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 *c*P/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 *c*P/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 *c*P ("little *c*P").

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

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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**

1 one constituent	–	2 finite verb	–	3 the rest of the clause
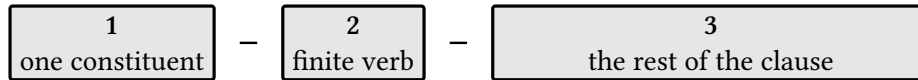
Den Besten (1983) was the first to suggest an analysis that found its canonical form in Platzack (1985) and Chomsky (1986: 6), as double movement of some XP into Spec-CP and of the finite verb into C^0:

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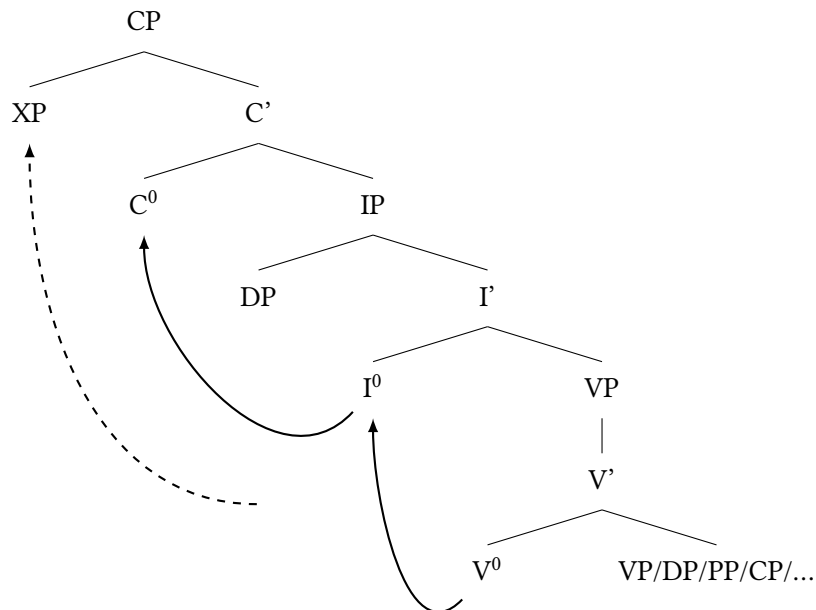
In order to find out whether a language is V2, we have to examine main clauses, but not subject-initial ones, because here even English and French might appear to be V2:

(3) a. DANISH
        Peter **har** sandsynligvis læst den her bog.
        Peter has probably   read this here book
    b. ICELANDIC
        Pétur **hefur** sennilega lesið þessa bók.
        Peter has   probably read this   book
    c. GERMAN
        Peter **hat** wahrscheinlich dieses Buch gelesen.
        Peter has probably   this   book read

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 C^0, whereas in (3d)-(3e) the subject presumably occupies Spec-IP and the finite verb I^0.

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 C^0:

(7)   ENGLISH
   a.   [$_{\text{Spec-CP}}$ ...] [$_{C^0}$ **that**]   [the children have not seen this film.]$_{\text{IP}}$
   b.   [$_{\text{Spec-CP}}$ Only this film$_2$] [$_{C^0}$ **have**$_1$] [the children ___$_1$ not seen _____$_2$.]$_{\text{IP}}$

(8)   DANISH
   a.   [$_{\text{Spec-CP}}$ ...] [$_{C^0}$ **at**]   [børnene har set den her film.]$_{\text{IP}}$
   b.   [$_{\text{Spec-CP}}$ Den her film$_2$] [$_{C^0}$ **har**$_1$] [børnene ___$_1$ set _____$_2$.]$_{\text{IP}}$

(9)   ICELANDIC
   a.   [$_{\text{Spec-CP}}$ ...] [$_{C^0}$ **að**]   [börnin hafa séð þessa mynd.]$_{\text{IP}}$
   b.   [$_{\text{Spec-CP}}$ Þessa mynd$_2$] [$_{C^0}$ **hafa**$_1$] [börnin ___$_1$ séð _____$_2$.]$_{\text{IP}}$

(10)   GERMAN
   a.   [$_{\text{Spec-CP}}$ ...] [$_{C^0}$ **dass**]   [die Kinder diesen Film gesehen haben.]$_{\text{IP}}$
   b.   [$_{\text{Spec-CP}}$ Diesen Film$_2$] [$_{C^0}$ **haben**$_1$] [die Kinder _____$_2$ gesehen ___$_1$.]$_{\text{IP}}$

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

(12)   a.   ENGLISH
         Had$_1$ I t_1 had more time, I would have made an even longer hand-out.
      b.   DANISH
         Havde$_1$ jeg t_1 mere tid, ville jeg have lavet et endnu længere hand-out.
      c.   ICELANDIC
         Hefði$_1$ ég t_1 haft meiri tíma, myndi ég hafa gert ennþá lengri úthendu.
      d.   GERMAN
         Hätte$_1$ ich mehr Zeit gehabt t_1, hätte ich ein noch längeres Thesenpapier gemacht.

(13)   a.   ENGLISH
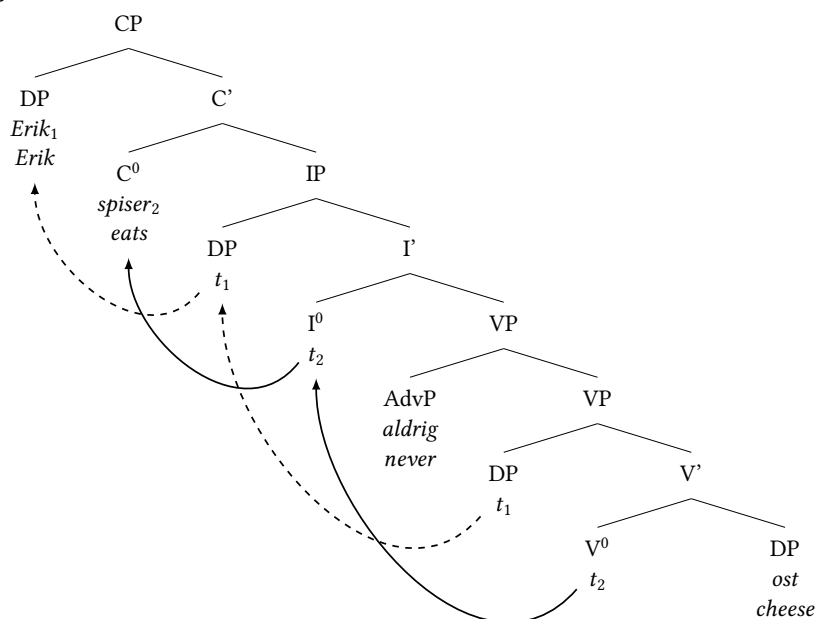   *****Had**$_1$ **if** I t_1 had more time, I would have made an even longer hand-out.
      b.   DANISH
         *****Havde**$_1$ **hvis** jeg t_1 haft mere tid, ville jeg have lavet et endnu længere hand-out.
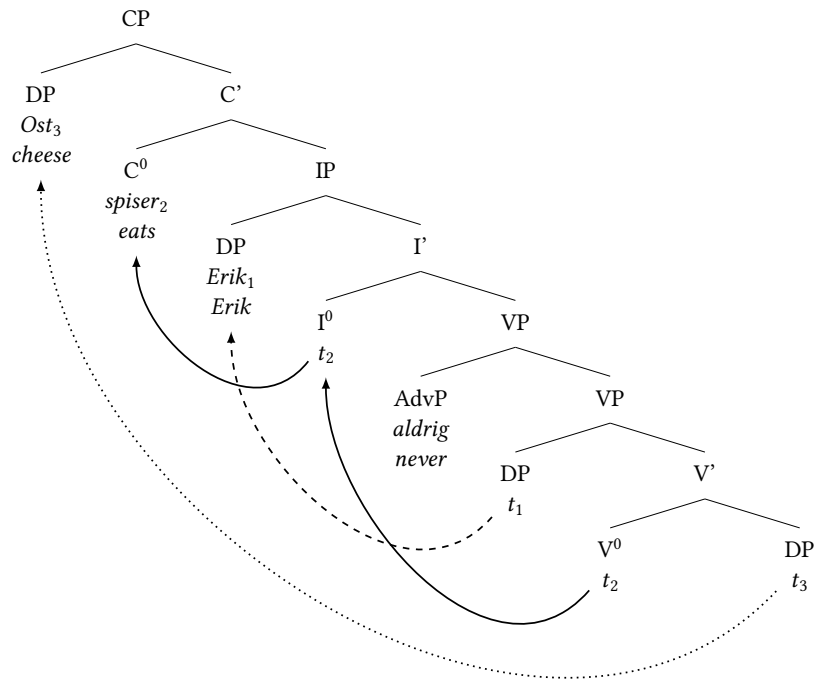
    c.   ICELANDIC

        Hefði₁ ef ég t₁ haft meiri tíma, myndi ég hafa gert ennþá lengri úthendu.

    d.   GERMAN

        Hätte₁ wenn ich mehr Zeit gehabt t₁, hätte ich ein noch längeres Thesenpapier gemacht.

(14) a.   ENGLISH

        If had₁ I t₁ had more time, I would have made an even longer hand-out.

    b.   DANISH

        Hvis havde₁ jeg t₁ haft mere tid, ville jeg have lavet et endnu længere hand-out.

    c.   ICELANDIC

        Ef hefði₁ ég t₁ haft meiri tíma, myndi ég hafa gert ennþá lengri úthendu.

    d.   GERMAN

        Wenn hätte₁ 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**

b.   **Non-Subject-initial V2**

CP

DP   C'
Ost$_3$
cheese

C^0 IP
spiser$_2$
eats

DP   I'
Erik$_1$
Erik

I^0 VP
t$_2$

AdvP   VP
aldrig
never

DP   V'
t$_1$

V^0 DP
t$_2$ *t$_3$*

c.   **Non-Subject-initial V2**

CP

AdvP   C'
Måske
maybe

C^0 IP
spiser$_2$
eats

DP   I'
Erik$_1$
Erik

I^0 VP
t$_2$

AdvP   VP
aldrig
never

DP   V'
t$_1$

V^0 DP
t$_2$ *ost$_3$*
cheese
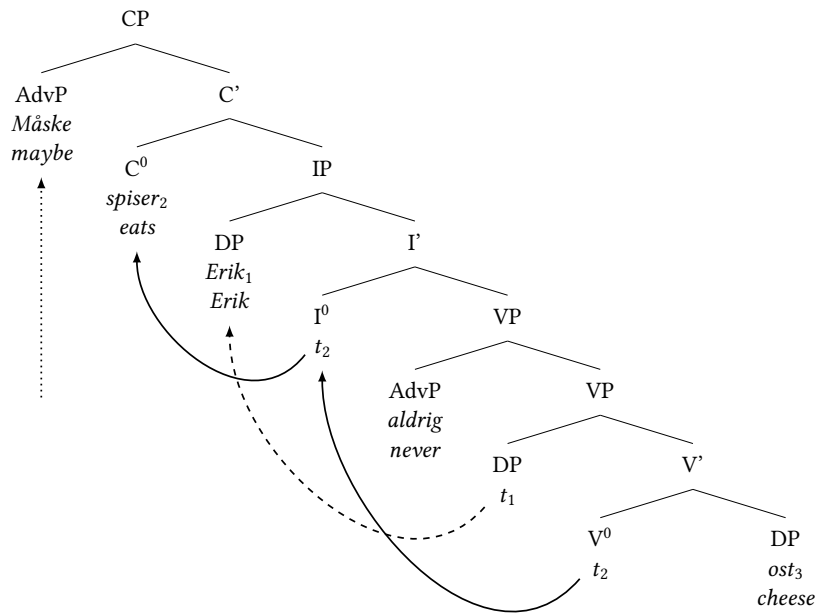
1.2 V2 in English main clauses

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
           [$_\text{Spec-CP}$ Which book$_2$] [$_{C^0}$ **has**$_1$] Peter t_1 read t_2?
       b.   *[$_\text{Spec-CP}$ Which book$_1$] Peter has read t_1?
       c.   DANISH
           [$_\text{Spec-CP}$ Hvad for en bog$_2$] [$_{C^0}$ **har**$_1$] Peter t_1 læst t_2?
       d.   ICELANDIC
           [$_\text{Spec-CP}$ Hvaða bók$_2$] [$_{C^0}$ **hefur**$_1$] Pétur t_1 lesið t_2?
       e.   GERMAN
           [$_\text{Spec-CP}$ Welches Buch$_2$] [$_{C^0}$ **hat**$_1$] Peter t_2 gelesen t_1?

(17)   a.   ENGLISH
           [$_\text{Spec-CP}$ Why] [$_{C^0}$ **has**$_1$] Peter t_1 read this book?
       b.   *[$_\text{Spec-CP}$ Why] Peter has read this book?
       c.   DANISH
           [$_\text{Spec-CP}$ Hvorfor] [$_{C^0}$ **har**$_1$] Peter t_1 læst den her bog?
       d.   ICELANDIC
           [$_\text{Spec-CP}$ Af hverju] [$_{C^0}$ **hefur**$_1$] Pétur t_1 lesið þessa bók?
       e.   GERMAN
           [$_\text{Spec-CP}$ Warum] [$_{C^0}$ **hat**$_1$] Peter dieses Buch gelesen t_1?

English also has to have V2 with topicalised negative elements:

(18)   a.   ENGLISH
           [$_\text{Spec-CP}$ Never] [$_{C^0}$ **have**$_1$] the children t_1 seen such a bad film.
       b.   *[$_\text{Spec-CP}$ Never] the children have seen such a bad film.
       c.   DANISH
           [$_\text{Spec-CP}$ Aldrig] [$_{C^0}$ **har**$_1$] børnene t_1 set sådan en dårlig film.
       d.   ICELANDIC
           [$_\text{Spec-CP}$ Aldrei] [$_{C^0}$ **hafa**$_1$] börnin t_1 séð svona slæma mynd.
       e.   GERMAN
           [$_\text{Spec-CP}$ Nie] [$_{C^0}$ **haben**$_1$] die Kinder so einen schlechten Film gesehen t_1.

(19)   a.   ENGLISH
           [$_\text{Spec-CP}$ Only in America] [$_{C^0}$ **could**$_1$] such a thing t_1 happen.
       b.   *[$_\text{Spec-CP}$ Only in America] such a thing could happen.
       c.   DANISH
           [$_\text{Spec-CP}$ Kun i Amerika] [$_{C^0}$ **kunne**$_1$] sådan noget t_1 ske.
       d.   ICELANDIC
           [$_\text{Spec-CP}$ Aðeins í Bandaríkjunum] [$_{C^0}$ **gæti**$_1$] eitt hvað svona t_1 gerst.
       e.   GERMAN
           [$_\text{Spec-CP}$ Nur in Amerika] [$_{C^0}$ **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)
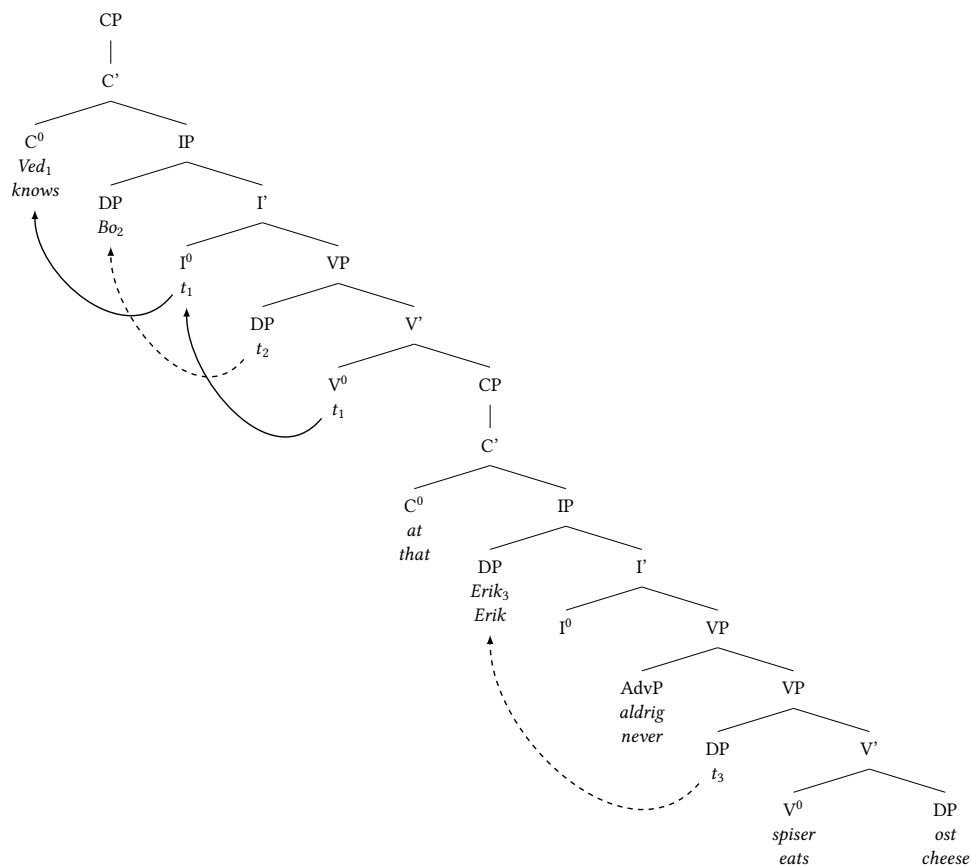
However, sometimes it is also possible to have what has been called "embedded main clauses": embedded clauses with main clause word order, i. e. with V2. Vikner (1995: 80-87) and many others analyse such clauses as cases of a CP inside another CP (see also section 2 below).

(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. V^0-to-I^0-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.

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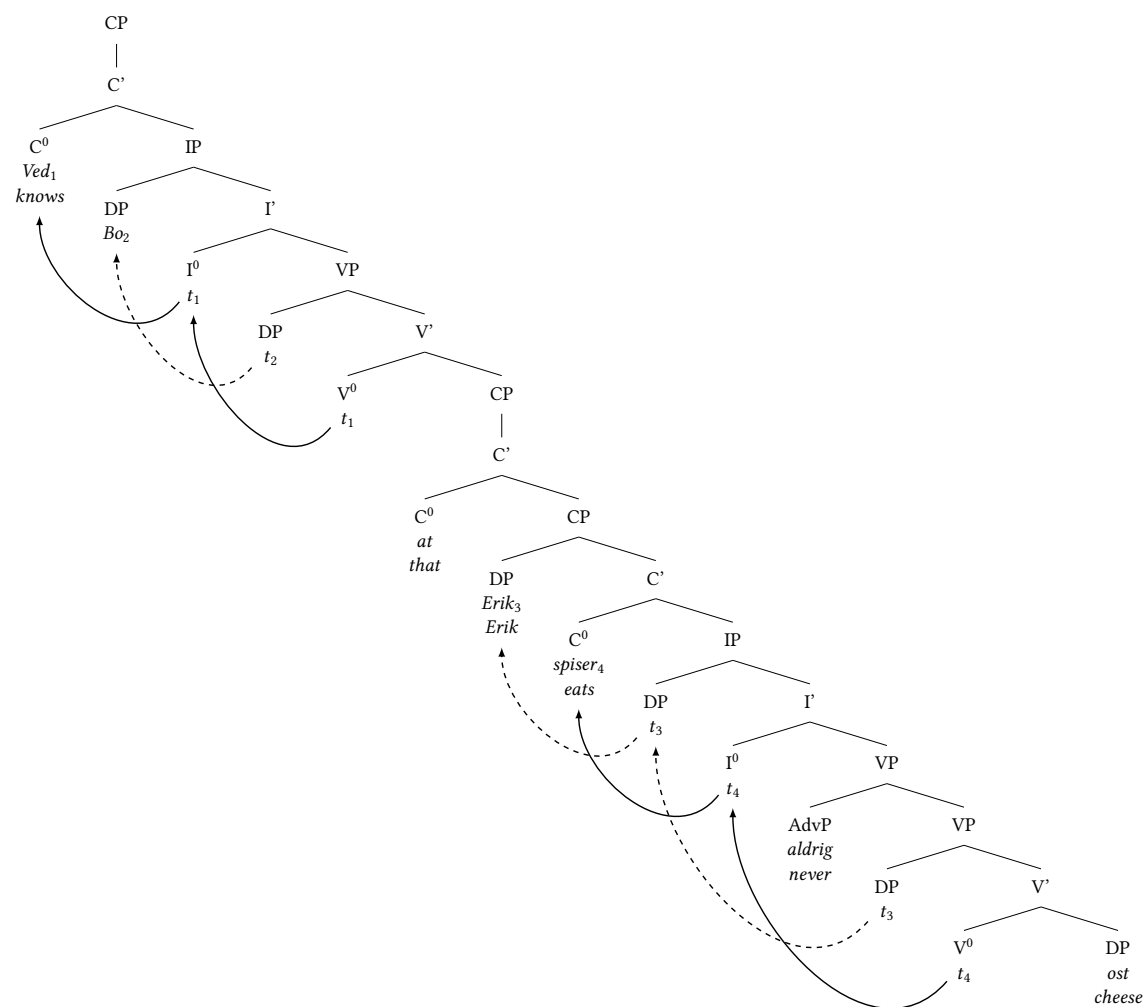
b. **Embedded non-subject initial V2**
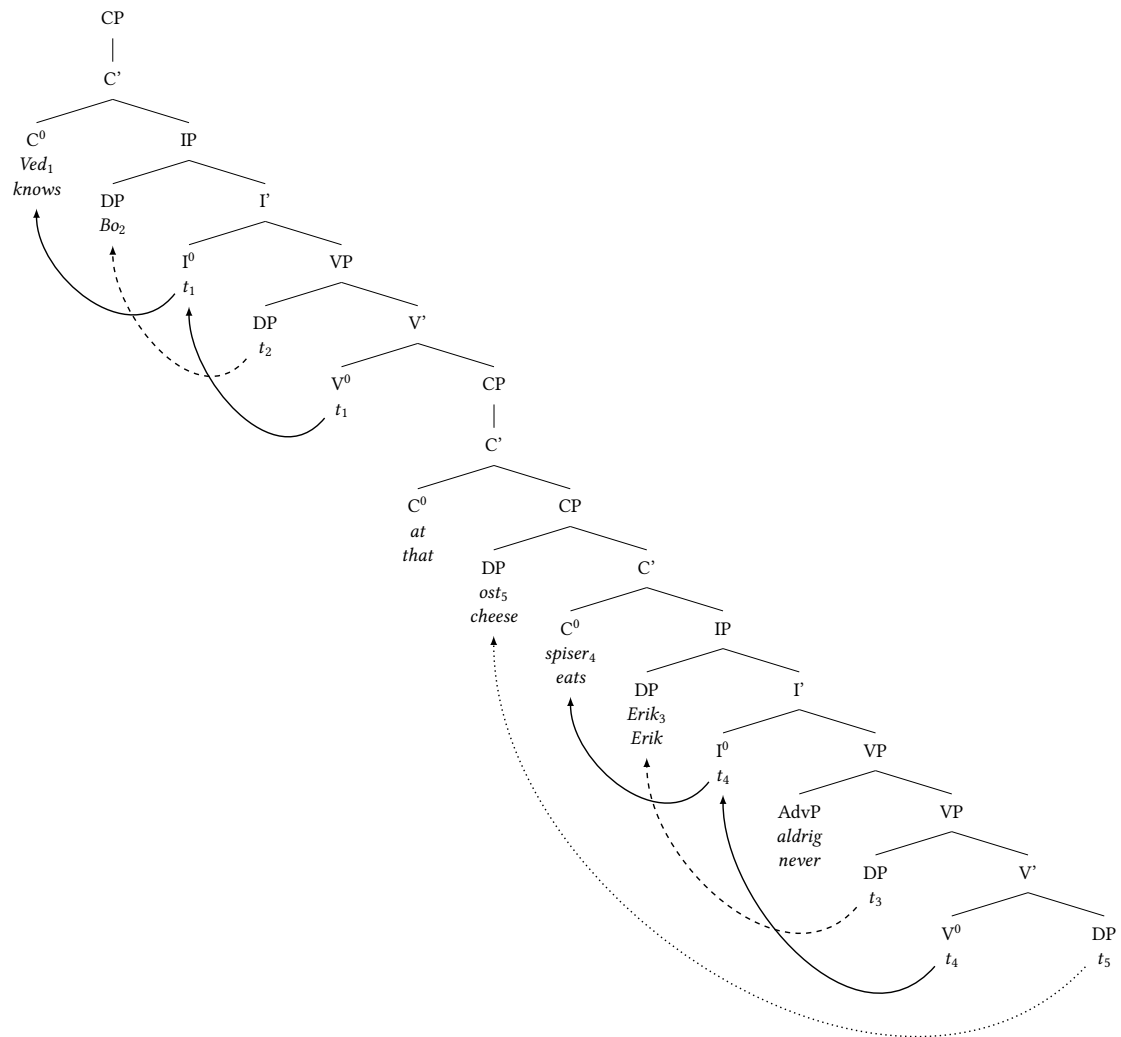
Embedded V2 is realised in different ways in Danish, English and German. Embedded V2 in English is only possible with a negative element in Spec-CP (cf. section 1.2 above), whereas in Danish and German, there is no such restriction.

(22) ENGLISH
I think …

a. ... ([$_{C^0}$ **that**]) Max [$_{C^0}$ **would**$_1$] never read papers on the train. −V2

b. *... [$_{C^0}$ **that**] papers [$_{C^0}$ **would**$_1$] Max t_1 never read on the train. +V2

c. *...   papers [$_{C^0}$ **would**$_1$] Max t_1 never read on the train. +V2

    d.   ... [$_{C^0}$ **that**] under no circumstances [$_{C^0}$ **would**$_1$] Max t_1 ever read papers
       on the train.   +V2

    e.   *...   under no circumstances [$_{C^0}$ **would**$_1$] Max t_1 ever read papers
       on the train.   +V2

In English and Danish, the complementiser *that*/*at*, which is optional in normal embedded clauses, is obligatory with embedded V2.

(23)   Danish

    a.   Jeg tror ([$_{C^0}$ **at**]) Max aldrig læser aviser i toget.   −V2
       I   think   that Max never reads papers in train.DEF

    b.   Jeg tror [$_{C^0}$ **at**] i toget [$_{C^0}$ **læser**$_1$] Max aldrig t_1 aviser.   +V2

    c.   *Jeg tror i toget   [$_{C^0}$ **læser**$_1$] Max aldrig t_1 aviser.   +V2
       I   think in train.DEF   reads Max never   papers

    d.   Jeg tror [$_{C^0}$ **at**] under ingen omstændigheder [$_{C^0}$ **ville**$_1$] Max t_1 læse aviser
       I   think   that under no   circumstances   would Max   read papers
        i toget.   +V2
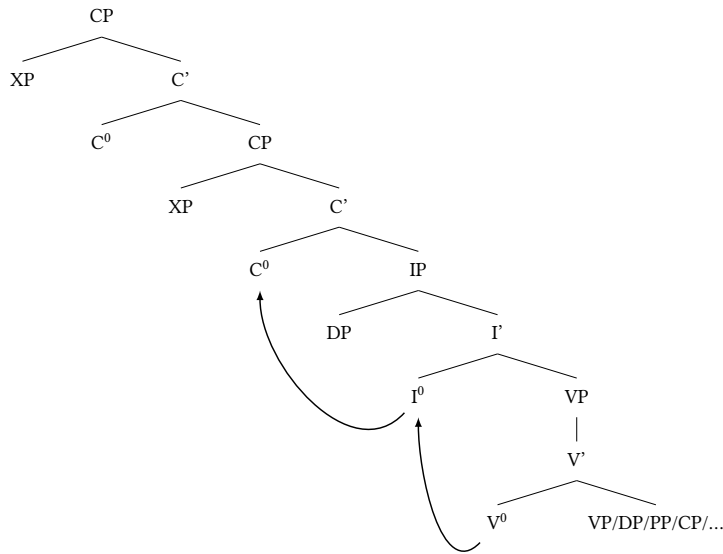   in train.DEF

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

(24)   German

    a.   Ich glaube, [$_{C^0}$ **dass**] Max nie   im   Zug Zeitung   liest.   −V2
       I   think   that Max never in.the train newspaper reads

    b.   *Ich glaube, [$_{C^0}$ **dass**] im Zug [$_{C^0}$ **liest**$_1$] Max nie Zeitung t_1.   +V2

    c.   Ich glaube, im   Zug [$_{C^0}$ **liest**$_1$] Max nie   Zeitung t_1.   +V2
       I   think in.the train   reads Max never newspaper

    d.   Ich glaube, unter keinen Umständen   [$_{C^0}$ **würde**$_1$] Max im   Zug
       I   think under no   circumstances   would Max in.the train
       Zeitung   lesen t_1.   +V2
       newspaper read

   Some kind of recursive CP-analysis, (21), is therefore only necessary for embedded V2 in English and Danish, not for embedded V2 in German:

(25)   Danish and English
        Embedded V2

```
                          CP
                   ┌──────┴──────┐
                  XP             C'
                          ┌───────┴───────┐
                         C⁰              CP
                                  ┌───────┴───────┐
                                 XP              C'
                                          ┌───────┴───────┐
                                         C⁰              IP
                                                  ┌───────┴───────┐
                                                 DP              I'
                                                          ┌───────┴───────┐
                                                         I⁰              VP
                                                                          │
                                                                          V'
                                                                  ┌───────┴───────┐
                                                                 V⁰        VP/DP/PP/CP/...
```

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
            $[_{\text{Spec-CP}} \varnothing_{[\text{WH}]}]$ $[_{\text{C}^0}$ **Has**$_1]$ Peter t_1 read this book?

        b.   DANISH
            $[_{\text{Spec-CP}} \varnothing_{[\text{WH}]}]$ $[_{\text{C}^0}$ **Har**$_1]$ Peter t_1 læst den her bog?

        c.   ICELANDIC
            $[_{\text{Spec-CP}} \varnothing_{[\text{WH}]}]$ $[_{\text{C}^0}$ **Hefur**$_1]$ Pétur t_1 lesið þessa bók?

        d.   GERMAN
            $[_{\text{Spec-CP}} \varnothing_{[\text{WH}]}]$ $[_{\text{C}^0}$ **Hat**$_1]$ Peter dieses Buch gelesen t_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. $\varnothing_{[\text{WH}]}$ **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?   wh-*elements not necessarily clause initial*
      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?   *No subject-verb inversion in* yes/no-*questions*
      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

(35a)	+	(36a)	=	e. g. English
(35b)	+	(36b)	=	e. g. Turkish
(35a)	+	(36b)		not attested
(35b)	+	(36a)		not attested

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 *c*P

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 *v*P 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 *c*P/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:
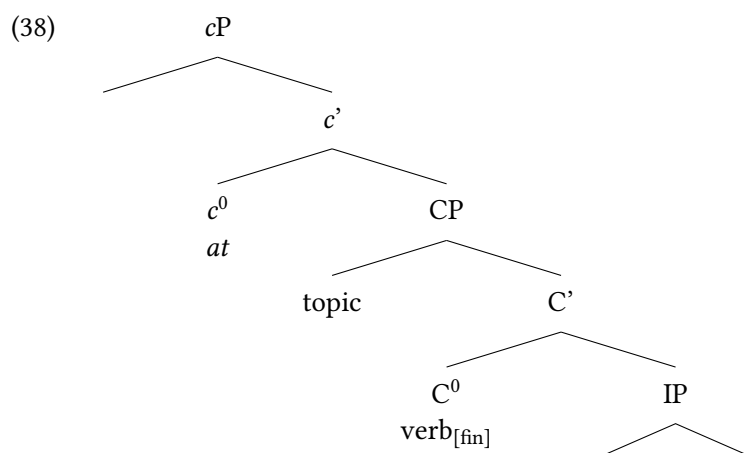
(37)   a.   a CP with V2 (headed by a finite verb)   = CP ("big CP")
       b.   a CP without V2 (headed by a functional element) = cP ("little cP")

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).

c^0 like v^0 is a functional head, whereas C^0 like V^0 should be a lexical head. The latter admittedly only works partially, in that C^0 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 C^0

Although Spec-CP is the position that attracts topics, also in embedded clauses, its sister C^0 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 C^0 (or c^0) does not inherently have a topic feature (which is very different from e. g. the way c^0 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 C^0 only acquires a topic feature through verb movement, also accounts for why topics only occur in Spec-CP if there is a verb in C^0.

(38)

```
            cP
           /   \
                 c'
               /    \
            c⁰        CP
            at       /   \
                 topic     C'
                         /    \
                       C⁰       IP
                  verb[fin]     /\
                              /____\
```

Where we thus say that the C^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^0 is a normal C^0 that may also contain first-merged elements like *så* 'then' in contrastive left dislocations, (39a):

(39)   DANISH

    a.   [$_\text{TopicP}$ Hvis man ikke kan sige noget   pænt, [$_\text{Topic}^0$ så] [$_\text{ForceP}$ [$_\text{Force}^0$ skal] man
           If   one not can say anything nice   then   shall one
           tie   stille.]]
           keep quiet

    b.   [$_\text{cP}$ Hvis man ikke kan sige noget   pænt, [$_\text{CP}$ så [$_\text{C}^0$ skal] man tie   stille.]]
           If   one not can say anything nice   then   shall one keep quiet

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):

(40)   DANISH
    Det er en skam   at   *den her   artikel den* aldrig er blevet udgivet.
    It   is a   shame that this here article it   never is been   published

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^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 *c*P with *at/that* in c^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):

(41)   DANISH
    a.   *Sagde Andrea Lego-filmen$_1$ havde Kaj allerede set t_1?
           said   Andrea Lego-film.DEF had   Kaj already seen
    b.   Sagde Andrea at Lego-filmen$_1$ havde Kaj allerede set t_1?
    c.   *Lego-filmen$_1$ sagde Andrea t_1 havde Kaj allerede set t_1.
    d.   *Lego-filmen$_1$ sagde Andrea at t_1 havde Kaj allerede set t_1.

(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$_1$ hat Andrea gesagt, t_1 hat Kai schon t_1 gesehen.
    d.   *Den Lego-Film$_1$ 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 *c*P 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:

(46)　Danish

    a.　*I går　　mødte jeg ham$_1$ i　bussen. [$_{CP}$ Lars$_1$ var　lige blevet forfremmet.]
       Yesterday met　I　him　in bus.the　　Lars　had just been　promoted
    b.　*I går　　mødte jeg hans$_1$ mor i　bussen. [$_{CP}$ Lars$_1$ var lige blevet forfremmet.]
   Yesterday met　I　his　　mum in bus.the　　Lars　had just been　promoted

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.)

(47)
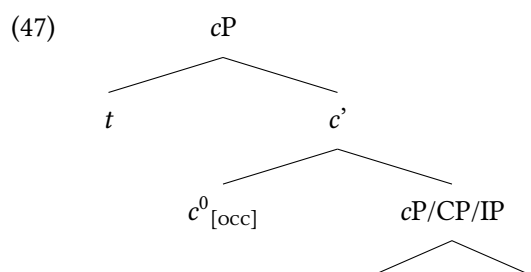
If $c^0_{[occ]}$ is above another cP, then the cP-layer headed by a c^0 carrying an occ-feature is transparent to selection in the same way as e. g. NegP is in constituent negation (e. g. *she ate not the bread but the cake*) or quantificational layers (as in *she ate all/half the cake*), cf. the notion 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*

(48)　a.

b.

cP
- OP
- c'
  - $c^0_{[\text{OP}]}$
  - cP/CP/IP
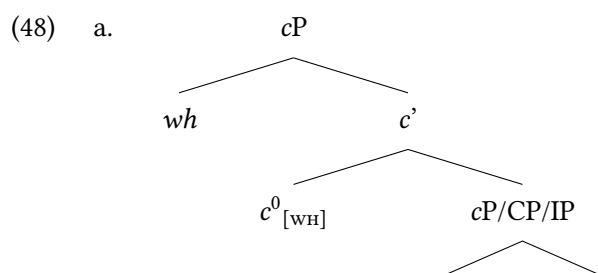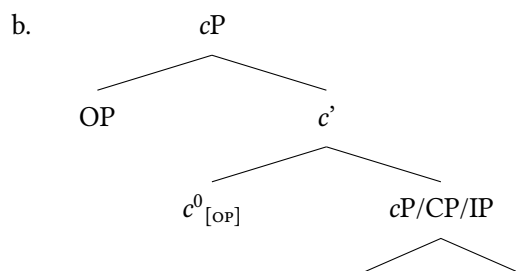
We take the basic distinction between CP and cP to be whether or not there is verb movement into the head, but we want this to go hand in hand with other basic distinctions between the two, e. g. that C^0 is the potential host of the topic feature, whereas c^0 is the relevant/necessary head for the outside 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$_{[\text{WH}]}$ in (48a) is where the *wh*-phrase in an embedded question occurs, and Spec-cP$_{[\text{OP}]}$ 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 $c^0_{[\text{WH}]}$ Kaj allerede havde set]?
        asked   Andrea   which film   Kaj already   had   seen
   b.   *Hvilken film$_1$ spurgte Andrea [$_{cP}$ t_1 $c^0_{[\text{WH}]}$ 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 $c^0_{[\text{WH}]}$ is that this would change the properties of the selected head (i. e. $c^0_{[\text{WH}]}$), 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. N^0-to-D^0 movement in Scandinavian would have to be something like N^0-to-Num^0 movement).
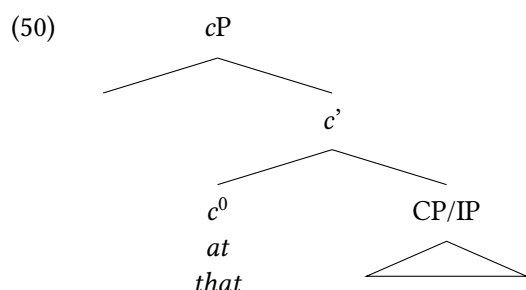
If on the other hand, there is a cP (with the declarative complementizer *at* in c^0) above the

CP in which V2 takes place, then this problem does not arise. The selected clause is a *c*P, its head is a c^0 containing a complementiser, and the C^0 into which there is verb movement is situated lower down inside the *c*P.

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" *c*P above the embedded V2 CP have been suggested, e. g. in McCloskey (2006: 101) and in Biberauer (2015: 12-13).

2.5 *c^0* without features

It is also possible for a c^0 not to have any features, in which case no movement will take place into Spec-*c*P. This is possible both when such a c^0 is the sister of an IP and when it is the sister of a CP (see also (41b) and (20)-(21) above).

(50)

```
              cP
         ┌─────────┐
                  c'
            ┌──────────┐
          c⁰           CP/IP
          at           ┌──────┐
          that         △
```

(51) DANISH

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

    b. Sagde Andrea at   Lego-filmen   havde Kaj allerede set?
         Said   Andrea that Lego-film.DEF 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 *c*P-layer. As an extra complementiser, *at* is preferred over other complementisers, which have more content:

(52) DANISH
    … hvis at   det ikke havde været så sørgeligt.
       if   that it not had   been so sad
    (Tom Kristensen, 1921, cited in Hansen 1967: III: 388, in Vikner 1995: 122, (149c), and in Nyvad 2016: 368, (10))

2.6 Predictions concerning extraction

The above suggestions (especially the OCC escape hatch in *c*P 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$_1$ har Pia engang mødt [$_{DP}$ en [$_{NP}$ pensionist] [$_{cP}$ t_1 $c^0_{[occ]}$ [cP OP$_2$
        Such a dog   has Pia once   met   a   pensioner
        [c^0 som] [$_{IP}$ t_2 havde t_1.]]]]
            that   had
   (Christensen & Nyvad 2014: 35, (13c,d))

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

(54)   Danish
   a.   Hvilken båd$_1$ foreslog   naboen   [$_{cP}$ t_1 $c^0_{[occ]}$ [cP hvor billigt$_2$ $c^0_{[WH]}$ [$_{IP}$ vi
        Which   boat suggested neighbour.DEF   how cheaply   we
        skulle   sælge t_1 t_2?]]]
        should sell
   b.   Hvor billigt$_2$ foreslog   naboen   [$_{cP}$ t_2 $c^0_{[occ]}$ [cP hvilken båd$_1$ $c^0_{[WH]}$ [$_{IP}$ vi
        How cheaply suggested neighbour.DEF   which   boat   we
        skulle   sælge t_1 t_2?]]]
        should sell
   (Christensen et al. 2013a: 63)

(55)   Danish
        Om morgenen   skulle jeg give dem medicinen,   noget brunt stads, [$_{cP}$ OP$_1$ som
        In morning.DEF should I   give them medicine.DEF some brown stuff   that
        [$_{IP}$ jeg ikke ved   [$_{cP}$ t_1 $c^0_{[occ]}$ [cP hvad$_2$ $c^0_{[WH]}$ [$_{IP}$ t_1 var t_2.]]]]]
            I   not know   what   was
        (http://ordnet.dk/ddo/ordbog?query=stads, Hjort & Kristensen 2003-2005)

… as well as extractions from adverbial clauses:

(56)   Danish
        … men det$_1$ bliver   han så vred   [$_{cP}$ t_1 $c^0_{[occ]}$ [cP OP [c^0 når]   [$_{IP}$ man siger t_1.]]]
            but that becomes he   so angry   when   one says
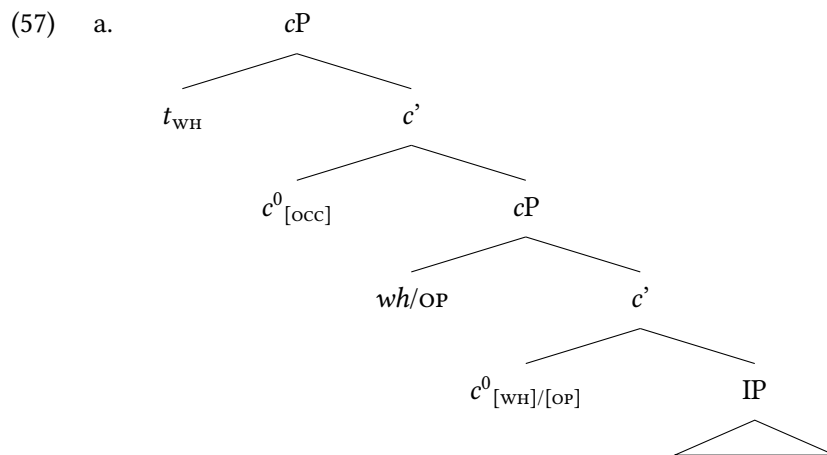   (Knud Poulsen, 1918, cited in Hansen 1967: I: 110)

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 *c*P/CP-distinction, as discussed in much more detail in Nyvad et al. (2016).
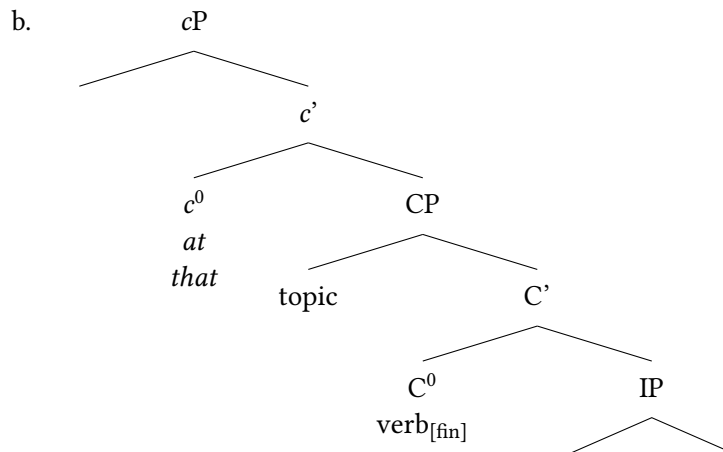
All the Germanic languages except modern English are V2, i. e. in all declarative main clauses and in all *wh*-questions, the finite verb is in the second position, regardless of whether the first position is occupied by the subject or by some other constituent, as also summarised in (27) above. This 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 *c*P/CP distinction: The CP-recursion found e. g. in complementiser stacking and in long extractions requiring an occ-feature involves a recursion of *c*P, (57a), whereas the syntactic island constituted by embedded V2 involves the presence of a CP, (57b).

(57) a.

b.

```
                        cP
                       /  \
                       c'
                      /  \
                    c⁰    CP
                    at    /  \
                   that  topic  C'
                              /  \
                             C⁰   IP
                          verb[fin]  /\
```

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 C^0.

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 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.

Acknowledgements

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