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Trees and Fields and Negative Polarity

Abstract

The paper[1] takes as its point of departure a comparison between two kinds of approaches to clause structure, namely tree analyses like the generative analysis and field analyses like the *sætningsskema* analysis of Danish of Diderichsen (1946) and many others (or like the *topologische Modell* analysis of German of Drach 1937 and many others).

The particular difference between the two kinds of analyses which I explore in this paper concerns c-command, which is a relationship between different constituents in a clause. I shall try to show how useful and indispensable c-command is when it comes to accounting for negative polarity items in English, Danish and German, both the more straightforward aspects and the more complex ones, e.g. the so-called NPI-verbs as well as the interaction between NPI-elements and *because*-clauses.

1.   Introduction

1.1. Clause structure in tree analyses and in field analyses

A fundamental difference between various approaches to clause structure is the one between

- **tree analyses** like the generative analyses that Torben Thrane and I both work with (Thrane 1999, 2003, 2008, 2009, ..., Vikner 1995, 1999a,b, 2007, ...) **and**

- **field analyses** like the *sætningsskema* analyses of Danish of Diderichsen (1946, 1964) and many others or like the *topologische Modell* analyses of German of Drach (1937) and many others.

The difference is the extent to which the various parts of the clause are seen

- as boxes inside other boxes**, or**
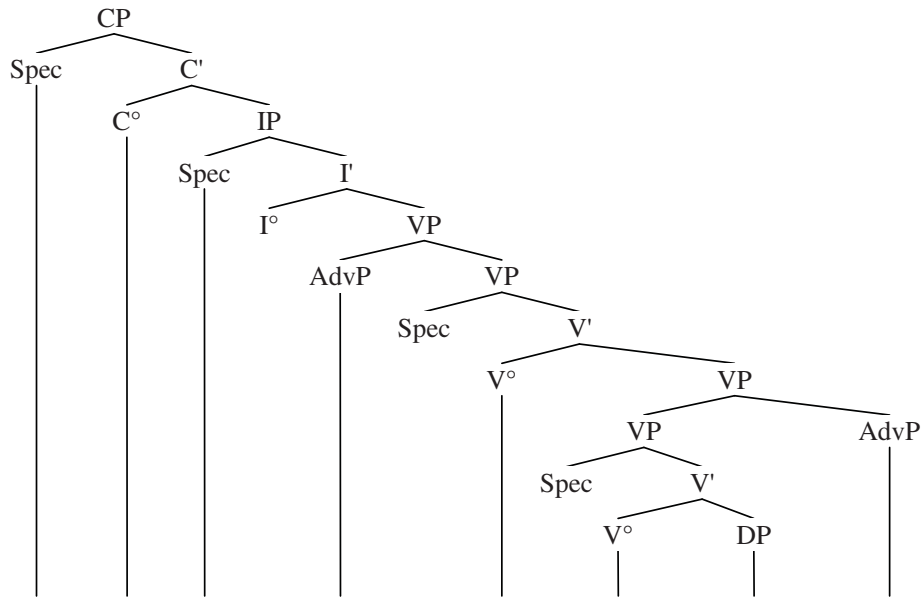- as pearls on a string, one after the other.

It is a question of extent, as neither of the two can be 0% or 100%: Even to Diderichsen (1946), some constituents are inside other constituents (e.g. the object or N is part of the content field), and even in the generative analyses, some constituents follow other constituents (otherwise trees would only contain mothers and daughters, but no sisters).

The generative **tree structure** in (1)a is compared to the (simplified) Diderichsen **field model** of constituent order in modern Danish, Norwegian and Swedish, as illustrated in (1)b for main clauses and in (1)c for embedded clauses:

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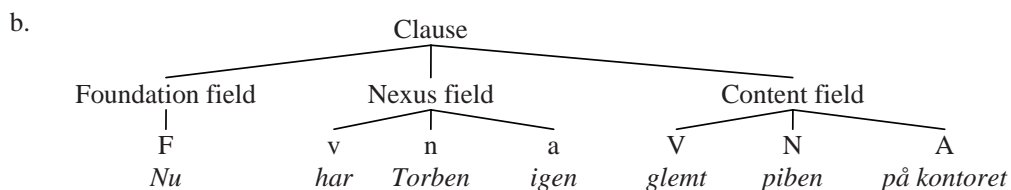   *sten.vikner@hum.au.dk*

(1) a.

```
                    CP
          ┌─────────┴─────────┐
        Spec                  C'
                      ┌───────┴───────┐
                     C°               IP
                              ┌───────┴───────┐
                            Spec              I'
                                      ┌───────┴───────┐
                                     I°               VP
                                            ┌─────────┴─────────┐
                                          AdvP                  VP
                                                        ┌───────┴───────┐
                                                      Spec              V'
                                                              ┌─────────┴─────────┐
                                                             V°                   VP
                                                                          ┌───────┴───────┐
                                                                         VP              AdvP
                                                                 ┌───────┴───────┐
                                                               Spec              V'
                                                                         ┌───────┴───────┐
                                                                        V°               DP
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b.

Found.	Nexus field				Content field		
F	**v**	**n**	**a**		**V**	**N**	**A**
Nu	har	Torben	igen		glemt	piben	på kontoret.
Now	*has*	*Torben*	*again*		*forgotten*	*pipe-the*	*in office-the*

c.

Conj. field	Nexus field				Content field		
	k	**n**	**a**	**v**	**V**	**N**	**A**
	om	Torben	igen	har	glemt	piben	på kontoret.
	if	*Torben*	*again*	*has*	*forgotten*	*pipe-the*	*in office-the*

One difference is that in (1)b,c the number of levels and the kinds of constituents that can occur on each level are fixed: There are three levels containing three different kinds of constituents, namely clause – fields – slots / *sætning – felter – pladser*. In other words, the only possible sister of a field is another field, and the only possible sister of a slot is another slot. In (1)a, on the other hand, this is not the case at all. It is perfectly possible to have a head (X°) and a phrase (XP) as sisters.

   Another difference is that (1)a is based on constituents, as supported by constituency tests. In (1)b,c, however, this is not always the case, as constituency tests will show e.g. that part of V may form a constituent together with N.

   Please notice that the difference in (1) between tree analyses and field analyses is **NOT** one of notation. The tree in (1)a can also be expressed by means of boxes or (or at least square brackets) as in (2)a, and the boxes in (1)b can also be illustrated by means of a tree structure as in (2)b:

(2) a. [CP [AdvP Nu] [C° har] [IP [DP Torben] [VP [AdvP igen] [VP [VP [V° glemt] [DP piben]]
     [PP på kontoret]]]]

b.

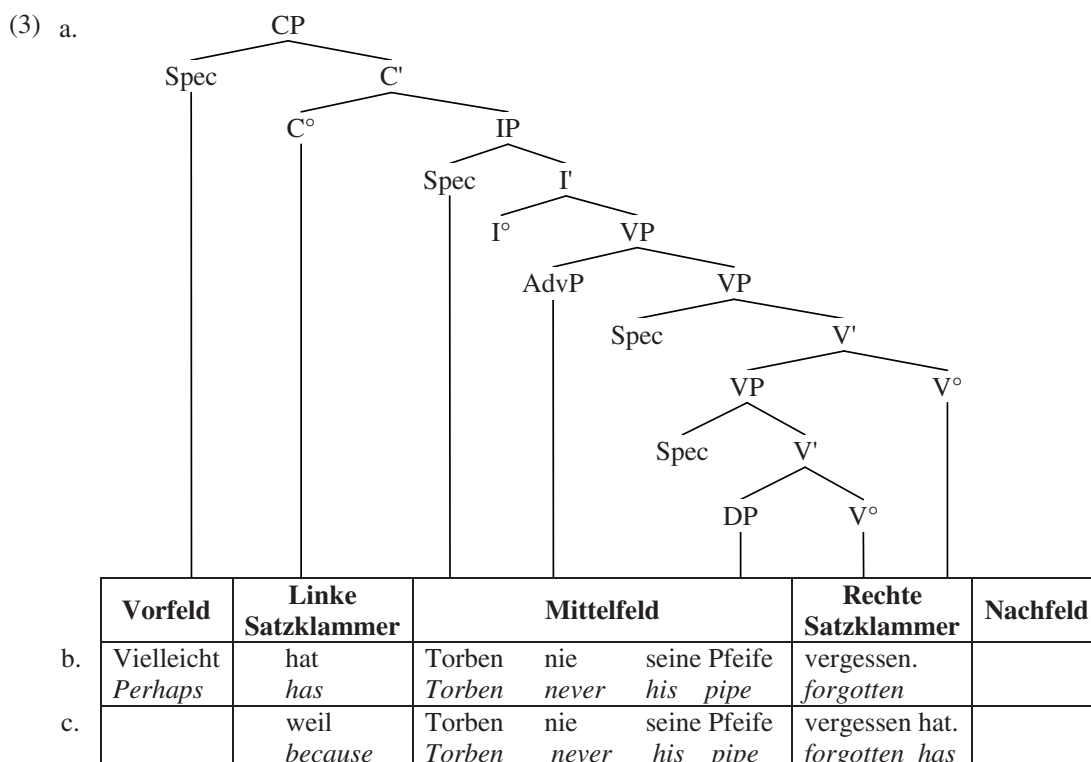| Clause						
Foundation field	Nexus field			Content field		
F	v	n	a	V	N	A
Nu	*har*	*Torben*	*igen*	*glemt*	*piben*	*på kontoret*

Although I prefer a tree analysis along the lines of (1)a, I willingly admit that field based models like (1)b,c may have e.g. pedagogical use, as in Conrad et al. (1980:182). Cf. also that it is used in a comparison of Danish and English word order by Davidsen-Nielsen/Harder (2000).

Collapsing the Diderichsen model for the main clause with the one for the embedded clause, as in (1)b,c, was not done by Diderichsen himself but by Platzack (1985:71, fn 5) and Heltoft (1986:108). For more details and many more references, see Bjerre et al. (2008).

The differences between the two approaches is not just found in the discussion of Danish and the other Scandinavian languages, it is also very prominent in the discussion of e.g. German and Dutch. Also here both tree analyses and field analyses have a considerable number of advocates.

A generative **tree structure** of German is found in (3)a, followed by the simplified **field model**/topological model analyses of German main and embedded clauses in (3)b,c. For more details and more references, see Wöllstein-Leisten et al. (1997) or any of the recent editions of the *Duden* grammars (e.g. Fabricius-Hansen et al. 2005:879).

(3) a.

	Vorfeld	**Linke Satzklammer**	**Mittelfeld**			**Rechte Satzklammer**	**Nachfeld**
b.	Vielleicht *Perhaps*	hat *has*	Torben *Torben*	nie *never*	seine Pfeife *his pipe*	vergessen. *forgotten*	
c.		weil *because*	Torben *Torben*	nie *never*	seine Pfeife *his pipe*	vergessen hat. *forgotten has*	

As far as English is concerned, field analyses are not that common, in fact they mainly occur when English is compared to either German or Scandinavian, e.g. Diderichsen (1953) and Hartvigson (1969). However, even though field analyses are thus rather scarce, this does not mean that all analyses of English clause structure employ a tree analysis. In fact, a great many analyses of Eng-

lish employ something rather close to a field analysis, where most constituents of the clause (e.g. subject, verb, indirect object, object, subject predicate, object predicate, adverbial) are seen as being on the same level, like pearls on a string. Such analyses include Quirk et al. (1985), Preisler (1997), Bache/Davidsen-Nielsen (1997) and Hjulmand/Schwarz (2010).

1.2. C-command

In the tree analyses of generative grammar, frequent reference is made to the relation "C-command":

(4) **C-command:** X c-commands Y if and only if

a. all constituents that contain X also contain Y,

b. neither X nor Y dominates the other.

In other words: if you can get from X to Y in the tree by taking one step upwards and then climbing downwards the rest of the way, then X c-commands Y.

C-command may be used to make a number of different generalisations, e.g. concerning where reflexive pronouns may and may not be used -- as described e.g. in my MA-dissertation, which was supervised, incidentally, by a certain T. Thrane (Vikner 1985).

C-command is also crucial to generalisations of the following apparently universal type: A pronoun and a DP may not be coreferential if the pronoun c-commands the DP.

(5) En. a. <u>Torben</u> said that <u>he</u>   was retiring.   NAME C-COMMANDS PRONOUN,
                                                                  COREFERENCE POSSIBLE

 b. <u>He</u>   said that <u>Torben</u> was retiring.   PRONOUN C-COMMANDS NAME,
                                                              COREFERENCE **IM**POSSIBLE

(6)
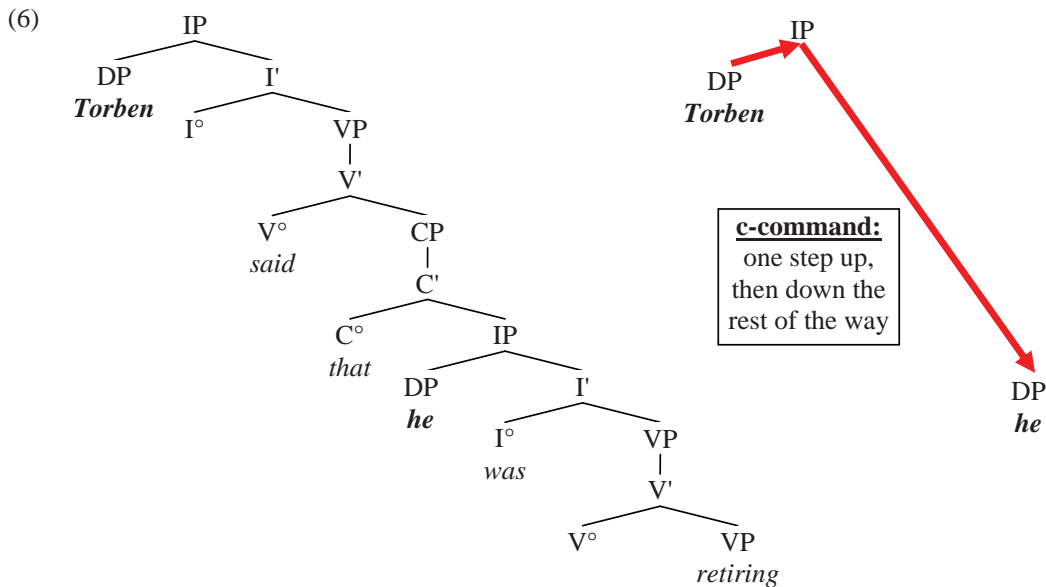
Such generalisations would seem much more difficult to formulate within field model analyses. In a Diderichsen model, (1)b,c, (2)b, the subject would only c-command other elements **inside** the nexus field, but it would not c-command the object itself, (22), nor any elements inside an object clause, (6).

In this article, I want to show, with illustrations from the area of negation and negative polarity items, that the generative version of c-command illustrated in (4)-(6) is very useful and that e.g. a purely linear rule would not be able to make the right distinctions.

First, however, we need to consider negative polarity items in detail.

2.   Negative polarity items (NPIs)

2.1. Assertive vs. nonassertive vs. negative items

Quirk et al. (1985: 782) gives the following list of items that fall into one of three groups that they call assertive, nonassertive or negative items.

(7)

Assertive	Nonassertive	Negative
some	*any*	*no / none*
something	*anything*	*nothing*
somebody	*anybody*	*nobody*
someone	*anyone*	*no one*
somewhere	*anywhere*	*nowhere*
sometimes	*ever*	*never*
already	*yet*	
still	*any more / any longer*	*no more / no longer*
too	*either*	*neither*
to some extent	*at all*	*not at all*

Assertive items do not change the polarity of a clause (i.e. whether a clause is negative or positive). This can be shown by means of tag questions: If a clause is negative, its tag question has to be positive, and vice versa:

(8)   En. a.   Torben just bought "Pride and Prejudice", didn't he?
          b.   * Torben just bought "Pride and Prejudice", did   he?

(9)   En. a.   Torben just bought <u>some</u> books, didn't he?
          b.   * Torben just bought <u>some</u> books, did   he?

Negative items turn a positive sentence into a negative one:

(10) En. a.   * Torben did<u>n't</u> buy "Pride and Prejudice", didn't he?
          b.   Torben did<u>n't</u> buy "Pride and Prejudice", did   he?

(11) En. a.   * Torben bought <u>no</u> books this week, didn't he?
          b.   Torben bought <u>no</u> books this week, did   he?

Nonassertive items do not change the polarity of a sentence either, but they require the sentence to be negative (certain other contexts work as well: questions, conditional clauses, comparatives, superlatives, ...):

(12) En. a.   * Torben bought   <u>any</u> books this week, didn't he?
          b.   Torben did<u>n't</u> buy <u>any</u> books this week, did   he?

Quirk et al.'s (1985:782) nonassertive items in (7) are part of what is otherwise known as "**negative polarity items**" (**NPIs**).

2.2. Negative polarity items are not just idiomatic expressions

The adverbial expression En. *at all* / Da. *overhovedet* / Ge. *überhaupt* is a negative polarity item (NPI), as it would seem to need a negative element to be possible (or a question/conditional/comparative ...). However, at first glance one might simply think this dependence on negation comes from *at all* being part of the idiomatic expression *not ... at all*:

(13) En. a. * Torben   understands Icelandic <u>at all</u>.
   b. Torben does <u>not</u> understand Icelandic <u>at all</u>.

 Da. c. * Torben forstår islandsk <u>overhovedet</u>.
   d. Torben forstår <u>ikke</u> islandsk <u>overhovedet</u>.

 Ge. e. * Torben versteht <u>überhaupt</u> Isländisch.
   f. Torben versteht <u>überhaupt</u> <u>nicht</u> Isländisch.

But this would predict the following to be ungrammatical, as there is no *not*:

(14) En. a. * Some students in this class understand Icelandic <u>at all</u>.
   b. <u>No</u> students in this class understand Icelandic <u>at all</u>.

 Da. c. * Nogle studerende på det her hold forstår islandsk <u>overhovedet</u>.
   d. <u>Ingen</u> studerende på det her hold forstår islandsk <u>overhovedet</u>.

 Ge. e. * Einige Studenten in diesem Seminar verstehen <u>überhaupt</u> Isländisch.
   f. <u>Keine</u> Studenten in diesem Seminar verstehen <u>überhaupt</u> Isländisch.

(15) En. a. * Torben understands one of the Baltic languages <u>at all</u>.
   b. Torben understands <u>none</u> of the Baltic languages <u>at all</u>.

 Da. c. * Torben forstår et af de baltiske sprog <u>overhovedet</u>.
   d. Torben forstår <u>ingen</u> af de baltiske sprog <u>overhovedet</u>.

 Ge. e. * Torben versteht <u>überhaupt</u> eine von den baltischen Sprachen.
   f. Torben versteht <u>überhaupt</u> <u>keine</u> von den baltischen Sprachen.

(16) En. a. * Torben sometimes speaks German <u>at all</u>.
   b. Torben <u>never</u> speaks German <u>at all</u>.

 Da. c. * Torben taler nogle gange tysk <u>overhovedet</u>.
   d. Torben taler <u>aldrig</u> tysk <u>overhovedet</u>.

 Ge. e. * Torben spricht <u>überhaupt</u> ab und zu Deutsch.
   f. Torben spricht <u>überhaupt</u> <u>nie</u> Deutsch.

The idiomatic expression hypothesis would run into even bigger problems with examples that are not negative in any way at all, like *yes/no*-questions, as such examples only display part of the idiom *not at all*, and therefore should be impossible:

(17) En. a. Does Torben understand Icelandic <u>at all</u>?
   b. Does Torben <u>not</u> understand Icelandic <u>at all</u>?

 Da. c. Forstår Torben <u>overhovedet</u> islandsk?
   d. Forstår Torben <u>overhovedet</u> <u>ikke</u> islandsk?

 Ge. e. Versteht Torben <u>überhaupt</u> Isländisch?
   f. Versteht Torben <u>überhaupt</u> <u>nicht</u> Isländisch?

2.3. English and Danish NPIs

Here are a few English NPIs (in addition to the nonassertive items from (7) above):

(18)   *all that* + adj/adv
          a red cent
          stand (as verb)
          bat an eyelid
          bother to do something
          budge an inch
          do a thing about something
          drink a drop
          give a damn about something
          hold a candle to someone
          move a muscle
          say a word about something
          see a living soul
          sleep a wink

Here are two lists, (19) and (20), of negative polarity items in Danish -- the result of a quick check of the electronic version of *NuDansk Ordbog* (Appel et al. 2002). In the first list, (19), the NPIs can be used both in negated clauses and in questions or conditionals:

(19) a.   **Arguments**
          nogetsomhelst
          skyggen af noget
          en brik / en bønne / en disse / en dyt / en døjt / en flyvende fis / et hak / et klap / et kuk /
              et kvidder / et kvæk / en lyd / en meter / et muk / en pind / et pip / en pløk / en skid /
              en snus / spor / en stavelse / et suk
          (money only) *en hvid / en klink / en rød reje / en rød øre*

     b.   **Adjectives / Adverbs**
          nævneværdig(t)   *synderlig(t)*

     c.   **Place Adverbials**
          nogen steder   *nogetsteds*

     d.   **Time Adverbials**
          nogensinde   *endnu*
          på noget tidspunkt

     e.   **Measure adverbials**
          overhovedet   *i det hele taget*
          på nogen måde   *så meget som ....*
          i mindste måde

     f.   **Verbs**
          behøve (with infinitive only)   *døje*
          fordrage   *orke*

     g.   **Full VPs**
          falde nogen ind at ...   *være helt appelsinfri*
          finde hoved og hale på/i noget   *være med nogens gode vilje*
          fortænke nogen i noget   *være nogens afdeling*
          have en jordisk chance   *være nogens kop te*
          have noget at skulle have sagt   *være noget at rafle/tale om*
          kimse ad noget   *være noget galt i at ...*
          lade noget sidde på sig   *være nogen ben i noget*
          lade sig mærke med noget   *være på talefod*
          se en hånd for sig   *være rigtig klog / være vel forvaret*
          skulle nyde noget   *være så dårligt/slemt*
          tro sine egne øjne   *være til at blive klog på*
          vokse på træerne   *være tilfældet at ...*
          være at foragte

In the second list of negative polarity items in Danish, (20), the NPIs can be used in negated clauses but for some reason, they are not so good in questions or conditionals:

(20) a. **Adjectives (inside arguments)**
det mindste
det fjerneste

b. **Adverbial**
heller

c. **Full VPs**

give fem flade øre for noget   *lukke et øje*
give noget ved dørene   *løfte en finger*
have en trevl på kroppen   *sige noget to gange*
have opfundet den dybe tallerken   *stikke op for bollemælk*
have opfundet det varme vand   *tro nogen over en dørtærskel*
have opfundet krudtet   *ville røre noget med en ildtang*
have tone i livet   *være bleg for at ...*
krumme et hår på nogens hovede   *være lutter lagkage*
kunne gøre en kat fortræd   *være mange sure sild værd*
kunne tage/snuppe/udstå noget   *være tabt bag af en vogn*
lægge fingrene imellem   *være til at stå for*
lægge skjul på noget   *være ved sine fulde fem*

2.4. Licensing of NPIs requires c-command

The negative polarity element must be c-commanded by the licenser, e.g. by the negative element (see e.g. Fromkin 2000: 223, 404, though see Hoeksema 2000 for certain problems with this analysis).

The subject c-commands the object, but the object does not c-command the subject. Therefore a negative subject can license an NPI-object, but a negative object cannot license an NPI-subject:
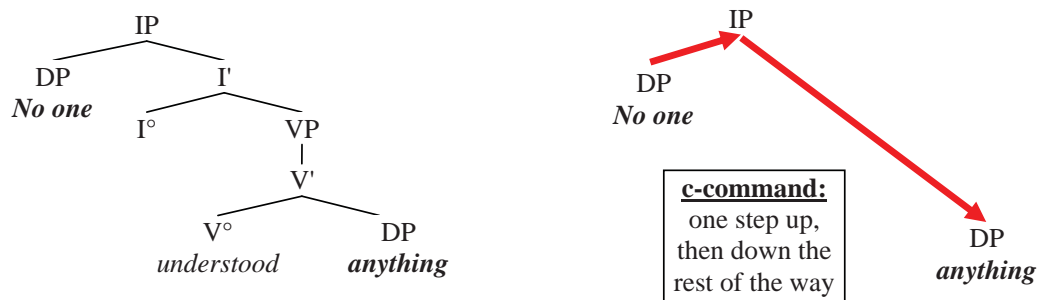
(21) En. a. <u>No one</u> understood <u>anything</u>.
b. * <u>Anyone</u> understood <u>nothing</u>.
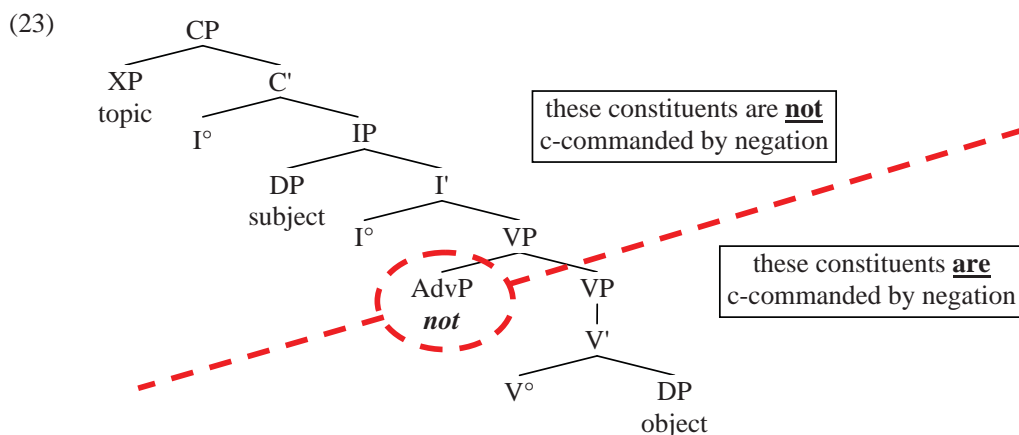
Da. c. <u>Ingen</u>   forstod <u>nogetsomhelst</u>.
d. * <u>Nogensomhelst</u> forstod <u>ingenting</u>.

(22)

For the purposes of this article[2], I will simply assume that sentential negation has the same position in the tree as any other sentential adverbial. This has the following consequences for c-command:

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2 For a much more detailed discussion of negation in Danish and other languages, including the position of negation, see Christensen (2005, e.g. pp. 28 & 38ff), and also Christensen (2008).

(23)

```
              CP
          ┌────┴────┐
         XP         C'
        topic    ┌───┴───┐
                I°        IP
                      ┌────┴────┐
                     DP         I'
                   subject   ┌───┴───┐
                            I°       VP
                         ┌───┴───┐
                        AdvP     VP
                        *not*     │
                                  V'
                              ┌───┴───┐
                             V°        DP
                                     object
```

these constituents are **not** c-commanded by negation

these constituents **are** c-commanded by negation

The subject position (IP-spec) is not c-commanded by the negation, (24)a,d, but the position of the logical subject ("the associate") in *there*-constructions is, (24)b,e.

(24) En. a.   * Because <u>anybody</u> was<u>n't</u>   standing outside the door, ...
     b.   Because there   was<u>n't</u> <u>anybody</u> standing outside the door, ...
     c.   * Because there   was   <u>anybody</u> standing outside the door, ...

     Da. d.   * Fordi <u>nogensomhelst</u> <u>ikke</u> stod   uden for døren , ...
     e.   Fordi der   <u>ikke</u> stod <u>nogensomhelst</u> uden for døren , ...
     f.   * Fordi der   stod <u>nogensomhelst</u> uden for døren , ...

The negative polarity element can also be licensed by a negative element in a different clause, provided there is c-command:

(25) En. a.   * Because Torben   thought that I would <u>ever</u> understand it, ...
     b.   Because Torben did<u>n't</u> think   that I would <u>ever</u> understand it, ...
     c.   * Because Torben <u>ever</u>   thought that I would <u>not</u>   understand it, ...

     Da. d.   * Fordi Torben   troede at jeg <u>nogensinde</u> ville forstå det, ...
     e.   Fordi Torben <u>ikke</u>   troede at jeg <u>nogensinde</u> ville forstå det, ...
     f.   * Fordi Torben <u>nogensinde</u> troede at jeg <u>ikke</u>   ville forstå det, ...

     Ge. g.   * Weil Torben   geglaubt hat, dass ich es <u>jemals</u> verstehen würde, ...
     h.   Weil Torben <u>nicht</u>   geglaubt hat, dass ich es <u>jemals</u> verstehen würde, ...
     i.   * Weil Torben <u>jemals</u> geglaubt hat, dass ich es <u>nicht</u>   verstehen würde, ...

A topicalised object is not c-commanded by the negation (i.e. the situation that counts is the one **after** movement of the object from the object position to topic position in CP-spec, cf. (23)):

(26) En. a.   Torben had <u>not</u> met <u>a living soul</u>
     b.   *   <u>A living soul</u>   Torben had <u>not</u> met
     c.   <u>Not</u> <u>a living soul</u> had Torben   met

     Da. d.   Torben   havde   <u>ikke</u> mødt <u>en levende sjæl</u>.
     e.   *   <u>En levende sjæl</u> havde Torben <u>ikke</u> mødt.
     f.   <u>Ikke</u> <u>en levende sjæl</u> havde Torben   mødt.

     Ge. g.   Torben   hatte   <u>keine</u> Menschenseele getroffen.
     h.   * <u>Eine Menschenseele</u>   hatte Torben <u>nicht</u>   getroffen.
     i.   <u>Keine</u> Menschenseele hatte Torben   getroffen.

I shall now try to show that the c-command condition on NPI-licensing is necessary, and that it cannot be replaced by a precedence condition[3]. Consider first a set of examples where the NPI *a word* is **both c-commanded and preceded** by the licenser:

(27) a. En.   Earlier   <u>nobody</u> tried   to understand <u>a word</u> during the classes
    b. Da.   Tidligere forsøgte <u>ingen</u>   at forstå <u>et ord</u> i timerne
    c. Ge.   Früher   hat <u>niemand</u> versucht im Unterricht <u>ein Wort</u> zu verstehen

Consider now a set of examples where the NPI is **preceded but not c-commanded** by the licenser, because the negation is inside the PP in topic position:

(28) a. En. * [<u>Not</u> long ago]   I tried   to understand <u>a word</u> during the classes
    b. Da. * [For <u>ikke</u> ret lang tid siden] forsøgte jeg   at forstå <u>et ord</u> i timerne
    c. Ge. * [Vor <u>nicht</u> langer Zeit]   habe ich versucht im Unterricht <u>ein Wort</u> zu verstehen

If precedence was sufficient as a condition on NPI-licensing, (28) should have been grammatical.[4]

2.5. Licensing of NPI-verbs

Now I want to look at a special kind of NPIs where c-command might seem not to be required, NPI-verbs.

    The first NPI-verbs we shall examine are *need* in English (not the lexical verb *need*, but the auxiliary *need*, i.e. the *need* that takes an infinitive without *to*) and its corresponding verbs in Danish and German, *behøve/brauchen* (only when they embed an infinitive), see (29). When *need/behøve/brauchen* take a DP-object, they are not NPI-verbs, see (30).

    In none of (29)a,c,e do the NPI-verbs seem to be c-commanded by the negation. Nevertheless I think that these verbs need to be licensed by e.g. a negation, as shown by the ungrammaticality of (29)b,d,f. Instead, it must suffice for the licensing of NPI-verbs that **the base position** of the NPI-verb is c-commanded by a licenser (i.e. the NPI-verb must be c-commanded by a licenser **before** the verb undergoes movement to the left):

(29) En. a.   Maybe Torben <u>need</u> <u>not</u> read these books.
       b. * Maybe Torben <u>need</u>   read these books.

    Da. c.   Måske <u>behøver</u> Torben <u>ikke</u> læse de her bøger.
       d. * Måske <u>behøver</u> Torben   læse de her bøger.

    Ge. e.   Vielleicht <u>braucht</u> Torben diese Bücher <u>nicht</u> zu lesen.
       f. * Vielleicht <u>braucht</u> Torben diese Bücher   zu lesen.

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3   Although the c-command condition on NPI-licensing may in principle also be applied within one of the field analyses, as in (1)b,c, (2)b, or (3)b,c, it would give completely wrong predictions: E.g. the subject would be c-commanded by the negation, something shown in (24)a,d not to be the case, as negation does not license an NPI-subject. This means that the field analyses would have to have a different condition on NPI-licensing, and here an option would be to refer to precedence instead, but as shown in (28), this would not give the right predictions either.

4   To give a complete picture, let me point out a complicating factor. There is a contrast between (28) and (i) below, even though both contain a negation inside a topic: In (i), the NPI is (again) **both preceded and c-commanded** by the licenser, because here not what is negative is not just the negation but the entire topic - as can be shown e.g. by tag questions or by the English subject-auxiliary inversion in (i)a:

(i) a. En.   [<u>At no point in time</u>] did I try   to understand <u>a word</u> during the classes
    b. Da.   [<u>På intet tidspunkt</u>]   forsøgte jeg   at forstå <u>et ord</u> i timerne
    c. Ge.   [<u>Zu keiner Zeit</u>]   habe ich versucht im Unterricht <u>ein Wort</u> zu verstehen

(30) En. a.   Maybe Torben does <u>not</u> <u>need</u>   these books.
       b.   Maybe Torben   <u>needs</u> these books.

     Da. c.   Måske <u>behøver</u> Torben <u>ikke</u> de her bøger.
       d.   Måske <u>behøver</u> Torben   de her bøger.

     Ge. e.   Vielleicht <u>braucht</u> Torben diese Bücher <u>nicht</u>.
       f.   Vielleicht <u>braucht</u> Torben diese Bücher.

Constituent negation inside the object does not c-command the NPI-verb (here *stand*/*fordrage*/ *abkönnen*), not even when this verb is in its base position, (31)a,c,e, as opposed to (31)b,d,f, which do not contain any NPI-verb at all:

(31) En. a.   * Torben can   <u>stand</u> [<u>not</u> vodka but whisky].
       b.   Torben might drink [not vodka but whisky].

     Da. c.   * Torben kan   <u>fordrage</u> [<u>ikke</u> vodka men whisky].
       d.   Torben kunne drikke   [ikke vodka men whisky].

     Ge. e.   * Torben <u>kann</u>   [<u>nicht</u> Wodka sondern Whisky] ab.
       f.   Torben könnte [nicht Wodka sondern Whisky] trinken.

The NPI-verbs (or at least their base positions) must be c-commanded by a licenser, e.g. the sentential negation:

(32) En. a.   Torben ca<u>n't</u> <u>stand</u> vodka.
       b.   * Torben can   <u>stand</u> vodka.

     Da. c.   Torben kan <u>ikke</u> <u>fordrage</u> vodka.
       d.   * Torben kan   <u>fordrage</u> vodka..

     Ge. e.   Torben <u>kann</u> Wodka <u>nicht</u> ab.
       f.   * Torben <u>kann</u> Wodka   ab.

So even though NPI-verbs might seem to be counterexamples to the hypothesis that NPIs require c-command by e.g. a negation, it would seem that they still need a licenser, (29)b,d,f, (32)b,d,f, and that this licenser must c-command the base position of the NPI-verb.

2.6. NPIs and *because*-clauses

Finally I want to examine another case where c-command might seem to be problematic as a licensing condition for NPIs, namely the interaction between NPIs and *because*-clauses.

    Consider examples of the following type (which are also discussed e.g. in Linebarger (1987), in McCawley (1988: 565), and in Ladusaw (1996: 334):

(33) a. En.   Torben had not understood my talk   because I had used German examples.
      b. Da.   Torben havde ikke forstået mit foredrag   fordi jeg havde brugt tyske eksempler.
      c. Ge.   Torben hatte meinen Vortrag nicht verstanden,   weil ich deutsche Beispiele verwendet hatte.

In spite of what one might think at first glance, these examples are actually ambiguous. Each of them may describe either

(34)   (i)   the situation where the use of German examples had prevented Torben from understanding my talk – after all, he is a professor of English,

   or

   (ii)   the situation where Torben had understood my talk for a different reason than because of my use of German examples. In other words, the German examples were not a problem – after all, he was once a student of Gunnar Bech's – but what really made him understand the talk was that it was about syntax.

Consider now the following examples, which contain an NPI and which lack such an ambiguity:

(35) a. En.   Torben had <u>not</u> understood <u>a thing</u>   because I had used German examples.
   b. Da.   Torben havde <u>ikke</u> forstået <u>et klap</u>   fordi jeg havde brugt tyske eksempler.
   c. Ge.   Torben hatte <u>nicht</u> <u>die Bohne</u> verstanden,   weil ich deutsche Beispiele verwendet hatte.

(35) can only be used in the situation described by (34)i, not the one described by (34)ii. This can be shown more clearly if we expand the examples such that only the (34)ii interpretation is possible. Such an expansion is possible for (33), as shown in (36) below, but it is not possible for (35), cf. (37).

(36) a. En.   Torben had not understood my talk   because I had used German examples,
                                                                  but because the talk was about syntax.
   b. Da.   Torben havde ikke forstået mit foredrag   fordi jeg havde brugt tyske eksempler,
                                                                  men fordi foredraget handlede om syntaks.
   c. Ge.   Torben hatte meinen Vortrag nicht   weil ich deutsche Beispiele verwendet hatte,
               verstanden,   sondern weil der Vortrag über Syntax war.

(37) a. En. * Torben had <u>not</u> understood <u>a thing</u>   because I had used German examples,
                                                                  but because the talk was about syntax.
   b. Da. * Torben havde <u>ikke</u> forstået <u>et klap</u>   fordi jeg havde brugt tyske eksempler,
                                                                  men fordi foredraget handlede om syntaks.
   c. Ge. * Torben hatte <u>nicht</u> <u>die Bohne</u>   weil ich deutsche Beispiele verwendet hatte,
               verstanden,   sondern weil der Vortrag über Syntax war.

A different set of examples of the same effect are the following:

(38) a. En.   Torben had not read the book   because he was annoyed.
   b. Da.   Torben havde ikke læst bogen   fordi han var irriteret.
   c. Ge.   Torben hatte das Buch nicht gelesen,   weil er genervt war.

(39) a. En.   Torben had <u>not</u> lifted <u>a finger</u>   because he was annoyed.
   b. Da.   Torben havde <u>ikke</u> rørt <u>en finger</u>   fordi han var irriteret.
   c. Ge.   Torben hatte <u>keinen</u> <u>Finger</u> gerührt,   weil er genervt war.

Again, (38) is actually ambiguous and may describe both the situation in (40)i and the one in (40) ii. (39), on the other hand, only describes the one in (40)i and not the one in (40)ii.

(40)   (i)   the situation where being annoyed had prevented Torben from reading the book (he needs peace of mind for reading),

   or

   (ii)   the situation where Torben had read the book for a different reason than because he was annoyed. In other words, it wasn't being annoyed that made him read the book, it was being bored.

And again this can be shown more clearly if we expand the examples such that only the (34)ii interpretation is possible. Such an expansion is possible for (38), as shown in (41) below, but it is not possible for (39), cf. (42).

(41)	a.	En.	Torben had not read the book	because he was annoyed, but because he was bored.
	b.	Da.	Torben havde ikke læst bogen	fordi han var irriteret, men fordi han kedede sig.
	c.	Ge.	Torben hatte das Buch nicht gelesen, weil er genervt war,	sondern weil er gelangweilt war.

(42)	a.	En.	* Torben had <u>not</u> lifted <u>a finger</u>	because he was annoyed, but because he was bored.
	b.	Da.	* Torben havde <u>ikke</u> rørt <u>en finger</u>	fordi han var irriteret, men fordi han kedede sig.
	c.	Ge.	* Torben hatte <u>keinen Finger</u> gerührt,	weil er genervt war, sondern weil er gelangweilt war.

Presumably, the two interpretations (i.e. (34)i vs. (34)ii, and (40)i vs. (40)ii) differ crucially with respect to whether the *because*-clause is negated:

- In the **(i)**-interpretations, the *because*-clause is not negated (it gives a valid reason for why something did not happen). This is because it is outside the scope of negation, i.e. it is not c-commanded by *not* – hence it must be higher in the structure than negation (and therefore this is also the only interpretation available when the *because*-clause is fronted).

- In the **(ii)**-interpretations, the *because*-clause is part of what is negated (it gives an invalid reason for why something happened). This is because it is inside the scope of negation, i.e. it is c-commanded by *not* – hence it must be lower in the structure than negation.

This analysis is supported by the fact that only in the (ii)-interpretations may there be an NPI inside the *because*-clause itself. The examples in (43) where the NPI *the least bit* is inside the *because*-clause thus require the (ii)-interpretations, and therefore they are only really good when this is spelled out, as in (44) (and therefore they also do not allow fronting of the *because*-clause):

(43)	a.	En.	[?] Torben had not skipped my talk	because he was <u>the least bit</u> tired.
	b.	Da.	[?] Torben havde ikke pjækket fra mit foredrag	fordi han var <u>det mindste</u> træt.
	c.	Ge.	[?] Torben hatte meinen Vortrag nicht geschwänzt, weil er <u>im Geringsten</u> müde war.

(44)	a.	En.	Torben had not skipped my talk	because he was <u>the least bit</u> tired, but because he had heard it before.
	b.	Da.	Torben havde ikke pjækket fra mit foredrag	fordi han var <u>det mindste</u> træt, men derimod fordi han havde hørt det før.
	c.	Ge.	Torben hatte meinen Vortrag nicht geschwänzt,	weil er <u>im Geringsten</u> müde war, sondern weil er ihn schon gehört hatte.

But even if the (ii)-interpretation has the *because*-clause inside the scope of negation, this does not explain why the (ii)-interpretation is not available in (35) and (39), i.e. it does not explain the ungrammaticality of (37) and (42), which are the expanded version of (35) and (39). Under both interpretations, (i) and (ii), the NPI in (35) and (39) must be taken to be c-commanded by *not*.

In the extensive literature on this question, there are two kinds of approaches, but they agree that what is special about the (ii)-interpretation is that it is a case of focussing negation, with the focus on the *because*-clause.

One approach to why (ii)-interpretation is not available in (35) and (39) (and thus also to why (37) and (42) are ungrammatical) is syntactic in nature, and says that when the *because*-clause is itself c-commanded by negation, it disturbs the licensing of the NPI (e.g. *a thing* in (37)). As the *because*-clause is itself c-commanded by negation and c-commands the NPI, it intervenes in the licensing. For the exact details of such an account, I refer to Linebarger (1987), Guerzoni (2006: 372), and for defence of the idea that focus elements can be interveners, I refer to Kim (2002). A different example of an intervention effect is given in Vikner (1995: 22) and repeated here:

(45) Da. a. Hvad for nogen studerende har   du inviteret?
     b. Hvad   har   du inviteret   for nogen studerende?
         What (for any   students) have you invited   (for any   students)
                                         (= 'Which students have you invited?')

(46) Da. a. Hvad for nogen studerende har   du ikke inviteret?
     b. * Hvad   har   du ikke inviteret for nogen studerende?
         What (for any   students) have you not invited   (for any   students)
                                         (= 'Which students have you not invited?')

If there is no negation present, it is both possible to front the entire *what for students*, (45)a, and to front just *what*, (45)b, the latter perhaps being more colloquial, but nevertheless definitely possible. If negation is present, however, it is still possible to front the entire *what for students*, (46)a, but it is now not possible to front just *what*, (46)b. (46)b is an example of an intervention effect, as *ikke* is c-commanded by *what* and c-commands *for students*.

The other approach to why (ii)-interpretation is not available in (35) and (39) (and thus also to why (37) and (42) are ungrammatical) is semantic in nature. Focus creates a series of alternatives (see Rooth 1992 and many others), cf. e.g. the focussing negation reading of (47)a, where focus is on *this morning*, and where the alternatives all have the form (47)b:

(47) En. a. Peter did<u>n't</u> arrive in Aarhus **<u>this morning</u>**

     b. Peter arrived in Aarhus at some point in time X, X ≠ this morning

(The following is strongly simplified, for a much more detailed analysis see e.g. Meier 2001). It would seem that whereas normal negation licences any NPI that it c-commands, focussing negation **only** licenses an NPI which is **inside** the focus (i.e. inside the *because*-clause in (35) and (39)).

This is unexpected, given that a focussing negation c-commands much more than what is inside the focus. What is crucial here is that in the case of focussing negation, the alternatives are all positive, cf. that although (47)a is negative, the alternatives are all positive, (47)b.

The alternatives to the focus readings of (35) and (39) thus do not contain any negation, and therefore the NPI in these alternatives would not be licensed:

(48) En. a. * Torben had <u>not</u> understood <u>a thing</u> because I had used German examples,
              ... he   had   understood <u>a thing</u> because the talk was about syntax.

     Da. b. * Torben havde <u>ikke</u> forstået <u>et klap</u> fordi jeg havde brugt tyske eksempler,
              ... han havde   forstået <u>et klap</u> fordi foredraget handlede om syntaks.

     Ge. c. * Torben hatte <u>nicht</u> <u>die Bohne</u> verstanden, weil ich deutsche Beispiele verwendet hatte,
              ... er   hatte   <u>die Bohne</u> verstanden, weil der Vortrag über Syntax war.

(49) En. a. * Torben had <u>not</u> lifted <u>a finger</u> because he was annoyed,
    ... he   had   lifted <u>a finger</u> because he was bored.

Da. b. * Torben havde <u>ikke</u> rørt <u>en finger</u> fordi han var irriteret,
    ... han   havde   rørt <u>en finger</u> fordi han kedede sig.

Ge. c. * Torben hatte <u>keinen</u> <u>Finger</u> gerührt, weil er genervt war,
    ... er   hatte   <u>einen Finger</u> gerührt, weil er gelangweilt war.

If, on the other hand, the NPI is inside the focus, there is no problem, because what is inside the focus is **absent** from the alternatives, and then it does not matter that there is no negation in the alternatives.

(50) En. a. Torben had <u>not</u> skipped my talk because he was <u>the least bit</u> tired,
    ... he   had   skipped my talk because he had heard it before.

Da. b. Torben havde <u>ikke</u> pjækket fra mit foredrag fordi han var <u>det mindste</u> træt,
    ... han   havde   pjækket fra mit foredrag fordi han havde hørt det før.

Ge. c. Torben hatte <u>nicht</u> meinen Vortrag geschwänzt,   weil er <u>im Geringsten</u> müde war,
    ... er   hatte   meinen Vortrag geschwänzt,   weil er ihn schon gehört hatte.

Although I have not been able to present a definite analysis of *because*-clauses, I hope to have shown some of the properties that such an analysis must have, and in particular how any analysis of *because*-clauses (like any other analysis of anything to do with NPI) must make reference to c-command.

3.   Conclusion

The objective of this paper was mainly to illustrate a particular difference (concerning the availability of c-command) between two kinds of approaches to clause structure, namely **tree analyses** like the generative analysis that Torben Thrane and I both advocate and **field analyses** like the *sætningsskema* analysis of Danish of Diderichsen (1946) and many others (or like the *topologische Modell* analysis of German of Drach 1937 and many others).

Having said this, I hope that at least the first part of my paper also illustrated that these approaches have a number of properties in common. I continue to believe that syntacticians would be well advised to look further than the surface of the different formal and functional approaches. Despite the occasionally polemic tone, the various approaches actually have much in common, and they have a lot to learn from each other's insights.

All syntacticians, regardless of theoretical persuasion, are ultimately interested in explaining language data. Given the complex subject matter of the discipline, we need all the help we can get, and therefore none of us can afford to ignore the results reached within 'the opposite camp'.

The particular difference between the tree analyses and the field analyses that was explored in this paper concerned c-command, a relationship between different constituents, which as far as I can see can only be formulated in a tree analysis and not in a field analysis. The question must therefore be how necessary and useful a tool like c-command is, and here I tried to show that it is indeed extremely useful when it comes to accounting for negative polarity items in English, Danish and German, both the more straightforward aspects presented in 2.1-2.4 and the more tricky ones concerning NPI-verbs, section 2.5 and NPI-elements and *because*-clauses in section 2.6.

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