From Diderichsen to Generative Trees (and Back Again) - Bridging the Gap between Formal and Functional Syntactic Analysis

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1. Introduction

The aim of this paper is to discuss different approaches to linguistic theory and their relation to empirical issues in syntactic analysis. It is based on our work within a project on object positions carried out at the University of Aarhus 2005-2007. The purpose of the project was to combine and compare what is usually labelled formal and functional approaches to linguistics.

Our general experience is that the two approaches, in spite of a number of differences, have a high number of fundamental assumptions in common. It is therefore not only possible but also fruitful to approach the same problems and phenomena from the two perspectives.

2. Theoretical and empirical linguistics

Both formal and functional approaches completely agree with the dictum that

> *Theory without empirical research is empty, empirical research without theory is blind*
> (Bourdieu 1988:774–775, paraphrasing Kant 1929:93)

i.e. linguistic theory needs empirical support, and linguistic data need theoretical interpretation.

The two approaches also agree that **the optimal theoretical hypothesis** is the one that by means of the fewest auxiliary assumptions ("the lowest cost") yields the highest number of further testable predictions ("the highest returns"), cf. e.g. the "empirical principle" of Hjelmslev (1943:11).

The formal and the functional approaches only start to disagree when it comes to deciding whether the higher returns given by hypothesis A over other hypotheses B or C **justify** the higher costs (also e.g. in terms of abstractness) that hypothesis A might have, compared to its competitors.

3. Radicalism within the formal and the functional approaches

The distinction between the formal and the functional approaches actually covers many different aspects worth considering separately.

Both approaches are concerned with linguistic form, e.g. how a word is pronounced, what it means, or where it occurs in the sentence. **Formal linguistics** is primarily interested in the linguistic form itself, i.e. in the internal structures of language. **Functional linguistics** is primarily interested in the content and the communicative function that a linguistic expression has in the world outside language, i.e. in the connection between language and external factors.

There are, however, numerous intermediate positions, which differ e.g. with respect to how "radical" they are. **Radical formal linguists** assume content and communicative function to be of no interest whatsoever, whereas **radical functional linguists** take content and communicative function to be absolutely essential for the distinctions made in the actual analysis (cf. Newmeyer 1998:17, Vikner 2004).

Proponents of the non-radical versions of the two approaches are still able to interact and indeed learn from one another. This is witnessed e.g. by the increasing interest on the part of formal linguists in discourse phenomena (e.g. Rizzi 1997, Newmeyer 1998, Platzack 2001a,b).

In fact, one might interpret the situation as a state of **complementarity** rather than as a state of competition. The observations that lead to the recognition of the formal levels find their interpretation in the functional domains. The functional domains on their side can only be deemed relevant for the investigation if they find a formal expression, otherwise they must be considered irrelevant. In this sense the rivalry between the two approaches makes little sense.

The point may be illustrated with this figure:

Radical functionalism	Moderate functionalism	Moderate formalism	Radical Formalism

Another source of convergence is the need to investigate through systemic approaches. Classic formal tests like **commutation, substitution, conjunction, and deletion** cannot be claimed as the exclusive property of either the formal or the functional approach alone. While such discovery procedures may at first glance seem more in line with the formal approach, both approaches actually need them and both approaches also make use of them. It should be remembered that functional linguists need to identify formal distinctions in order to postulate the functional superstructure.

4. Clausal architecture in formal and functional approaches

A comparison between a typical functional analysis and a typical formal one:

As the **typical functional analysis** we have chosen the analysis most frequently employed by functional linguists in Scandinavia, namely the sentence model of Paul Diderichsen (1936, 1941, 1946, 1964). Even though this particular model may not be too well-known outside Scandinavia, it contains enough essential functional features to make it an interesting representative for functional linguistics.

As the **typical formal analysis** we have chosen an analysis very frequently employed by formal linguists, namely an analysis whose main features are common to the principles and parameters framework (Chomsky 1986) and the minimalist programme (Chomsky 1995).

4.1 Diderichsen's fields and slots

In Diderichsen's (1946) so-called topological approach, two levels are postulated in the analysis of the clause: **a field level** and **a slot level**. The slots may be defined in different ways, but in general they are tied to certain phrase concepts and their definitions (see Jørgensen, to appear). In Diderichsen's original approach, the slots were defined by the morphological material they contained. Thus one slot would contain the finite verb, another would contain a noun phrase in nominative etc. (see Diderichsen 1964:371). In certain cases, slots could encompass many different elements, e.g. the adverbial slots.

Slots may encompass constructions of different kinds, e.g. relative clauses may be contained in nominal slots. The slots are defined by the main verb carrying the valency and the constructions attaching directly to it, either through valency or through the adverbial modification. In general, slots are frames that contain a constituent produced by the analysis at the relevant level.

Within Diderichsen's line of thinking, constituents are motivated mainly by the method of isolation in the front position, i.e. something is a constituent if it can precede the finite verb in a Danish main clause (see e.g. (9c) vs. (9e) further below).

Diderichsen's original approach used the verbal slots as boundaries for the fields. A Danish main clause was seen as split up into three **fields**, (1a), Diderichsen (1946:162): one before the finite verb slot ("v"), one starting with the same finite verb slot, and one starting with the infinite verb slot ("V"). A somewhat different but similar analysis was given for an

embedded clause (1b), Diderichsen (1946:186). [1]

Main clause:

(1) a.

Foundation field	Nexus field (Central field)			Content field		
F	v	n	a	V	N	A
Saa	har	han	vist	glemt	Galocherne	her
Then	*has*	*he*	*probably*	*forgotten*	*the galoshes*	*here*

Embedded clause:

b.

Conjunctional field	Nexus field (Central field)			Content field		
k	n	a	v	V	N	A
... fordi	han	vist	har	glemt	Galocherne	her
... because	*he*	*probably*	*har*	*forgotten*	*the galoshes*	*here*

These two models have been very influential, forming the basis of the analyses in Hansen (1977:44, 72-74), Heltoft (1986a), Allan et al. (1995:491-498), Jørgensen (2000b:63-78), Togeby (2003:56, 72, 97-99) and Hansen & Heltoft (2003:172-173), among others.

Heltoft (1986a,b) and, following him, Jørgensen (1993, 2000c: 86-89) have suggested a different layout of the fields. A core field encompassing roughly everything that directly depends on the main verb (including the subject), and a frame field containing elements that fit the sentence into its textual and pragmatic context. To the right of the core field, one may add a field of localisation, which however is not present in all versions. One version of this model looks as follows, again first the main clause version, then the embedded clause version (adapted

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[1] Abbreviations and Danish terminology used in (1) (cf. Diderichsen 1946, 1964):

F	foundation (≈ topic, theme)	"fundament" (1946:190)
v, V	verbal	"verbal" (1946:169)
n, N	nominal	"nominal" (1946:169, 1964:369)
a, A	adverbial	"adverbial" (1946:179)
k	conjunction	"konjunktional" (1946:183)

The term *fundamentfelt* (approximately. 'foundation field') is in principle a rhetorical term, meant to signify a position in the Danish sentence that transmits the rhetorical clue of the sentence (≈ topic, theme). It is defined formally as the position in front of the main verb in main clauses. In the syntax of Danish, this position is the only position that is open to different types of syntactic phrases.

from Hansen & Heltoft 2003:172-173): [2]

(2) a.   Main clause:

Frame field		Core field						Localisa-tion field
F	R	Subject		Content field				
X	V_f	S	SA	V_i	DO	P	BA	TSA
måske	har	de	først	sendt	brevet	ud	(-)	i går
maybe	*have*	*they*	*first*	*sent*	*letter-the*	*out*		*yesterday*

b.   Embedded clause:

Frame field	Core field						Localisa-tion field
R	Subject		Content field				
K	S	SA	V_i	DO	P	BA	TSA
hvis	de	først	har sendt	det	ud	(-)	i går
if	*they*	*first*	*have sent*	*it*	*out*		*yesterday*

---

[2]   Abbreviations and Danish terminology used in (2), cf. Hansen & Heltoft (2003:156-173)

	frame field	"rammefelt"
	core field	"kernefelt"
	localisation field	"lokaliseringsfelt"
F	foundation field (see below)	"fundamentfelt"
R	reality field	"realitetsfelt"
	subject	"subjekt"
	content field	"indholdsfelt"
X	[anything]	
V_f	finite verb	"finit verbum"
S	subject	"subjekt"
SA	sentential adverbial	"sætningsadverbial"
V_i	non-finite verb (V_i contains the finite verb in (2b) , cf. p. 11 below)	"infinit verbum"
DO	direct object	"direkte objekt"
P	(non-temporal) predicate	"prædikativer"
BA	bound adverbials	"bundne adverbialer"
TSA	time and place adverbials	"tids- og stedsadverbialer"
K	conjunction	"konjunktion"

The terms here relate to a conception of the sentence where the area around the subordinating conjunction (and in the main clause, around the finite verb) is seen as a representative of the **semantic conditions framing the sentence in the context** and the rest of the sentence is seen as a core around which the **local semantic content** is structured. This conception is comparable to the semiotic approach of Greimas, splitting meaning into the *énonciation*, the local pragmatic situational meaning, and *énoncé*, the non-situational meaning which may be seen as transferable to other situations (cf. Greimas 1966, Greimas & Courtés 1979, and Togeby 2003:10).

Regardless of how they are defined exactly, the fields do **not represent syntactic constituents** in a strict application of Diderichsen's model, as they link up with semantic and functional essentials rather than with distributional facts. Neither of the two field structures (as opposed to slot structures) reflects strict distributional facts about a Danish sentence, in the sense that the nexus field cannot be shown to be a constituent by means of the classic tests like commutation, substitution, conjunction, and deletion mentioned in section 3 above. Notice that it is nevertheless possible to relate the Diderichsen distribution to formal generative approaches relatively closely, cf. section 5.1 below.

Even though the division into fields is thus to a considerable extent based on semantic and functional considerations, sometimes the distributional facts have to take priority. The Diderichsen model puts the subject in its proper middle field slot, which is of course where it belongs as far as the sequence of the words in the clause is concerned, but this does not agree too well with the semantic and functional considerations. Following semantic and functional considerations, the subject would have to have a position within the content field (as it is closely related to the main verb, just like the object is). However, as no actual subjects occur in such a position, the Diderichsen model has to live with the fact that the subject **occurs within one field** (the nexus field) although it at least in some sense **ought to** be part of **a different field** (the content field).

Diderichsen (1941:21, 35-36) links this to a diachronic development of subjecthood from what was originally that of *nominativus verbi* (the nominative of the verb), i.e. closely attached to the verbal stem and hence connected with the content side, towards the present state, where the subject is part of the actualisation of the meaning and therefore is part of the nexus. Even if the idea of such a diachronic development may not be tenable, the double nature of subjecthood is described well in this way.[3]

4.2 Generative tree structures

In a generative analysis, syntactic constituents all have the same basic structure, namely the "X-bar structure" in (3), where the sequence of the head and the complement may vary depending on the language:

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[3] Notice the parallel with the "VP-internal subject hypothesis" in recent generative theory where the subject is taken to start out from the specifier position of VP and move from there into the specifier position of IP (cf. Haegeman 2006:247-262 and references there). For reasons of exposition, this movement has been left out of (8) and (10) below.

(3)

```
                        XP
                    ┌────┴────┐
                   YP         X'
                specifier ┌───┴───┐
                         X°       ZP
                        head   complement
```
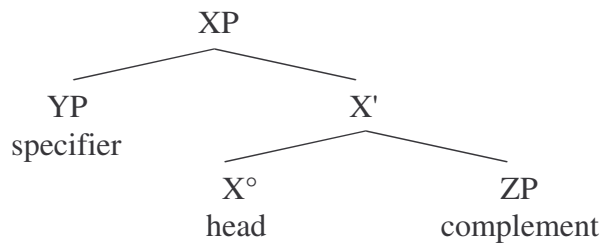
where

(4) XP = phrase / the maximal projection of X
   X' = X-bar   / the intermediate projection of X
     X° = head   / the minimal projection of X (= a word or maybe an even smaller unit)

A phrase (a maximal projection) may thus occur inside another phrase either as a specifier or as a complement. A head is always the head of its own maximal projection, and all maximal projections have a head (are endocentric). A maximal projection may furthermore also be adjoined to another maximal projection (where the sequence of the adjoined constituent and the adjoined to constituent may vary):

(5)

```
                    XP
                ┌────┴────┐
               WP         XP
         adjoined position
```
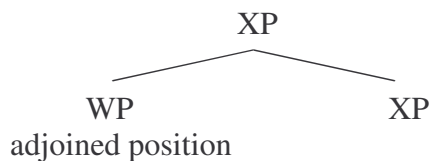
X (and also Y, Z, and W) in (3)-(5) above may stand for one of the following categories:

(6)

lexical categories (word classes)		"functional" categories	
N (noun)		C ("complementiser"	
V (verb)			= subordinating conjunction)
P (preposition)		I (inflection)	
Adj (adjective)		D (determiner)	
Adv (adverbial)	etc.		etc.

In a simplified generative analysis, the structure of a sentence (irrespective of whether it is a main or an embedded clause) is as follows:

(7) A clause is a CP,
     the complement of its head (= C°) is an IP, and
     the complement of the IP's head (= I°) is a VP.

For a sentence with no auxiliary verb and with a (mono-)transitive main verb the structure looks as follows for both a main and an embedded clause:

(8) a.
```
                          CP
                  ┌────────┴────────┐
                AdvP               C'
                 │          ┌───────┴───────┐
                 │          C°              IP
                 │          │         ┌──────┴──────┐
                 │          │         DP            I'
                 │          │         │        ┌────┴────┐
                 │          │         │        I°       VP
                 │          │         │             ┌────┴────┐
                 │          │         │             DP       V'
                 │          │         │                  ┌────┴────┐
                 │          │         │                  V°       DP
                 │          │         │                  │         │
```

b.   Måske   lægger   hønen   æg
      Maybe   *lays*   *the hen*   *eggs*
                                                          │   │
c.   ...   hvis   hønen   lægger   æg
      ...   *if*   *the hen*   *lays*   *eggs*
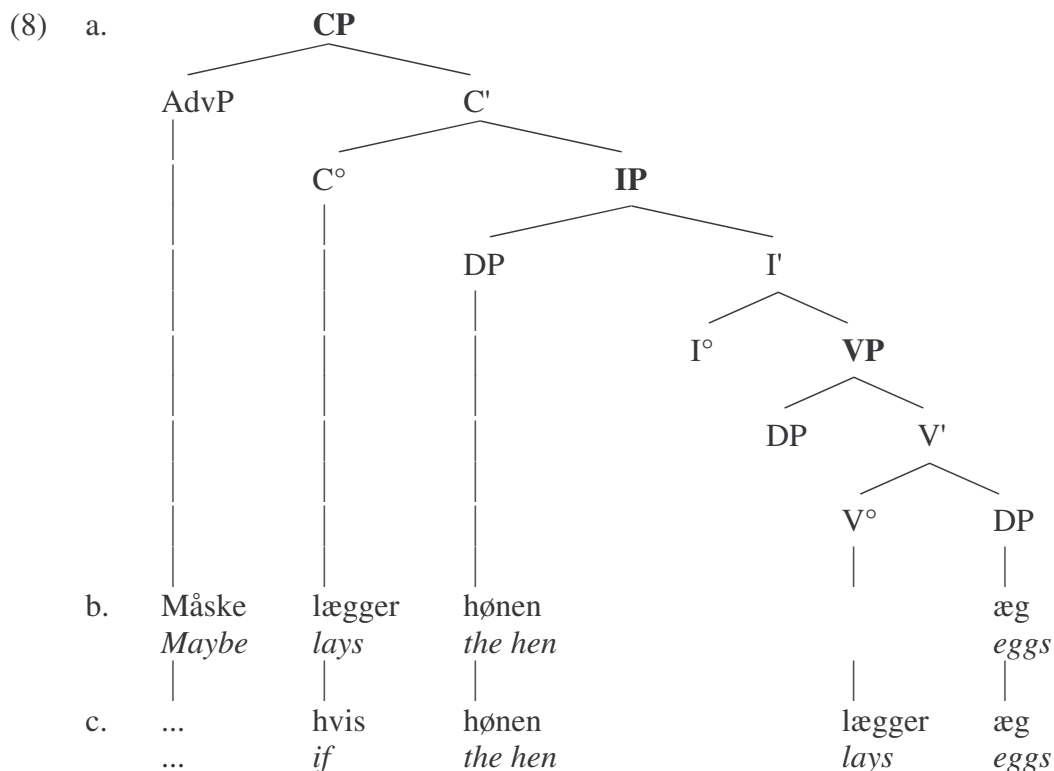
(where in (8b) the finite verb *lægger* has moved from V° to C°, cf. section 6.2 below)

Also in the generative analysis, there are **tests for constituency**, e.g. substitution tests or movement tests (the latter being a version of the commutation test). The underlying idea is that if two or more words (e.g. *the blue book*) may undergo substitution, (9b), or movement, (9c), together, then they form a constituent, whereas if two or more words in questions (*read the blue*) cannot be substituted by anything, (9d), or cannot be moved, (9e), then one possible reason may be that they do not form a constituent:

(9) a.   Har   hun   læst   den   blå   bog   ?
                     Has   she   read   this   blue   book ?

     b.   Har   hun   læst   den   ?
                     Has   she   read   it   ?

     c.   Den blå bog   har   hun   læst   .
          The blue book has   she   read

     d.   *   Har   hun   xxxxx   bog   ?
          Has   she   xxxxx   book ?

     e.   *Læst den blå   har   hun   bog .
   Read t*he blue* *has   she*   *book*

(The asterisks in front of (9d,e) signal that these two examples are not well-formed. *xxxxx* in (9d) signals that no pronoun exists that can substitute for the string *læst den blå* when *bog* is present in the clause but not included in the substitution.)

5. Points of convergence in the formal and functional approaches
5.1 Topological slots and what they are in the tree

It is interesting to observe that in spite of the many differences between the two approaches, there are also many points of convergence.

(10) a.
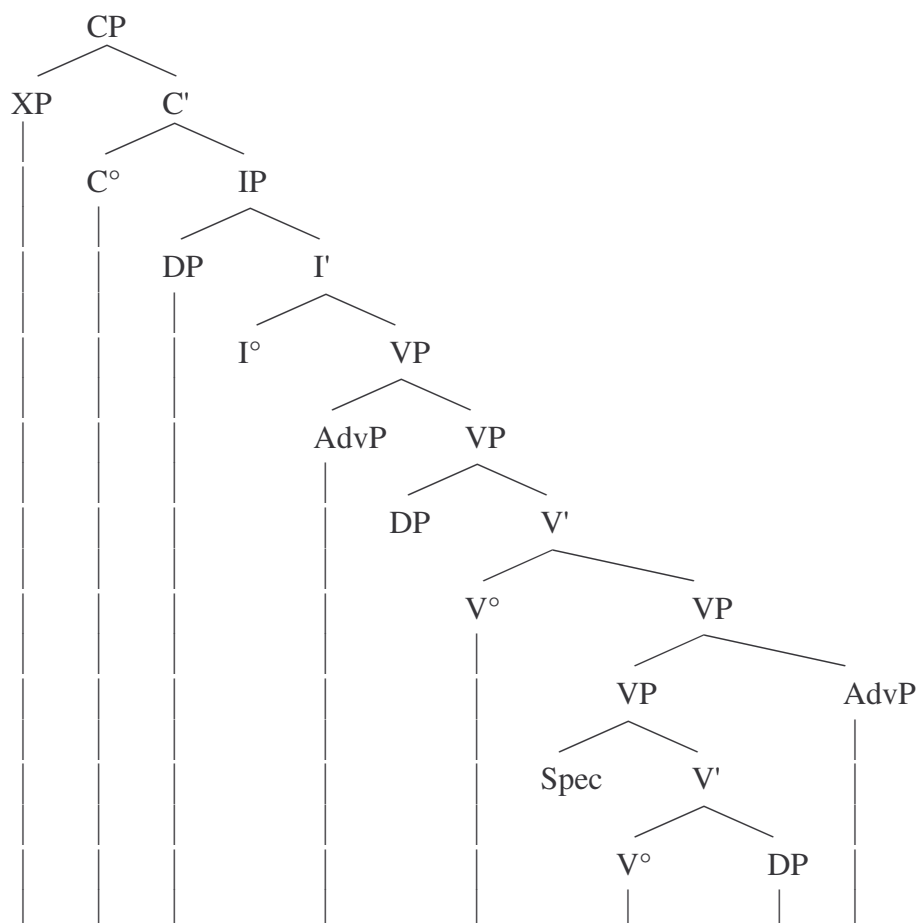
b.

F	Nexus field				Content field		
F	**v**	**n**	**a**		**V**	**N**	**A**
Nu	har	han	igen		poleret	bilen	med ståluld
Now	*has*	*he*	*again*		*polished*	*car-the*	*with steel wool*

c.

Conj. f.	Nexus field				Content field		
	k	**n**	**a**	**v**	**V**	**N**	**A**
	om	han	igen	har	poleret	bilen	med ståluld
	if	*he*	*again*	*has*	*polished*	*car-the*	*with steel wool*

One such point (even if the convergence is only partial) has to do with the **Diderichsen slots** and what they correspond to in the generative tree.

When it is added to the basic generative structure, (8), that adverbials (and other adjuncts) may be adjoined both on the left side and on the right side of a VP, the result is the generative structure in (10a) above.

This tree structure can be directly compared to the simplified Diderichsen models of constituent order in modern Danish as illustrated in (10b) for main clauses and in (10c) for embedded clauses, cf. (1) and (2) above (and references there).

It is perhaps indicative of this convergence that the first person to suggest the correspondence shown in (10b,c) between Diderichsen's analysis of the Danish main clause and Diderichsen's analysis of the Danish embedded clause was a generative syntactician, Christer Platzack (1985:71, fn 5), and that his suggestion was in turn taken up by the functional syntactician Lars Heltoft (1986a:108), cf. also Hansen & Heltoft (2003), as shown in (2) above.

The convergence consists in the observation that the **slots** in the Diderichsen analysis have **directly corresponding constituents** in the generative tree structure. The following list shows where one approach should be able to understand and build on insights gained in the other approach:

(11)   **Diderichsen (1946), cf. (1a,b)**   **Tree structures, cf. (8) & (10)**

    a.   F (foundation field)   = CP-spec

    b.   v (finite verb   = k (subordinating   = C°
              position in   conjunction
              in main clauses)   position in
                                       embedded clauses)

    c.   n (subject position)   = IP-spec

    d.   a (medial adverbial position)   = position left-adjoined to VP

    e.   v (finite verb position in   = V° (the highest V° in the
           embedded clauses)   embedded clause)

    f.   V (non-finite verb position)   = V°
          (NB: only one V per clause)   (NB: only one verb per V°)

    g.   N (object position)   = DP-position which is the
                                 complement of V°

    h.   A (final adverbial position)   = position right-adjoined to VP

Excursus:

One difference between the approaches is that if there are two or more non-finite verbs in a clause, the Diderichsen analysis takes them to make up one constituent, namely V, (ia), whereas in the tree structure this is not the case, (ib):

(i)   a.   ... at han ikke [_V kan]   [_V have mødt]   [_N den nye minister]   personligt.

        b.   ... at han ikke [_{V°} kan] [_{V°} have] [_{V°} mødt] [_{DP} den nye minister]   personligt.

            ... that he not can   *have met*   *the new minister*   *personally*

The two approaches agree that *den* and *nye* and *minister* (i.e. the direct object) form a constituent, as supported by the observation that they can occur together in other positions in the clause:

(ii)   [Den nye minister] kan han ikke have mødt personligt.

          The new minister can he not have met personally

Have and *mødt* (i.e. the two non-finite verbs), however, do not occur together in other positions in the clause, and so whether they make up a constituent or not is an open question.

     The Diderichsen analysis takes them to make up a constituent on their own, (ia) because they occur to the right of one established constituent (the finite verb) and to the left of another established constituent (the object).

     In the tree structure analysis, however, (ib), it is seen as crucial that there is a constituent that consists of only one of the non-finite verbs (together with the object and the adverbial):

(iii)   [Mødt den nye minister personligt] kan han ikke have,

              men han kan måske godt have talt i telefon med hende.

      Met the new minster personally he cannot have

           but he can perhaps well have talked in telephone with her

The point here is that if the two non-finite verbs together made up a constituent, then other constituents (e.g. the initial constituent in square brackets in (iii)) should contain **either** all of this constituent **or** no part of it (i.e. it should contain **either** both non-finite verbs **or** none of them). Seeing as this is not the case, the underlined constituent in (iii) contains one but not the other non-finite verb, the conclusion in the generative analysis has to be that the two non-finite verbs do not make up a constituent (as noted in e.g. Vikner 1999a:87 and Bjerre 2007) .

Discussing which model makes **most sense** from a scientific point of view is **not necessarily particularly constructive**. The generative model might very well fall victim to Occam's razor if the only task for syntactic theory should be to account for the syntax of Danish, as it assumes many more positions than are needed to account for the actual items of

Danish syntax. In this sense a sentence model of the Diderichsen type may be sufficient to account for Danish syntax.

As has been demonstrated (Askedal 1986, Bleken 1971, Bruaas 1970, Jørgensen 2000c, Jörgensen & Loman 1970, Lindberg 1973, Platzack 1985, Thorell 1973, etc.), this type of model is easily adapted to the other Mainland Scandinavian languages. There is furthermore a comparable topological tradition in German and Dutch linguistics (cf. e.g. Wöllstein-Leisten et al. 1997:53-75, Shannon 2000:146, and references there), but it would seem that topological approaches are particularly likely to be suggested for languages that are V2, cf. also that when topological approaches have been suggested for e.g. English or French, they have mainly been suggested by linguists who want to compare them to a V2-language, e.g. Diderichsen (1953), Hartvigson (1969), Herslund (2006).

Linear slot models (i.e. topological models) cannot make any larger contributions to direct comparison with e.g. Slavic languages with a relatively free phrase ordering, as emphasized in Askedal (1986:33-34). Only if the ordering rules underlying the model are taken to be reflections of e.g. case and information structure, can a sentence model of the Diderichsen type form the basis of comparison with more distant languages. This is a point where e.g. a generative model is more likely to be successful, given that the structures suggested for the analysis have a generality that makes it possible for them to encompass languages of a widely differing nature.

Take as an example the I°-position, which is one of the positions in the generative tree (10a) that are always empty in Danish, and which would therefore seem to be **superfluous**. However, in French, in Icelandic and in older stages of Danish, finite verbs occur in I°, and this position in the structure can therefore be a starting point for **saying something principled** about differences between languages (as is done e.g. in Vikner 1997, 1999b, 2005a). When it comes to the topological models, different languages need different (pairs of) models in the Diderichsen view (one pair for Danish/Swedish/Norwegian as in (10b,c), another pair for old Danish/ Icelandic, cf. Diderichsen 1941:89, and a completely different model for e.g. German, cf. e.g. Wöllstein-Leisten et al. 1997:53-75, etc.), **without** the analysis giving any principled reason why Danish does not follow the model for German or why German does not follow the Danish one. This could be seen as **the price paid** by the Diderichsen model(s) for not containing any positions which are never filled.
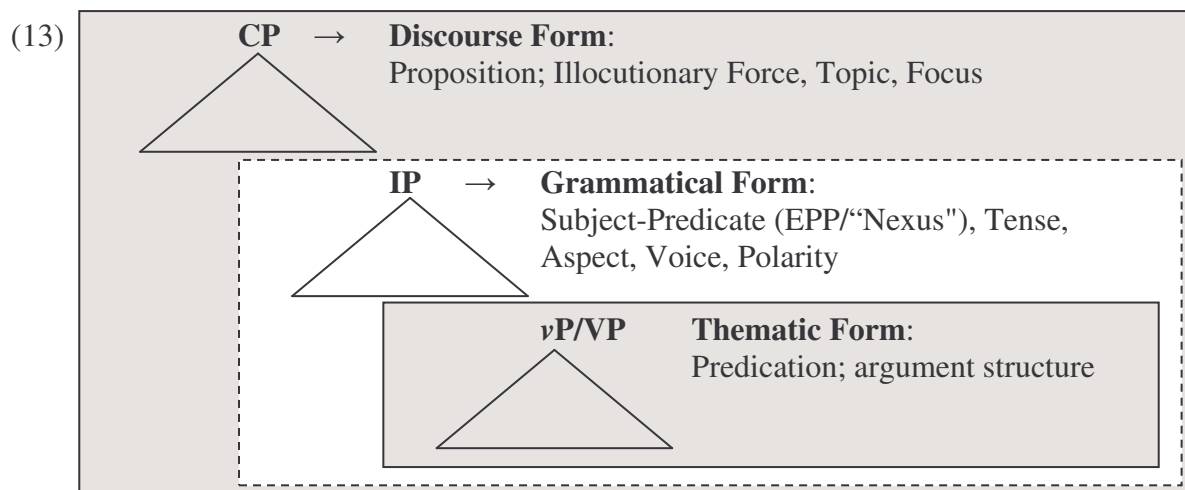
5.2 Topological fields and and what they are in the tree

Another point of convergence concerns the **Diderichsen fields** and what they correspond to in the generative tree.

The main parts of the generative structure, i.e. CP, IP and VP, can be seen as convergent with commonly accepted domains in functional linguistics: the layered structure of e.g. Harder (2005:101-110) is found not only in "classic" Dutch functional grammar (Dik 1997:67, here cited from Christensen 2005:51) :

(12)

Level 4: clause (speech act)
σ4: "briefly"
π4: illocutionary force (declarative, interrogative, imperative)

> **Level 3: proposition (possible fact)**
> σ3: "in my opinion"
> π3: subjective modality (evaluation, attitude)
>
> > **Level 2: extended predication (state of affairs)**
> > σ2: time, location, space
> > π2: tense, objective modality (time, space, cognition(?))
> >
> > > **Level 1: core predication (property or relation)**
> > > σ1: manner, speed, instrument,
> > >   direction, beneficiary
> > > π1: (im)perfective aspect,
> > >   (non-)progressive aspect
> > > (Subj, Obj)
> > >
> > > > **Level 0: nuclear predication**
> > > > Predicate and terms (arguments)

but also in the more recent versions of generative linguistics, cf. the following illustration adapted from Christensen (2005:30), which was in turn based on Platzack (2001a,b):

(13)

CP → **Discourse Form**:
Proposition; Illocutionary Force, Topic, Focus

IP → **Grammatical Form**:
Subject-Predicate (EPP/"Nexus"), Tense, Aspect, Voice, Polarity

*v*P/VP   **Thematic Form**:
Predication; argument structure

At first sight, this convergence between functional grammar and generative syntax may seem **not to include the Diderichsen model**: Where each of the levels in both (12) and (13) contains the next lower level, the Diderichsen fields are **discrete entities**, which do not contain each other. This difference may be less crucial than one might expect, however, for two reasons.

One reason: Some of Diderichsen's followers take some fields to be part of other fields, e.g. in Hansen & Heltoft (2003:172), the content field is part of the core field, as shown in (2) above (similarly in Togeby 2003:268 and Blom 2006:43, and actually also in Diderichsen 1946:186, above the tables).

The **second** and more important **reason**: Though Diderichsen's fields are not part of each

other, the insights are basically the same in all three frameworks: The generative view of what happens at the IP-level (which comprises the VP, cf. (13)) or Dik's (1997:67) view of what happens at his level 2 (which comprises level 1, cf. (12)) are both very much parallel to Diderichsen's view of what happens in the nexus field, even if the content field is not part of the nexus field, cf. (1):

(14)

Foundation field	Orientation towards the context of the sentence Discourse-relevant elements
Nexus field	Interface between communication and content: negativity, polarity, aspect
Content field	Organisation of content: actants, circumstantials

(based on Diderichsen 1941:35; Togeby 2003:50-51; Heltoft 2005:115-117)

Summing up so far, in sections 4.1. and 4.2, we presented one particular functional and one particular formal approach, and in sections 5.1 and 5.2, we tried to show that there are many interesting convergences between the approaches.

6. Movement

Movement is an important device in many (but not all) formal approaches, but seems in general to be thought of as unnecessary in most functional approaches. However, whether an approach assumes movement or not may not be so crucial. This is so because insights gained in an analysis assuming movement may often be useful also in analyses which do not assume movement (and vice versa). Many cases of "movement of an element" have a corresponding phenomena or descriptive device in other approaches, e.g. possible alternative positions.

6.1 The position of unstressed object pronouns

(Functional approaches: *letledsreglen*, 'the rule of light objects', formal approaches: *object shift*).

The basic observation has two parts. One is that **a non-pronominal object always follows a medial adverbial** (i.e. an adverbial in a or left-adjoined to VP), irrespective of whether the adverbial and the object are separated by a verb (15a,b) or not (15c):

(15) a.

Nu	har	han	faktisk	poleret	bilen	med ståluld
Now	*has*	*he*	*actually*	*polished*	*car-the*	*with steel wool*

b.

...	fordi	han	faktisk	polerer	bilen	med ståluld
...	*because*	*he*	*actually*	*polishes*	*car-the*	*with steel wool*

c.

Nu	polerer	han	faktisk		bilen	med ståluld
Now	*polishes*	*he*	*actually*		*car-the*	*with steel wool*

The second part of the observation is that an unstressed pronominal object only follows a medial adverbial **if** the adverbial and the object are **separated by a verb**, (16a,b), or by an object that is stressed. Otherwise the unstressed pronominal object precedes the medial adverbial (16c). In fact, unlike the non-pronominal object, the unstressed pronominal object cannot follow the adverbial, cf. the difference between (15c) and (16d), at least not in "standard" Danish (cf. Pedersen 1993 for dialectal differences in Danish and cf. Vikner 2005b and references there for the other Scandinavian languages):

(16)	a.	Nu	har	han		faktisk	poleret	den	med ståluld
		Now	*has*	*he*		*actually*	*polished*	*it*	*with steel wool*
	b.	...	fordi	han		faktisk	polerer	den	med ståluld
		...	*because*	*he*		*actually*	*polishes*	*it*	*with steel wool*
	c.	Nu	polerer	han	den	faktisk			med ståluld
		Now	*polishes*	*he*	*it*	*actually*			*with steel wool*
	d.	*Nu	polerer	han		faktisk		den	med ståluld
		Now polishes		*he*		*actually*		*it*	*with steel wool*

In formal approaches (starting with Holmberg 1986, see Vikner 2005b and references there), (16c) is an example of **movement** (object shift) of an unstressed pronominal object from its base position (as seen in (15a,b,c) and (16a,b)) to a different position to the left of the medial adverbial.

As for the functional approaches, Erik Hansen (1970:121 = 2001:72) introduced a special slot in the sentence model to account for these pronouns, saying simply that if the V position remains empty, the unstressed object pronoun is placed in this special position to the left of the adverbial, but if the V position is filled, the unstressed object pronoun is placed in the normal object position. What happens is thus that the object is **placed in one position or the other**, rather than the object moving from one position to the other.

Another possible analysis of these data is that the unstressed object pronoun **cliticises** to another element, as suggested in the functional approach by Jørgensen (1991, 2000a,c) and in the formal approach by e.g. Josefsson (1992). The differences between cliticisation and non-cliticisation hypotheses (with their consequences for what qualifies as a host for the clitic) are thus more substantial than the differences between the formal and the functional approaches.

For further discussion of object shift, see e.g. Vikner (2005b), Engels & Vikner (2006), and Bjerre (2007) (and references in these works).

6.2 The position of the finite verb in main and embedded clauses

In Danish embedded clauses, the finite verb follows the medial adverbial and the subject, and immediately precedes the object, (17a), whereas in main clauses, the finite verb always occurs in the second position, preceding the medial adverbial and potentially also the subject, (17b).

(17) a. ...   fordi   han   faktisk   <u>polerer</u>   bilen   med ståluld
         ...   *because* *he* *actually* *polishes*   *car-the* *with steel wool*

b. Nu   <u>polerer</u>   han   faktisk   bilen   med ståluld
    Now *polishes*   *he* *actually*   *car-the* *with steel wool*

The property that the finite verb always occurs in the second position in the main clause (with the exception of main clause *yes/no*-questions and certain conditional clauses, where the finite verb is the first element) is what is referred to as "verb second" or **V2**, and it is a property that Danish has in common with all other Germanic languages, with only one exception: English.

In formal approaches (starting with den Besten 1977, see Vikner 1995, chapter 3, and references there), (17b) is an example of **verb movement** from V° (via I°) into C°. In other words, the verb starts out in V° in both (17a,b). In (17a) the finite verb stays in V°, whereas in (17b) it has moved (via I°) into C°.

As for the functional approaches, some, e.g. Jørgensen (2000b:69), also talk of movement ("det finitte verbal... er blevet rykket frem", 'the finite verb has been moved up'), but in most of them, again there is no movement from one position to another, but instead there is a slot, "v", which has **one position** in embedded clauses, F-n-a-**v**-V-N-A, cf. (10c), and **another position** in main clauses, k-**v**-n-a-V-N-A, cf. (10b).

7. Conclusion

The conclusion is that syntacticians would be well advised to **look further** than the surface of the different formal and functional approaches. In spite of the occasionally polemic tone, the various approaches actually have much in common, which also means that they may learn a lot from each other's insights.

As one example, a functional syntactician should **not dismiss** too quickly formal analyses that appeal to the notion of **movement**. In actual fact, movement is just a way of representing the intuition that elements may or must occur outside of their canonical position, while it also captures certain constraints on the relationship between the actual position (Diderichsen's "topology") and the base position (Diderichsen's "syntax") of a constituent.

Conversely, a formal syntactician should **not dismiss** too quickly functional analyses that appeal to the notion of **fields**. These may actually be much less incompatible with the formal notion of constituents, as represented by nodes in the tree, than might appear at first glance.

All syntacticians, regardless of theoretical persuasion, are ultimately interested 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'.

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