficially connected to the matrix clause” (and Freitag & Scherf 2016 claim that in German, clauses like (20) are not possible if the matrix clause is itself not V2).

(21) Danish

a. Embedded Subject-initial V2
Embedded V2 is realised in different ways in Danish, English and German. Embedded V2 in English is only possible with a negative element in Spec-CP (cf. section 1.2 above), whereas in Danish and German, there is no such restriction.

(22) **ENGLISH**

I think ...

a. ... ([C₀ that]) Max [C₀ would₁] never read papers on the train. \(-V2\)

b. "... [C₀ that] papers [C₀ would₁] Max t₁ never read on the train. \(+V2\)

c. "... papers [C₀ would₁] Max t₁ never read on the train. \(+V2\)
In English and Danish, the complementiser *that*, which is optional in normal embedded clauses, is obligatory with embedded V2.

(23) **Danish**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Jeg tror ([C0 at]) Max aldrig læser aviser i toget.</td>
</tr>
<tr>
<td></td>
<td>I think that Max never reads papers in train.</td>
</tr>
<tr>
<td>b.</td>
<td>Jeg tror [C0 læser] Max aldrig t1 aviser.</td>
</tr>
<tr>
<td>c.</td>
<td>Jeg tror i toget [C0 læser] Max aldrig t1 aviser.</td>
</tr>
<tr>
<td>d.</td>
<td>Jeg tror [C0 at] under ingen omstændigheder [C0 ville] Max t1 læse aviser</td>
</tr>
</tbody>
</table>

In German, the complementiser *dass* 'that', which is obligatory in normal embedded clauses, is completely impossible with embedded V2.

(24) **German**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>I think that Max never in.the train reads newspaper</td>
</tr>
<tr>
<td>b.</td>
<td>Ich glaube, [C0 dass] im Zug [C0 liest] Max nie Zeitung t1.</td>
</tr>
<tr>
<td>c.</td>
<td>Ich glaube, im Zug [C0 liest] Max nie Zeitung t1.</td>
</tr>
<tr>
<td>d.</td>
<td>Ich glaube, unter keinen Umständen [C0 würde] Max im Zug Zeitung lesen t1.</td>
</tr>
</tbody>
</table>

Some kind of recursive CP-analysis, (21), is therefore only necessary for embedded V2 in English and Danish, not for embedded V2 in German.
One major difference between main clause V2 and embedded V2 is that whereas main clause V2 is obligatory, no embedded clause type allows only V2 (provided the language has a difference V2 vs. non-V2 at all, i.e. excluding general embedded V2 languages). However, according to e.g. Walkden (2016) and Wiklund et al. (2009), general embedded V2 is much less likely to exist than assumed in Vikner (1995).

Three conditions seem to be necessary for embedded V2 to be possible (e.g. Vikner 2001: 226) – whereas the non-V2 option is always possible, even when these conditions are not observed, as shown below:

(26) a. An embedded V2 clause requires certain matrix verbs (verbs of saying and believing, ...).
   b. An embedded V2 clause requires the matrix verb not to be negated.
   c. An embedded V2 clause has to occur in object position.

Trying to find the common denominator in (26a)-(26c) leads Julien (2015) and many others to say that assertion is the key to embedded V2, but see also e.g. Freitag & Scherf (2016).

Even though the following three have no CP-recursion, the conditions in (26) also hold (a) for embedded V2 in German, (b) for embedded non-V2 topicalisation in English, and (c) for optional at/that in English and Danish. Furthermore, following the spirit - if not the letter - of McCloskey (2006) and Biberauer (2015) might lead to positing an empty higher CP in at least the first two of these three cases.

Summarising this first section, I have made at least the following six observations:

(27) a. V2 is the double movement of an XP into Spec-CP and of the finite verb into C0.
   b. V2 takes place in main clauses, obligatorily.
   c. In modern English, V2 requires that Spec-CP contains a negative element or a wh-element.
d. In the other Germanic languages, V2 is not constrained in any such way.
e. V2 takes place in certain types of embedded clauses as well, but only optionally.
f. Embedded V2 requires that/at in English and Danish, but does not allow dass in German.

1.4 Main clause yes/no-questions: V1 or V2?

In all the Germanic languages, main clause yes/no-questions are V1 (“verb first”), i.e. they have a finite verb in clause-initial position. If we assume that the empty Spec-CP contains an invisible wh-element (an empty operator), these examples are parallel to the examples in the previous section, i.e. they are really “V2” rather than “V1”:

(28) a. **English**
   \[ \text{Spec-CP} \emptyset \text{[\_wh]} \text{[} \text{C} \text{]} \text{[} \text{\_Has} \text{]} \text{Peter} \text{t} \text{1 read} \text{this} \text{book?} \]
   b. **Danish**
   \[ \text{Spec-CP} \emptyset \text{[\_wh]} \text{[} \text{C} \text{]} \text{[} \text{\_Har} \text{]} \text{Peter} \text{t} \text{1 læst} \text{den} \text{her} \text{bog?} \]
   c. **Icelandic**
   \[ \text{Spec-CP} \emptyset \text{[\_wh]} \text{[} \text{C} \text{]} \text{[} \text{\_Hefur} \text{]} \text{Pétur} \text{t} \text{1 lesið} \text{þessa} \text{bók?} \]
   d. **German**
   \[ \text{Spec-CP} \emptyset \text{[\_wh]} \text{[} \text{C} \text{]} \text{[} \text{\_Hat} \text{]} \text{Peter} \text{dieses} \text{Buch} \text{gelesen} \text{t} \text{1?} \]

Assuming an empty wh-element in Spec-CP in (28) might seem to be just a trick (an ad hoc assumption) to save the analysis of the previous sections that all main clauses in the Germanic languages (except English) are V2. However, if the assumption of an empty wh-element in Spec-CP in (28) has other consequences, then it is not ad hoc. Here are three reasons why it is not ad hoc:

(29) a. It correctly predicts that verb-initial main clauses are interpreted as yes/no-questions.
   b. It correctly predicts that verb-initial main clauses trigger do-support.
   c. It accounts for the link between inversion in yes/no-questions and clause-initial wh-elements in wh-questions noted in part b of Greenberg’s (1963: 83) “Universal 11”.

As for (29a), the strings of words in (28) may clearly only be interpreted as questions.

As for (29b), given that an initial wh-element (or an initial negative topic) is needed to trigger subject-auxiliary inversion and do-support, (30b), assuming an empty wh-element in the first position of a main clause yes/no-questions will correctly predict subject-auxiliary inversion and do-support in (31b):

(30) **English**
   a. Yesterday Joe bought three books.
   b. When did Joe buy three books?

(31) **English**
   a. Joe bought three books.
   b. \( \emptyset \text{[\_wh]} \) did Joe buy three books?
As for (29c), let us have a closer look at the link between inversion in yes/no-questions and clause-initial wh-elements in wh-questions noted in the second half of Greenberg’s (1963: 83) “Universal 11”.

(32) Universal 11 (Greenberg 1963: 83)
   a. Inversion of statement order [in interrogative word questions] so that verb precedes subject occurs only in languages where the question word or phrase is normally initial.
   b. This same inversion occurs in yes-no questions only if it also occurs in interrogative word questions.

(33) “Translation”
   a. Subject-verb inversion occurs in wh-questions only if the language has clause-initial wh-elements.
   b. Subject-verb inversion occurs in yes/no-questions only if it occurs in wh-questions.

(34) Inference
   Subject-verb inversion occurs in yes/no-questions only if the language has clause-initial wh-elements.

To see what exactly Greenberg (1963) means, let us take a step back (cf. also Vikner 2007: 471-474). Greenberg presupposes that languages may differ with respect to the following two things:

Languages may or may not have clause-initial wh-elements (e.g. English does, Turkish does not):

(35) a. ENGLISH
   What had Harry read?
   "wh-elements clause initial"
   b. TURKISH
   Hasan ne oku-du?
   Hasan what read-pst
   ‘What did Hasan read?’ (Kornfilt 1997: 10, ex. 36)

Languages may or may not have subject-verb inversion in yes/no-questions (e.g. English does, Turkish does not):

(36) a. ENGLISH
   Has Alfred gone to the cinema?
   "Subject-verb inversion in yes/no-questions"
   b. TURKISH
   Ahmet cinema-ya git-ti mi?
   Ahmet cinema-DAT go-PST Q
   ‘Did Ahmet go to the cinema?’ (Kornfilt 1997: 5, ex. 11)

If these two different properties could combine freely, we would expect languages of all four possible types, as shown in table 1:

This is not the case, however. As Greenberg (1963: 83) observed, a language has subject-verb inversion in yes/no-questions, (36a), only if it has clause-initial wh-elements, (35a). This
Table 1: Possible combinations of wh-fronting and subject-verb inversion in yes/no-questions

<table>
<thead>
<tr>
<th>Combination</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>(35a) + (36a)</td>
<td>e.g. English</td>
</tr>
<tr>
<td>(35b) + (36b)</td>
<td>e.g. Turkish</td>
</tr>
<tr>
<td>(35a) + (36b)</td>
<td>not attested</td>
</tr>
<tr>
<td>(35b) + (36a)</td>
<td>not attested</td>
</tr>
</tbody>
</table>

is where the potentially ad hoc assumption from above comes in, i.e. the assumption of an empty wh-element in the initial position of main clause yes/no-questions in e.g. English.

If we assume that there is an empty wh-element in the initial position of main clause yes/no-questions in e.g. English, then yes/no-questions with subject-verb inversion as in (36a) are parallel to questions with clause-initial wh-elements, (35a), in that in both types, the initial element is a wh-element. The observation that (36a) only occurs in languages that also have (35a) is thus explained, as both are examples of the same structure, clause-initial wh-elements. It is therefore also to be expected that a language which does not have initial wh-elements, like Turkish in (35b), will not have subject-verb inversion in yes/no-questions either, (36b).

The conclusion is therefore that the assumption of an empty wh-element in the first position of a main clause yes/no-questions is not ad hoc, and that the V1 order in main clause yes/no-questions in Germanic is really another set of cases of V2.

2 CP and cP

2.1 Introduction

In this section I will briefly present an analysis of the CP-level in embedded clauses, including what was called CP-recursion in the previous section. The analysis is discussed in much more detail in Nyvad et al. (2016).

We follow the suggestion in Chomsky (2000) that syntactic derivation proceeds in phases and that the syntactic categories vP and CP are phases. We also follow Chomsky (2005) and Chomsky (2006) in taking Internal Merge operations such as A-bar movement to be triggered by an edge feature on the phase head (in Chomsky 2000, this feature is called a P(eripheral)-feature, in Chomsky 2001 a generalised EPP-feature). Below, this feature will be referred to as an OCC (“occurrence”) feature (following Chomsky 2005: 18), which provides an extra specifier position that does not require feature matching. OCC offers an escape hatch allowing an element to escape an embedded clause.

The availability of this generic edge feature OCC together with the availability of multiple specifier positions, however, in principle permits any element from within the phase domain to move across a phase edge, and so island effects should not exist (as also observed by Boeckx 2012: 60-61).

If instead of multiple specifiers, CP-recursion is possible, the Danish data presented in the present paper may be captured in a uniform manner. We will explore a particular derivation of (embedded ) V2, in terms of a cP/CP-distinction, which may be seen as a version of the CP-recursion analysis (deHaan & Weerman 1986, Vikner 1995, Bayer 2002, Walkden 2016, and
many others). Because embedded V2 clauses do not allow extraction, whereas other types of CP-recursion clauses do (Christensen et al. 2013a, Christensen et al. 2013b, Christensen & Nyvad 2014), CP-recursion in embedded V2 is assumed to be fundamentally different from other kinds of CP-recursion:

(37) a. a CP with V2 (headed by a finite verb) = CP (“big CP”)
b. a CP without V2 (headed by a functional element) = cP (“little cP”)

The idea is to attempt a distinction parallel to the vP-VP distinction (Chomsky 1995: 347), with cP being above CP (cf. Koizumi 1995: 148 who posits a CP-PolP corresponding to our cP-CP, and de Cuba’s 2007 independent proposal that non-factive verbs select a non-recursive cP headed by a semantic operator removing the responsibility for the truth of the embedded clause from the speaker).

c⁰ like v⁰ is a functional head, whereas C⁰ like V⁰ should be a lexical head. The latter admittedly only works partially, in that C⁰ is only lexical to the extent that it must be occupied by a lexical category, i.e. a finite verb (including auxiliaries, even if they are often taken to be functional).

2.2 C⁰

Although Spec-CP is the position that attracts topics, also in embedded clauses, its sister C⁰ does not have a topic-feature inherently, but only acquires such a feature through verb movement (cf. Rizzi’s 1996 suggestions for V2 in e.g. main clause questions and negative topicalisations in English and Bayer’s 2002 suggestions for illocutionary force). The fact that C⁰ (or c⁰) does not inherently have a topic feature (which is very different from e.g. the way c⁰ may have a wh-feature) is surely related to the fact that topicalisations are never selected for, i.e. there are verbs that select only embedded questions, but there are no verbs that select only embedded topicalisations. This assumption, that C⁰ only acquires a topic feature through verb movement, also accounts for why topics only occur in Spec-CP if there is a verb in C⁰.

(38)
Where we thus say that the C\textsuperscript{0} associated with the Spec-CP that attracts topics only acquires its topic feature through verb movement, e.g. Julien (2015: 146) argues that the topic C\textsuperscript{0} is a normal C\textsuperscript{0} that may also contain first-merged elements like så ‘then’ in contrastive left dislocations, (39a):

\begin{align*}
\text{(39) } & \text{Danish} \\
& a. \quad [\text{TopicP} \quad \text{Hvis man ikke kan sige noget pænt, } \quad [\text{Topic}^p \quad \text{så}] \quad [\text{ForceP} \quad [\text{Force}^p \quad \text{skal}] \quad \text{man} \\
& \quad \text{If one not can say anything nice then shall one} \\
& \quad \text{tie stille.}] \\
& b. \quad [\text{cP} \quad \text{Hvis man ikke kan sige noget pænt, } \quad [\text{CP} \quad \text{så} \quad [\text{C}^p \quad \text{skal}] \quad \text{man tie stille.}] \\
& \quad \text{If one not can say anything nice then shall one keep quiet}
\end{align*}

However, the fact that e.g. så also occurs in the first position in V2 clauses with no dislocation means that it is a rather unlikely head element, see (39b). We also hesitate to draw conclusions about the syntax of embedded V2 from contrastive left dislocations, as they are also possible in non-V2 embedded clauses (although we have no account for why this is strongly degraded in Swedish and Norwegian, cf. Johannesen 2014: 407):

\begin{align*}
\text{(40) } & \text{Danish} \\
& \text{Det er en skam at den her artikel den aldrig er blevet udgivet.} \\
& \text{It is a shame that this here article it never is been published}
\end{align*}

As topicalisations are never selected for, it follows that a topicalisation-CP (i.e. with a topic in Spec-CP and with a verb moving into C\textsuperscript{0}) cannot be the highest level of an embedded clause (in most Germanic languages, e.g. Danish or English). Another level is necessary above CP, viz. a cP with at/that in C\textsuperscript{0} (and this means that examples with embedded V2 but without a higher complementiser are not expected to occur under our analysis, although admittedly they sometimes do occur, e.g. (ii) in Jensen & Christensen 2013: 55). It is this higher at/that which prevents extraction from Spec-CP (as a kind of that-trace violation, perhaps derived in terms of anti-locality as in Douglas 2015), i.e. (41d):

\begin{align*}
\text{(41) } & \text{Danish} \\
& a. \quad *\text{Sagde Andrea Lego-filmen} \quad \text{havde Kaj allerede set} \quad t_1 \?
& \text{said Andrea Lego-film.def had Kaj already seen} \\
& b. \quad \text{Sagde Andrea at Lego-filmen} \quad \text{havde Kaj allerede set} \quad t_1 \?
& c. \quad *\text{Lego-filmen} \quad \text{sagde Andrea} \quad \text{t}_1 \quad \text{havde Kaj allerede set} \quad t_1 .
& \text{d.} \quad *\text{Lego-filmen} \quad \text{sagde Andrea at} \quad \text{t}_1 \quad \text{havde Kaj allerede set} \quad t_1 .
\end{align*}

(Notice that (41c) is ungrammatical for the same reason as (41a): topicalisations cannot be selected for.)

This is supported by German, which for some reason allows embedded topicalisation without this higher that, (42a), and which allows extraction via Spec-CP, i.e. (42c):
(42) **German**

a. Hat Andrea gesagt, den Lego-Film hat Kai schon $t_1$ gesehen?  
   has Andrea said the Lego-film has Kai already seen
b. *Hat Andrea gesagt, dass den Lego-Film hat Kai schon $t_1$ gesehen?  
   c. Den Lego-Film hat Andrea gesagt, $t_1$ hat Kai schon $t_1$ gesehen.  
   d. *Den Lego-Film hat Andrea gesagt, dass $t_1$ hat Kai schon $t_1$ gesehen.

CP may thus be a phase in German, and in Danish and English (where extractions via Spec-CP are that-trace violations). From this, it would follow that CPs are strong islands (cf. Holmberg 1986: 111, Müller & Sternefeld 1993: 493 ff. Sheehan & Hinzen 2011: 444), provided there is no OCC escape hatch for CP, as opposed to the escape hatch to be suggested for cP in section 2.3 below:

(43) **Danish**

a. Sagde Andrea at måske havde Kaj allerede set Lego-filmen?  
   said Andrea that maybe had Kaj already seen Lego-film.def
b. *Lego-filmen$_1$ sagde Andrea at måske havde Kaj allerede set $t_1$?  
   Lego-film.def said Andrea that maybe had Kaj already seen

(44) **German**

a. Hat Andrea gesagt, vielleicht hat Kai den Lego-Film schon gesehen?  
   has Andrea said maybe has Kai the Lego-film already seen
b. *Den Lego-Film$_1$ hat Andrea gesagt, vielleicht hat Kai $t_1$ schon gesehen.  
   The Lego-film has Andrea said maybe has Kai already seen

One approach that might explain the absence of an escape hatch is to say that embedded V2 clauses are not really embedded at all, but instead there is a radical break/restart at the beginning of an embedded V2 clause, similar to what happens at the beginning of a new main clause (as argued e.g. by Petersson 2014). Then extraction out of an embedded V2 clause like (43b)/(44b) would correctly be ruled out, but this would also incorrectly rule out all other potential links across the edge of embedded V2 clauses (see also Julien 2015: 157-159), so that e.g. the following c-command difference should not exist, as co-reference should (incorrectly) be ruled out in both (45a) and (45b):

(45) **Danish**

a. *Han$_1$ sagde at [CP den her bog ville Lars$_1$ aldrig læse.]  
   He said that this here book would Lars never read
b. Hans$_1$ mor sagde at [CP den her bog ville Lars$_1$ aldrig læse.]  
   His mum said that this here book would Lars never read

Both (45a) and (45b) would be expected to be just as impossible as such links across a main clause boundary:
2.3 $c^0$ with occ

$c^0$ may have a feature that may cause movement to Spec-$cP$, and such a feature can either be a so-called occurrence-feature or a slightly more standard type feature as e.g. a wh-feature.

Chomsky (2005: 18-19) suggests an occ (“occurrence”) feature, which provides an extra specifier position “without feature matching”, i.e. the XP moves into the spec of $c^0_{[occ]}$ without itself having an occ-feature. A $c^0_{[occ]}$ thus offers an escape hatch which allows an XP to escape an embedded clause. (As mentioned above, for some reason, $C^0$ cannot have an occ-feature.)

![Diagram of CP recursion](image)

If $c^0_{[occ]}$ is above another $cP$, then the $cP$-layer headed by a $c^0$ carrying an occ-feature is transparent to selection in the same way as e.g. NegP is in constituent negation (e.g. *she ate not the bread but the cake*) or quantificational layers (as in *she ate all/half the cake*), cf. the notion of extended projections, (Grimshaw 2005). (If, however, it should turn out that $c^0_{[occ]}$ could occur inside another $cP$, then nothing further would need to be said.)

2.4 $c^0$ with other features, e.g. wh

![Diagram of CP recursion](image)
We take the basic distinction between CP and cP to be whether or not there is verb movement into the head, but we want this to go hand in hand with other basic distinctions between the two, e.g. that $C^0$ is the potential host of the topic feature, whereas $c^0$ is the relevant/necessary head for the outside context, e.g. as the highest head of embedded questions or of relative clauses (in the terms of Rizzi 1997: 283, cP is "facing the outside" whereas CP is "facing the inside").

In other words, we want to link the difference $c^0/C^0$ not just to individual features (much like the difference between different heads in the C-domain is linked to features in the cartographic approach, Rizzi 1997, Wiklund et al. 2007, Julien 2015, Holmberg 2015, and many more) – but we also want to link the difference to whether or not the head is the landing site of verb movement.

Spec-cP[wh] in (48a) is where the wh-phrase in an embedded question occurs, and Spec-cP[cf] in (48b) is where we find the empty operator that may occur in e.g. som-relative clauses in Danish (and in that-relative clauses in English).

It appears that a wh-element that has moved into such a Spec cannot move on from here:

(49) **Danish**

a. Spurgte Andrea [cP hvilken film $c^0_{[wh]}$ Kaj allerede havde set]?
   asked Andrea which film Kaj already had seen

b. "Hvilken film spurgte Andrea [cP $t_1 c^0_{[wh]}$ Kaj allerede havde set]?
   which film asked Andrea Kaj already had seen

This may be because the embedded clause in (49b) with an empty spec and an empty $c^0$ can no longer identified as a wh-clause, as is required of an object clause of the verb ask (cf. clausal typing, Cheng 1991).

Following Rizzi & Roberts (1989: 20), Vikner (1995: 50), Grimshaw (1997: 412), the reason why there can be no verb movement into $c^0_{[wh]}$ is that this would change the properties of the selected head (i.e. $c^0_{[wh]}$), and therefore this head would no longer satisfy the requirements of the selecting matrix expression. In fact, according to McCloskey (2006: 103), a head modified in this way (by movement into it) is not an item that could possibly be selected by a higher lexical head (it is not part of the "syntactic lexicon"), which would lead to the prediction that there could not be movement into heads of complements of lexical heads (which may very well be too strong, cf. that it would have consequences for many other cases, e.g. N0-to-D0 movement in Scandinavian would have to be something like N0-to-Num0 movement).

If on the other hand, there is a cP (with the declarative complementizer at in $c^0$) above the
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CP in which V2 takes place, then this problem does not arise. The selected clause is a cP, its head is a c0 containing a complementiser, and the c0 into which there is verb movement is situated lower down inside the cP.

Embedded topicalisations in German, embedded questions in Afrikaans, and embedded questions in some variants of English might be exceptions to the above in that they seem to have embedded V2 into the highest selected complementiser head. In such cases, an “invisible” cP above the embedded V2 cP have been suggested, e.g. in McCloskey (2006: 101) and in Biberauer (2015: 12-13).

2.5 c0 without features

It is also possible for a c0 not to have any features, in which case no movement will take place into Spec-cP. This is possible both when such a c0 is the sister of an IP and when it is the sister of a CP (see also (41b) and (20)-(21) above).

\[ \text{cP} \]
\[ \text{c'} \]
\[ \text{c0} \]
\[ \text{at} \]
\[ \text{that} \]
\[ \text{CP/IP} \]

(51) **Danish**

a. Sagde Andrea at Kaj allerede havde set Lego-ilmen?
   Said Andrea that Kaj already had seen Lego-film.

b. Sagde Andrea at Lego-filmen havde Kaj allerede set?
   Said Andrea that Lego-film had Kaj already seen

Because such an at/that has no special features, it may also occur below other complementisers, when these are selected from above, e.g. below a wh- or a relative cP-layer. As an extra complementiser, at is preferred over other complementisers, which have more content:

(52) **Danish**

... hvis at det ikke havde været så sorgeligt.
   if that it not had been so sad

2.6 Predictions concerning extraction

The above suggestions (especially the occ escape hatch in cP discussed in section 2.3 above) make the prediction that extraction is possible almost everywhere (i.e. except topic islands),
which is much more general than usually assumed (including in Vikner 1995). However, it turns out that such unexpectedly acceptable examples include extractions from relative clauses:

(53) **Danish**

a. Pia har engang mødt en pensionist som havde sådan en hund.
   Pia has once met a pensioner that had such a dog

b. Sådan en hund har Pia engang mødt [DP en [NP pensionist] [cP t₁ c₀[occ] [cP OP₂ such a dog has Pia once met a pensioner [c₀ som] [w t₂ havde t₁.]]]
   that had

(Christensen & Nyvad 2014: 35, (13c,d))

… and extractions from embedded questions (wh-islands):

(54) **Danish**

a. Hvilken båd foreslog naboen [cP t₁ c₀[occ] [cP hvor billigt₂ c₀[wh] [IP vi how cheaply we skulle sælge t₁ t₂?]]]
   which boat suggested neighbour.def should sell

b. Hvor billigt₂ foreslog naboen [cP t₂ c₀[occ] [cP hvilken båd₁ c₀[wh] [IP vi which boat we skulle sælge t₁ t₂?]]]
   how cheaply suggested neighbour.def should sell

(Christensen et al. 2013a: 63)

(55) **Danish**

Om morgenen skulle jeg give dem medicinen, noget brunt stads, [cP OP₁ som morning.def should I give them medicine.def some brown stuff that [w jeg ikke ved [cP t₁ c₀[occ] [cP hvad₂ c₀[wh] [IP t₁ var t₂.]]]]
   In the morning. should I give them medicine. some brown stuff what was


… as well as extractions from adverbial clauses:

(56) **Danish**

... men det₁ bliver han så vred [cP t₁ c₀[occ] [cP OP [c₀ når] [IP man siger t₁.]]]
   but that becomes he so angry when one says

(Knud Poulsen, 1918, cited in Hansen 1967: I: 110)

### 3 Conclusion

Where section 1 gave an overview of the verb second (V2) phenomenon, as found in both main and embedded clauses in Germanic, section 2 explored a particular derivation of (embedded) V2, in terms of a cP/CP-distinction, as discussed in much more detail in Nyvad et al. (2016).
All the Germanic languages except modern English are V2, i.e. in all declarative main clauses and in all wh-questions, the finite verb is in the second position, regardless of whether the first position is occupied by the subject or by some other constituent, as also summarised in (27) above. This can be extended to yes/no-questions, provided it is assumed that the first position in such questions is empty (and such an assumption is supported by the fact that it allows an account for Greenberg’s 1963: 83 “Universal 11”, cf. Vikner 2007).

No particular type of embedded clause in Germanic ever requires V2, and although V2 is optionally possible in many embedded clauses, this is normally not the case for all types of embedded clauses, as e.g. embedded questions (almost) never allow V2 (Julien 2007, Vikner 2001, though see McCloskey 2006 and Biberauer 2015).

Section 2 briefly presented an analysis of the CP-level in embedded clauses, including what is often seen as CP-recursion in cases of embedded V2. The analysis, which is discussed in much more detail in Nyvad et al. (2016), attempts to unify a whole range of different phenomena related to extraction and embedding, while acknowledging that extraction in Danish is considerably less restricted than has often been assumed.

The CP-recursion that takes place in syntactic environments involving movement out of certain types of embedded clauses seems to be fundamentally different from that occurring in embedded V2 contexts, and hence, we proposed a CP/CP distinction: The CP-recursion found e.g. in complementiser stacking and in long extractions requiring an occ-feature involves a recursion of CP, (57a), whereas the syntactic island constituted by embedded V2 involves the presence of a CP, (57b).

\[
\begin{align*}
&\text{(57) a. } \\
&\quad \text{CP} \\
&\quad \quad \text{t}_{\text{wh}} \\
&\quad \quad \quad \text{c'} \\
&\quad \quad \quad \quad \text{c'}^{0}_{\text{occ}} \\
&\quad \quad \quad \quad \text{cP} \\
&\quad \quad \quad \quad \quad \text{wh/orp} \\
&\quad \quad \quad \quad \quad \quad \text{c'} \\
&\quad \quad \quad \quad \quad \quad \quad \text{c'}^{0}_{\text{wh/orp}} \\
&\quad \quad \quad \quad \quad \quad \quad \quad \text{IP} \\
\end{align*}
\]
The exact structure of CP-recursion may be subject to parametric variation: German does not seem to allow CP-recursion given that extraction from embedded *wh*-questions is ungrammatical irrespective of which function the extracted element has (unless it moves via Spec-CP, (42c)), and given that embedded V2 is in complementary distribution with the presence of an overt complementiser in C₀.

Whether a cartographic approach to the structure of the CP-domain in the Scandinavian languages will turn out to be more appropriate than a CP-recursion analysis (Rizzi 1997, Wiklund et al. 2007, Julien 2015, Holmberg 2015, and many more), we will leave for future research to decide. Until we have data that support a fine-grained left periphery in the relevant structures in Danish, the version of CP-recursion as argued for here would appear promising, as it captures the data presented here while making perhaps slightly less stipulations than e.g. the cartographic approach or the multiple specifier analysis.

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**References**


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[https://sites.google.com/site/samwop4/home/samwop-4-handouts-slides](https://sites.google.com/site/samwop4/home/samwop-4-handouts-slides).


Chomsky, Noam. 2006. Approaching UG from below. Ms, MIT.


Wackernagel, Jacob. 1892. Uber ein Gesetz der indogermanischen Wortstellung [About a law for word order in IndoEuropean]. Indogermanische Forschungen 1. 333–436.

