

Introduction (part II): Trees and fields extended – Danish and German clauses and nominals

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1 Clauses (in German)

1.1 Topological approach

Diderichsen's field analyses of main clauses and embedded clauses repeated in (1) and (2) are made for Danish.

(1)

Fundamentfelt (Foundation field)	Nexusfelt (Central field)			Inholdsfelt (Content field)		
F	v	n	a	V	N	A
Derfor <i>therefore</i>	vil <i>will</i>	Per <i>Per</i>	måske <i>maybe</i>	kunne give <i>can give</i>	Marie bogen <i>Marie book.the</i>	i morgen <i>tomorrow</i>

see Diderichsen (1946:162)

(2)

Konjunktionsfelt (Conjunctive field)	Nexusfelt (Nexus field)			Inholdsfelt (Content field)		
k	n	a	v	V	N	A
fordi <i>because</i>	Per <i>Per</i>	måske <i>maybe</i>	vil <i>will</i>	kunne give <i>can give</i>	Marie bogen <i>Marie book.the</i>	i morgen <i>tomorrow</i>

cf. Diderichsen (1946:186)

Topological analyses of German clauses have been proposed by e.g. Erdmann (1886), Drach (1937), Engel (1970, 1977), Höhle (1986), Grewendorf (1988), Wöllstein-Leisten et al. (1997), Zifonun et al. (1997), Eisenberg (1999) and Eisenberg et al. (2009).

(3)

	Vorfeld (initial field)	Linke Satz- klammer (left clause bracket)	Mittelfeld (middle field)	Rechte Satz- klammer (right clause bracket)	Nachfeld (final field)
a.	Daher <i>therefore</i>	wird <i>will</i>	Peter Marie vielleicht morgen das Buch <i>Peter Marie maybe tomorrow the book</i>	geben können <i>give can</i>	falls er es nicht vergisst <i>if he it not forgets</i>
b.		weil <i>because</i>	Peter Marie vielleicht morgen das Buch <i>Peter Marie maybe tomorrow the book</i>	geben können wird <i>give can will</i>	falls er es nicht vergisst <i>if he it not forgets</i>

The German topological analysis differs from Diderichsen's field analysis in that it only has one level, whose parts Ramers (2006) differentiates into slots and fields. The left and right clause brackets (called *Finitplatz/C* 'finite position/C' and *Verbalkomplex* 'verbal complex' in Ramers 2006), are slots, which may host a simple or complex element out of a limited number of categories. In contrast to the slots, fields may be occupied by one or more simple or complex elements without any categorial restriction: The initial field may only contain one constituent of (almost) any kind, the middle field contains arguments and adverbials, and the final field is mostly reserved for heavy constituents (e.g. embedded clauses) and afterthoughts. Thus, while fields and slots stand in a hierarchical relationship in Diderichsen's analysis of Danish, fields and slots stand next to each other on the same level in the German topological model. (As the differentiation into fields and slots is different between the Danish and the German model, I will use "box" as a cover term for both fields and slots.)

Characteristic for the German clause model are the two clause brackets which host the verbal elements. Like Danish, German displays a main clause/embedded clause asymmetry. The finite verb occurs in the left clause bracket (=V2 position), unless this position is filled by a complementizer; in this case the finite verb is placed in the right clause bracket, where also non-finite verb forms (as well as certain non-verbal elements) occur.¹ Note that in

¹ Ramers (2006) claims that the topological approach is superior to the generative approach in accounting for the main clause/embedded clause asymmetry. Note that the finite verb does not only occur in right-peripheral position if there is an overt complementizer but also e.g. in embedded questions and relative clauses. In order to account for this in terms of differences in the availability of the left clause bracket for the finite verb, he assumes that embedded *wh*-phrases (as well as relative phrases) occur in the left clause bracket. However, *wh*-phrases clearly occur in the initial field in main questions; see (i). Thus, in Ramers' analysis not only the finite verb occurs in different slots in main clauses and embedded clauses (left clause bracket vs. right clause bracket) but also the *wh*-phrase is placed in different boxes (the initial field vs. the left clause bracket). This seems even more stipulative in view of the fact that the left clause bracket – which he considers to be a slot that may only contain elements of a limited number of categories – would have to be able to contain elements of different complexity, heads such as the finite verb and complementizer in (3) above and phrases such as DP and PP in (i) below.

contrast to Diderichsen's analysis of Danish, both main clauses and embedded clauses can be captured in the same model here.

German differs from Danish in the order of verb and object, VO in Danish vs. OV in German. In the topological approach, such order differences are captured by differences in the structure of the models: The box that contains the object (i.e. "N" and middle field, respectively) is placed on opposite sites of the verbal slot ("V" and right clause bracket, respectively). Likewise, Danish and German adverbials such as *morgen/i morgen* 'tomorrow' contrast in their positioning relative to a non-finite verb: They occur to the right of the verb in Danish (i.e. they occur in "A", which follows "V") but to the left of the verb in German (i.e. they occur in the middle field, which precedes the right clause bracket).

Summing up, different topological models have been suggested for the different languages. The language-specific models are not connected to each other and consequently cross-linguistic similarities and differences cannot be accounted for in a principled way. Note that Diderichsen (1966) suggests topological models for German main clauses and embedded clauses that look very similar to the Danish ones, except for the position of the verbal slots, "v" and "V"; compare the simplified versions in (4) and (5) with Diderichsen's models for Danish in (1) and (2) above.

(4)

Anfangsf. (initial f.)	Aktualfeld (Central field)			Inhaltsfeld (Content field)		
F	v	n	a	N	A	V
Deswegen <i>therefore</i>	wird <i>will</i>	Peter <i>Peter</i>	vielleicht <i>maybe</i>	Marie das Buch <i>Marie book.the</i>	morgen <i>tomorrow</i>	geben können <i>give can</i>

(5)

Anfangsf. (initial f.)	Aktualfeld (Central field)		Inhaltsfeld (Content field)			
k	n	a	N	A	V	v
weil <i>because</i>	Peter <i>Peter</i>	vielleicht <i>maybe</i>	Marie das Buch <i>Marie book.the</i>	morgen <i>tomorrow</i>	geben können <i>give can</i>	wird <i>will</i>

However, it is not possible to account for the word order variation within the German middle field in a model that considers the ordering of the slots "n/N" and "a/A" to be fixed; see e.g. the various orders in (6).

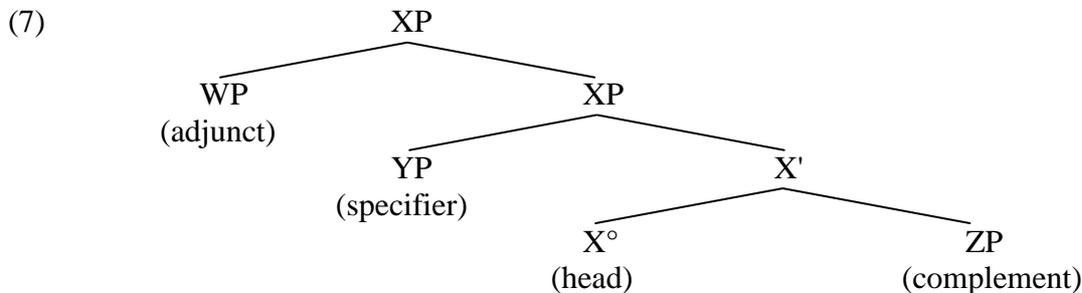
(i)

	VF	LSK	MF	RSK	NF
a.	Welches Kleid <i>which dress</i>	hat <i>has</i>	sie sich <i>she herself</i>	gekauft? <i>bought</i>	
b.		welches Kleid	sie sich	gekauft hat	
c.		in deren Haus <i>in whose house</i>	er sich <i>he himself</i>	wohl fühlte <i>good felt</i>	

- (6) a. Deswegen wird **vielleicht** morgen Peter **Marie** das Buch geben können.
 b. Deswegen wird **vielleicht** Peter morgen **Marie** das Buch geben können.
 c. Deswegen wird **vielleicht** Peter **Marie** morgen das Buch geben können.
 d. Deswegen wird **vielleicht** Peter **Marie** das Buch morgen geben können.
 e. Deswegen wird Peter **vielleicht** morgen **Marie** das Buch geben können.
 f. Deswegen wird Peter **vielleicht** **Marie** morgen das Buch geben können.
 g. Deswegen wird Peter **vielleicht** **Marie** das Buch morgen geben können.
 h. Deswegen wird Peter **Marie** **vielleicht** morgen das Buch geben können.
 i. Deswegen wird Peter **Marie** **vielleicht** das Buch morgen geben können.
 j. Deswegen wird Peter **Marie** das Buch **vielleicht** morgen geben können.
 ...

1.2 Generative approach

Generative grammar assumes that all syntactic constituents have the same basic structure, X-bar structure.



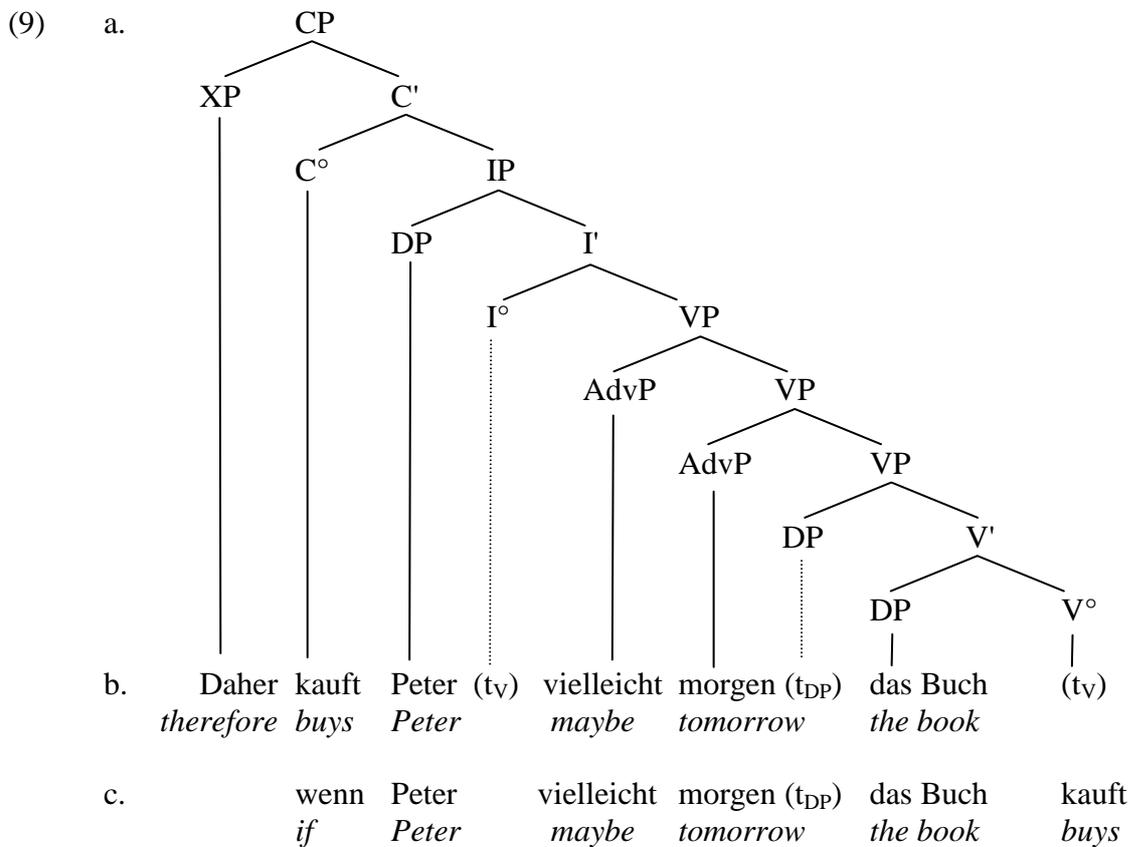
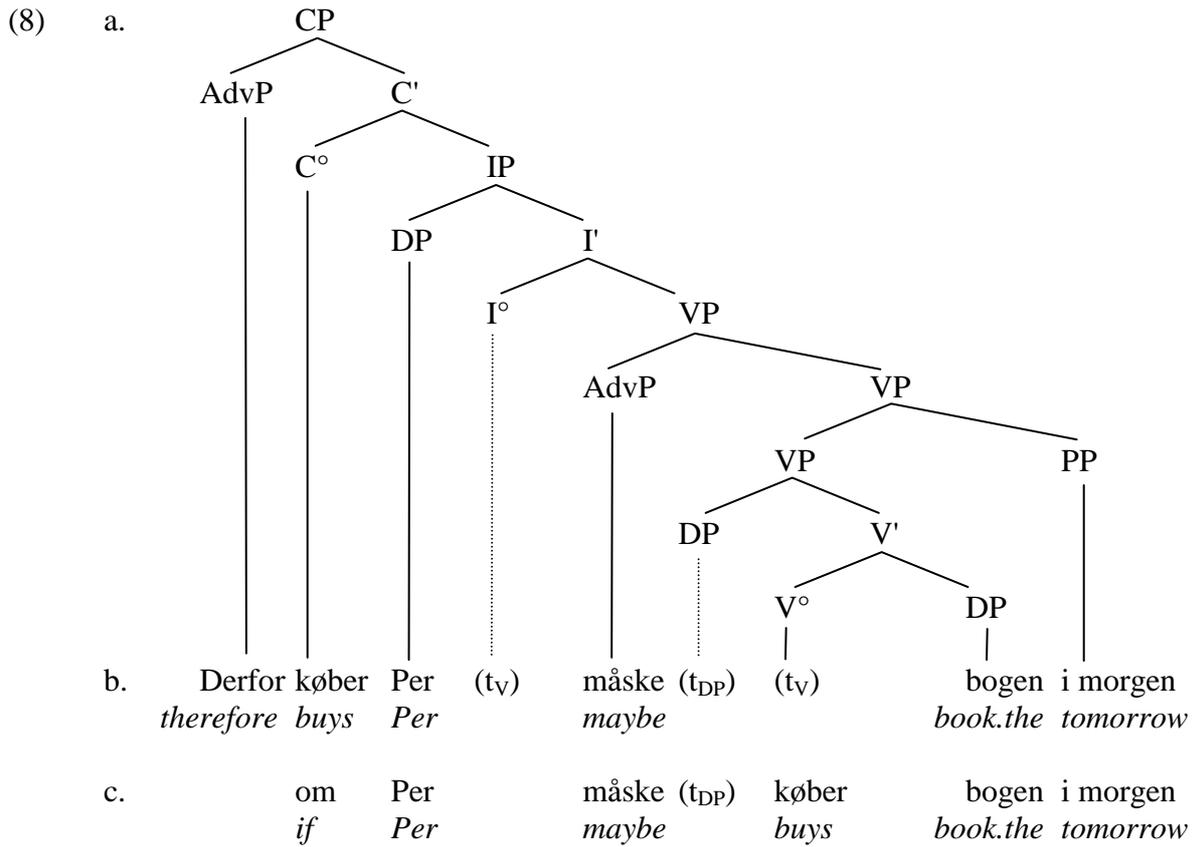
The structure in (7) is universal. However, its exact modelling may differ cross-linguistically. For instance, while the specifier position is usually considered to be fixed (it is the left daughter of XP), the complement may occur to the left or to the right of the head. The VO/OV contrast between Danish and German can be derived from a difference in head-direction: VP is head-initial in Danish, (8), but it is head-final in German, (9).

Similarly, Danish and German differ as to the position of the temporal adverbial *i morgen/morgen* 'tomorrow'. The adverbial occurs in clause-final position in Danish but in clause-medial position in German. This contrast can be captured by a difference in the direction of adjunction: The adverbial adjoins to the right of VP in Danish but to the left of VP in German. However, right-adjunction should not be ruled out on general grounds: Certain (heavy) constituents may follow a right-peripheral verb in German (see final field in section 1.1 above).^{2,3}

² Rather, one may possibly assume that right-adjunction in German clauses may only be derived by movement. That right-adjunction is not freely available in German clauses might have to do with the fact that VPs are head-final (i.e. since verbs take their arguments to the left, adverbials should also occur to the left; see Haider 2004).

³ Note that differences in the direction of adjunction predict differences in the order of adverbials. The unmarked order of clause-medial circumstantial adverbials in German is time < place < manner, (i)a. Adverbials in clause-final position in Danish, in contrast, display the mirror-image order in the unmarked case, manner < place < time as in (i)b; see e.g. Allan, Holmes & Lunds-kær-Nielsen (2006: 507).

- (i) a. ... falls Ida [_{VP} heute [_{VP} im Rosengarten [_{VP} mit großer Begeisterung die Hecken schneidet]]]
 if Ida today in.the rose garden with great enthusiasm the hedges cuts
 b. ... hvis Ida [_{VP} [_{VP} [_{VP} klipper hækkene] med stor begejstring] i rosenhaven] i dag]



Moreover, the main clause/embedded clause asymmetry follows from differences in verb movement in the generative analysis: The finite verb stays *in situ* in embedded clauses while

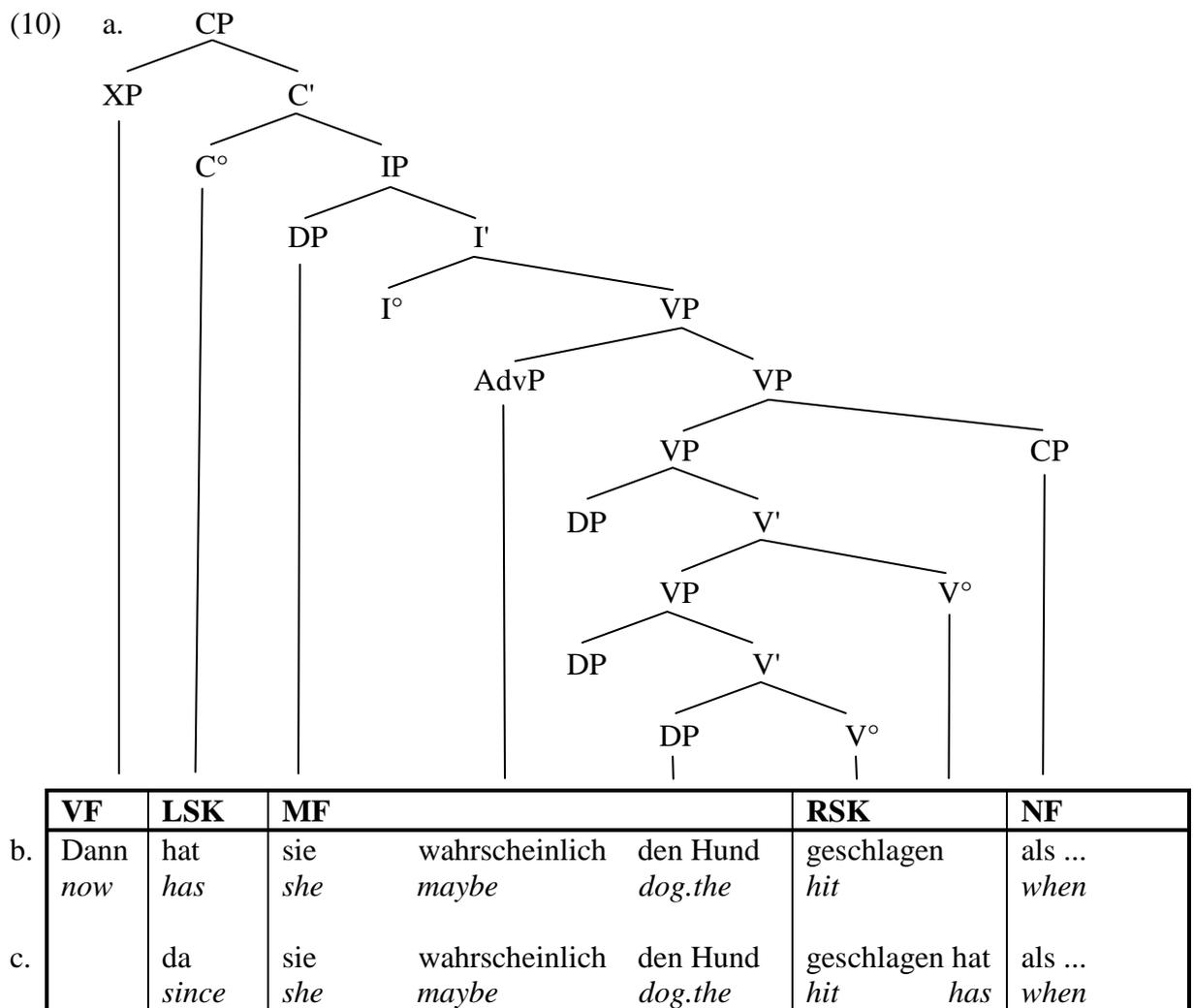
it undergoes V°-to-I°-to-C° movement in main clauses, leaving a trace t_V in its base position as well as in the intermediate position, I°. Thus the surface position of the finite verb in main clauses and the one in embedded clauses are connected by movement. (In addition, there is movement of the subject DP from SpecVP to SpecIP.)

Hence, in the generative analysis linear order depends on the exact hierarchical structure (e.g. head-initial VP vs. head-final VP, left-adjunction vs. right-adjunction) and movement (e.g. verb movement in main clauses vs. no verb movement in embedded clauses).

Finally, recall that Diderichsen assumes different hierarchical levels of fields and slots while the German topological model has fields and slots next to each other on the same level. In the generative approach, heads and phrases are in a hierarchical relationship (heads project phrases), they are structurally tied together (heads may take phrases as specifiers and complements) and they appear linearly side by side.

1.3 Comparison of the topological and generative approach

As for Danish, the generative tree structure can be mapped onto the topological model for German. This is illustrated in (10).

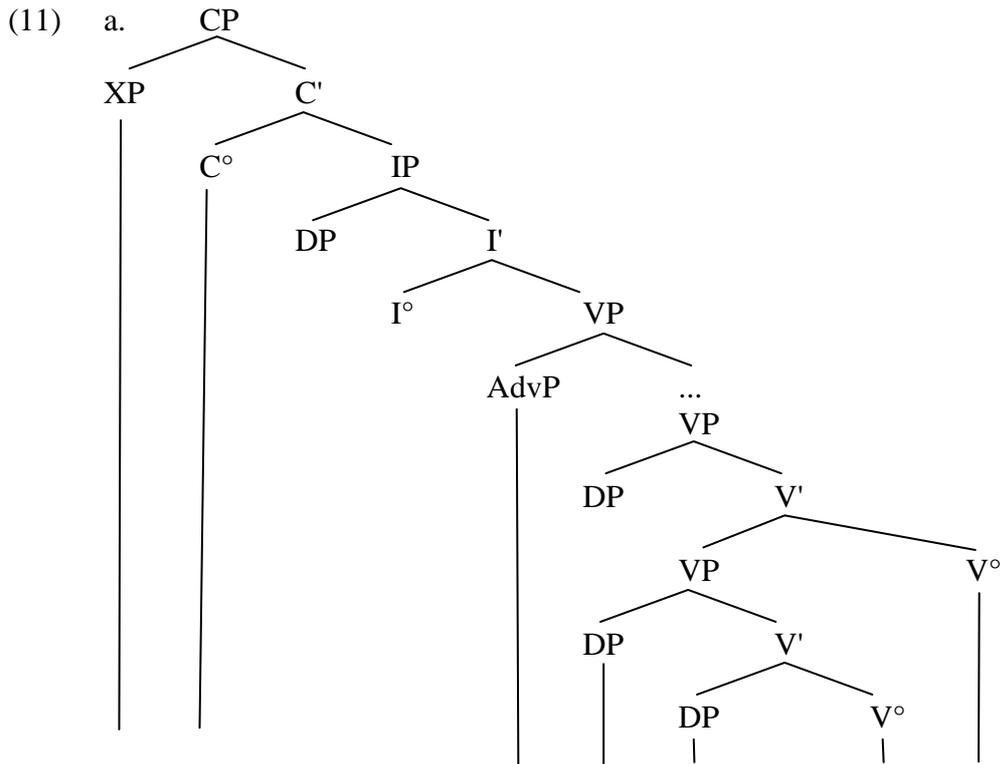


While the fields in the topological model can contain several constituents simultaneously (with the exception of the initial field⁴), each constituent has its own position in the generative tree (and even more than one position in case of movement, where the base position as well as intermediate positions are occupied by a trace of the moved constituent). In particular, C° corresponds to the left clause bracket and all V° -positions make up the right clause bracket. Everything between C° and the leftmost V° -position belongs to the middle field; i.e. the middle field corresponds to IP plus parts of VP. Notably the middle field encompasses constituents that are taken to have different structural status in the generative analysis, namely specifiers, adjuncts and complements. Finally, SpecCP corresponds to the initial field and right-adjoined positions to the final field.

Recall that Diderichsen's clause model for Danish includes two hierarchical levels, the field level and the slot level, and that the field level reflects the tripartite CP-IP-VP structure of the generative tree. This is not the case with the German topological model, which does not have different levels. Rather, the topological model for German has a flat structure where the three fields (the initial field, middle field and final field) are interspersed by two slots (the left and right clause bracket). The function ascribed to the left clause bracket by Ramers (2006) is to determine the feature [+/- finite], which temporally specifies the event described by the verbal elements. In the generative approach, [+/- finite] is often taken to be specified in I° , a position where the finite verb never surfaces in: It either stays in its base position V° or moves – via I° – to the higher head position C° , which corresponds to the left clause bracket (see (10) above). The right clause bracket is described in Ramers (2006) as containing the core semantic element which governs the elements in the middle field and in the final field. This is similar to the function of (main verb) V° which is projected by a verb which bears the core meaning and governs its complements.

In addition, just as for Danish, the generative approach and the topological approach predict different constituency for German. For instance, right-peripheral verbs and objects do not make up one constituent in the topological approach, where the verbs occur in the right clause bracket and the objects in the middle field (see (11)b below), but they do so in the generative approach. More precisely, the main verb makes up a constituent together with its objects and then this constituent makes up a bigger constituent with the higher verb, as illustrated in the simplified tree structure in (11)a.

⁴ In the topological approach, the fact that Danish and German declarative main clauses are V2, i.e. that only one constituent may precede the finite verb, is accounted for by the stipulation that in contrast to other slots/fields, the foundation field/initial field may only host a single constituent. In contrast, in generative syntax, where every position may generally only host a single constituent, this follows from the fact that there is only one position to the left of C° , namely SpecCP, adjunction to CP being ruled out.



b.

VF	LSK	MF	RSK	NF
Ich	habe	schon lange Maria das Buch	zurückgeben wollen	
<i>I</i>	<i>have</i>	<i>long ago Maria the book</i>	<i>give-back want</i>	

Höhle (1986) assumes an S-field that comprises the middle field and the right clause bracket in order to account for cases like (12), where the non-finite verbs together with the objects occur in the initial field.

(12) [Maria das Buch zurückgeben wollen] habe ich schon lange.

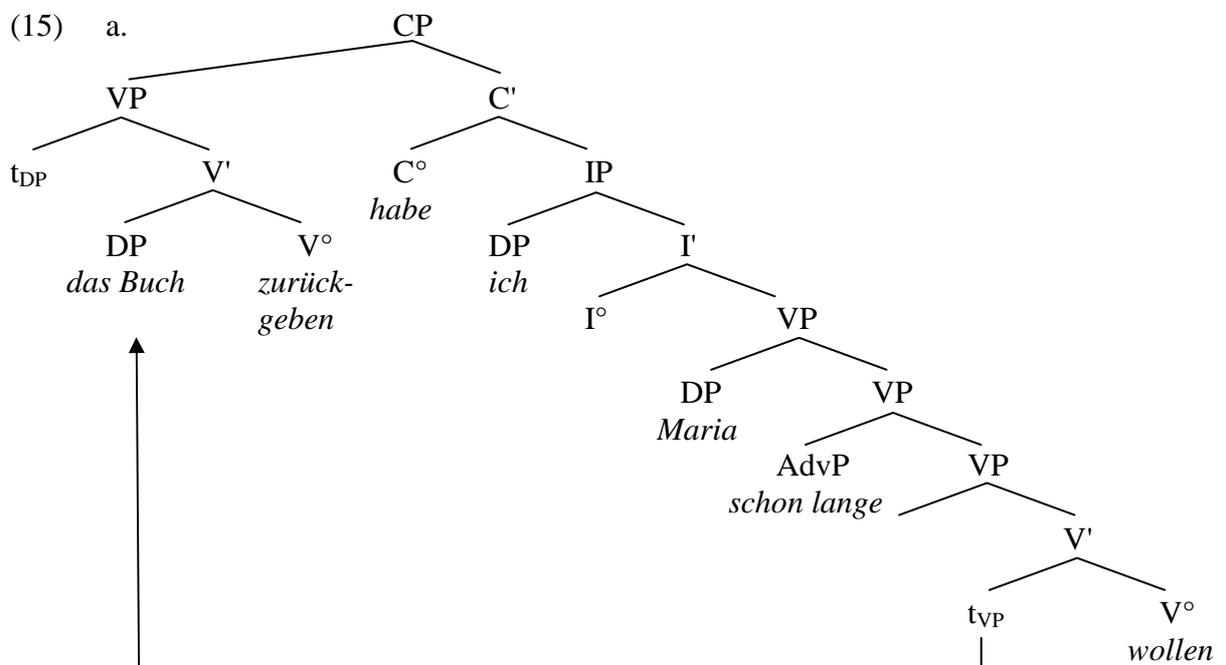
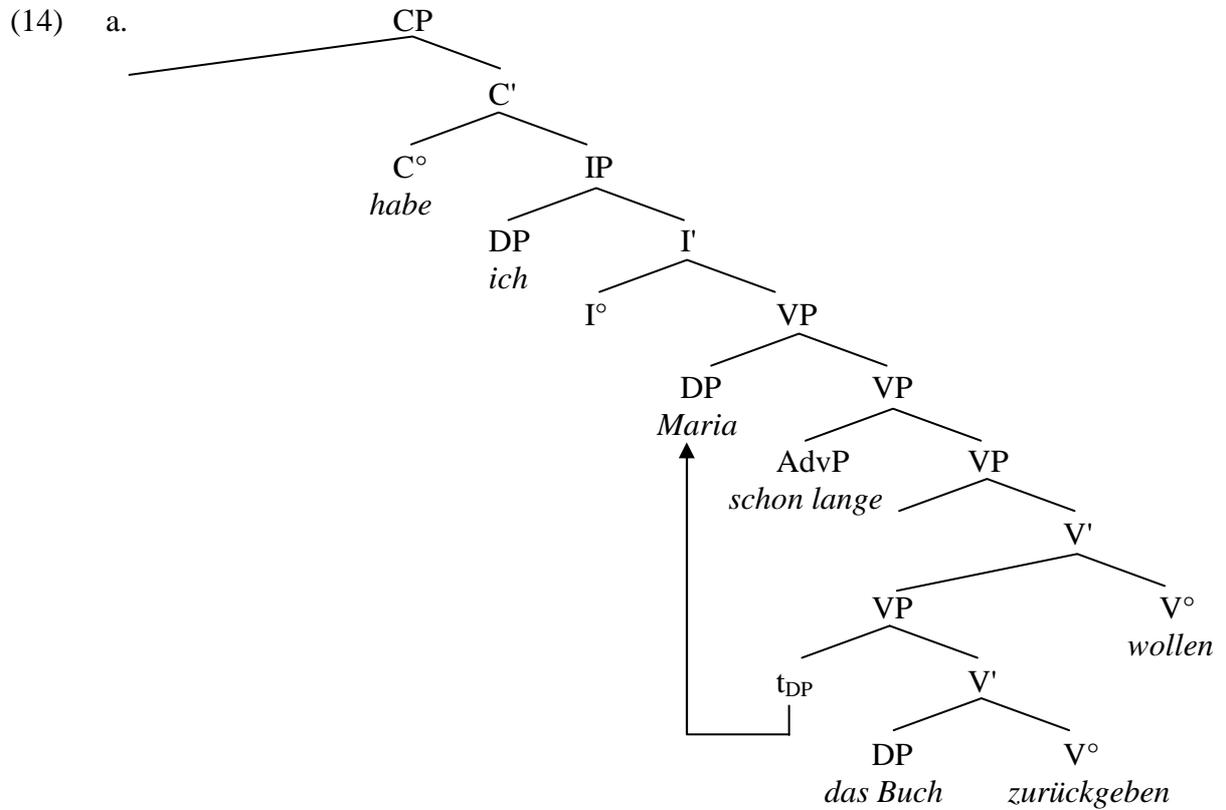
Note however that not all of the S-field is topicalised in (12): The adverbial *schon lange* 'long ago' is left behind in the middle field. Moreover, it is possible to strand the modal verb and/or (one of) the objects; in other words, it is possible to topicalise parts of the S-field which consist of subparts of different boxes (middle field and right clause bracket). These topicalisation patterns are unexpected in the topological approach.

(13)

	VF	LSK	S-Feld MF	RSK	NF
a.	Maria das Buch zurückgeben	habe	ich schon lange ___ ___	___ wollen	
b.	Das Buch zurückgeben	habe	ich M schon lange ___	___ wollen	
c.	Das Buch zurückgeben wollen	habe	ich M schon lange ___	___ ___	

In the generative approach, stranding of the modal verb as in (13)a and (13)b is expected to be possible as the lowest VP includes the main verb and both objects but excludes *wollen* 'want'; see (11) above. In addition, stranding of an object as in (13)b and (13)c can be accounted for by remnant VP-topicalisation: The object is moved out of VP before

topicalisation takes place; see the derivation of (13)b in (14). (Movement to a VP-adjoined position, scrambling, may also account for the various word orders within the German middle field; compare (6) above.)



2 Nominals

2.1 Topological approach

Different topological models have been proposed for German nominals (see e.g. Engel 1970, 1977, 1988, Zifonun et al. 1997, Eisenberg et al. 2009). I will here concentrate on the one by Karnowski & Pafel (2004) in (17) which resembles the topological model for German clauses repeated in (16).

(16)	Vorfeld	Linke Satzklammer	Mittelfeld	Rechte Satzkl.	Nachfeld
(17)	Z-field	Definiteness	X-field	Nominal	Y-field
	focus/nega- tion particle, adverb, PP, <i>all-</i> , ...	article, demon- strative, possessive, interrogative, quantity expression, genitive phrase, ...	adjective phrases	one noun and optionally left or right narrow appositions	genitive phrase, PP, adverb, embedded clause, ...

Parallel to the clausal topological model, the model for nominals has a flat structure and distinguishes between two slots, Def and Nom, and three fields, with the Z-field preceding both slots, the X-field intervening between them and the Y-field following them. According to Ramers (2006), the common function of Def and the left clause bracket is to limit the potential reference of the expression: Similar to the left clause bracket, which singles out an actual event by determining the feature [+/- finite], Def, which hosts the determiner, determines the feature [+/- definite], which identifies one or more examples of the set described by the noun. On the other hand, Nom and the right clause bracket contain those elements that encode the core meaning (i.e. the nouns and verbs) and function as governors for the elements in the fields to their left and right (X-field and Y-field in the nominal model and middle field and final field in the clausal model, respectively).

The two slots Def and Nom may contain one simple or complex element. Examples of simple and complex determiners are given in (18). (Recall from section 1.1 that the left clause bracket usually contains the finite verb or a subordinating complementizer but is assumed in Ramers (2006) also to be able to contain a more complex constituent; see footnote 1.)

- (18) a. ein/der/mein/Peters/dieser/welcher Kuchen
a/ the/ my/ Peters/this/ which cake
- b. ein Stück/derselbe/ ein jeder/welch ein/solch ein/dem Peter sein Kuchen
a piece/ the same/every/ what a/ such a/ the Peter his cake

Complex nouns may consist of several nouns or noun plus post-nominal adjective (similar to the right clause bracket which may contain several verbs as well as certain non-verbal elements).

- (19) a. Herr Prof. Dr. Peter Müller
Mr prof. dr. Peter Müller
- b. Genuss pur
pleasure pure

While the initial field of the German topological model for clauses may only contain a single phrase of almost any category as mentioned in section 1.1 (see also footnote 4), several elements can co-occur in the Z-field, (20).

- (20) a. selbst alle diese Politiker
even all these politicians
- b. nur dort das Haus
only there the house (Karnowski & Pafel 2004: 165)

However, the types of phrases that may occur in the Z-field are more restricted: According to Karnowski & Pafel (2004), the Z-field may only contain phrases that can be dislocated from the rest of the nominal, (21)-(23).⁵

- (21) a. Nur der Autor kann das wissen.
only the author can that know
- b. Der Autor kann das nur wissen. (Karnowski & Pafel 2004: 166)
- (22) a. Alle diese Politiker sind unfähig.
all these politicians are incompetent
- b. Diese Politiker sind alle unfähig. (Karnowski & Pafel 2004: 166)
- (23) a. Vom Fritz der Bruder ist da.
of.the Fritz the brother is here
- b. Vom Fritz ist der Bruder da. (Karnowski & Pafel 2004: 166)

Parallel to adverbs in the middle field in the clausal model, adjectives occur in the X-field in the nominal model. Like the adverbs (see footnote 3), they are subject to semantic ordering restrictions, quantifying > locally/temporally situating > classifying > nationality adjective (Zifonun et al. 1997: 2071):

- (24) a. drei biedermeierliche schöne rote seidene österreichische Blusen
three Biedermeier nice red silk Austrian blouses
(Zifonun et al. 1997: 2071)
- b. die vielen hiesigen belesenen ausländischen Studenten
the many local well-read foreign students (Ramers 2006: 111)

Finally, while arguments and adverbials in the clause usually occur in the middle field and the final field is mostly reserved for heavy constituents and afterthoughts, arguments and adverbials usually occur in the final Y-field of the nominal:

⁵ Note that adverbs like *dort* 'there' in (20)b and (i)a are also taken to occur in the Z-field although it does not seem possible to separate the adverb from the rest of the nominal; the sentences in (i)b and (i)c get a different reading.

- (i) a. Dort die vier dicken Bücher über Diäten hat er schon mal gelesen.
there the four thick books on diets has already before read
- b. Die vier dicken Bücher über Diäten hat er dort schon mal gelesen.
- c. Dort hat er die vier dicken Bücher über Diäten schon mal gelesen.

- (25) a. der Besuch der alten Dame
the visit the old lady
- b. der Besuch in Rom damals
the visit in Rome back then
- c. die Frage, ob NPs und Sätze die gleiche Struktur haben
the question whether NPs and clauses the same structure have
- d. die Hoffnung auf EU-Osterweiterung in Deutschland
the hope for EU eastern enlargement in Germany
- (Ramers 2006: 119/121)

As regards Danish nominals (b-examples), their word order is similar to the one in German nominals (a-examples) in that e.g. a quantifier, a quantifying expression or a possessor phrase may precede the noun, (26), numerals and adjectives intervene between the determiner and the noun, (27), and arguments and adverbials follow the noun, (28) and (29).⁶

- (26) a. alle/ein Sack/Peters Kartoffeln
all/ a sack/ Peter's potatoes
- b. alle/en sæk/ Peters kartofler
- (27) a. die zwei kleinen Mädchen
the two little girls
- b. de to små piger
- (28) a. ein Bruder von Fritz
a brother of Fritz
- b. en bror til Fritz
- (29) a. der große Mann gestern
the tall man yesterday
- b. den høje mand igår

In fact, the topological model suggested by Hansen & Heltoft (2011) for Danish nominals in (31) looks similar to Karnowski & Pafel's (2004) model for German nominals in (30) repeated from (17) above. Note however that the two models are not considered to be connected in the topological analyses.

⁶Of course, there are also a number of differences between German and Danish nominals some of which are mentioned below.

(30)	Z-field	Def	X-field	Nom	Y-field	
(31)	sammenfatter (subsumer)	bestemmer (determiner)	tæller (counter)	beskriver (describer)	kategori (category)	efterstillede led (extraposition)
	quantifier, identifier	article, genitive phrase, pronoun, quantity expression	numeral, numeral adjective	adjective	noun, pronoun	appositions, ad- verbials, partici- ples, relative clauses, argu- ments, explicative infinitives/ embedded clauses

Like the German model, the Danish model comprises boxes for the determiner and noun as well as preceding, intervening and following boxes. The main difference between the two models is that the Danish one provides an extra slot for numerals and numeral adjectives, namely the counter slot ("tæller"). In Karnowski & Pafel's (2004) analysis, these are placed leftmost in the X-field, which is reserved for adjectives.⁷ The predicted – and observed – orders are the same in both languages: A numeral follows the determiner but precedes all (other) adjectives.

(32)	Z-field	Def	X-field	Nom	Y-field	
a.		die <i>the</i>	vielen <i>many</i>	grünen <i>green</i>	Bücher <i>books</i>	
b.		die <i>the</i>	zwei <i>two</i>	großen <i>big</i>	Pferde <i>horses</i>	
	sammenf.	bestemmer	tæller	beskriver	kategori	efterstillede led
c.		de	mange	grønne	bøger	
d.		de	to	store	heste	

The types of constituents that may appear in the determiner ("bestemmer"), describer ("beskriver"), category ("kategori") and extraposition ("efterstillede led") boxes in the Danish model are basically the same as the ones that may occur in Def, X-field, Nom and Y-field in the German model, respectively. However, there are differences in which elements may occur in the initial field. For instance, while Karnowski & Pafel (2004) restrict the Z-field to phrases that can be dislocated from the rest of the nominal, Hansen & Heltoft's (2011) subsumer field ("sammenfatter") may encompass quantifiers and identifiers (see e.g. (26)b above). One consequence of this is that *solch/sådan* 'such' in pre-determiner position is classified differently in the two languages: It is considered to be part of a complex determiner in German (as it cannot be separated from the rest of the nominal), (33)a, but to be an identifier in the subsumer field in Danish, (33)c. In addition, *solch/sådan* can occur in post-determiner position in which case it is considered to be an adjective in the X-field and

⁷ Expressions like *viele* 'many', *wenige* 'few' etc. are often classified as adjectives in German due to the fact that they show adjectival agreement.

describer field ("beskriver"), respectively; see (33)b and (33)d. For more details on *solch/sådan* see Wood & Vikner (2011) and Wood (2012).

(33)	Z-field	Def	X-field	Nom	Y-field
a.		solch ein <i>such a</i>		Kuchen <i>cake</i>	
b.		ein	solcher	Kuchen	
	sammenf.	bestemmer	tæller	beskriver	kategori
c.	sådan	en		sådan	kage
d.		en		sådan	kage

The example above shows a contrast in the topological analyses: Both languages have pre-determiner *solch/sådan* 'such' but they are placed in different boxes in the two models/languages. However, there are of course also empirical differences between German and Danish. For example, a PP may occur in post-nominal or pre-determiner position in German, (34)a and (34)b, while it may only occur in post-nominal position in Danish; see (34)c and (34)d. In other words, while a PP may occur in the final slot in both languages (Y-field and extraposition field, "efterstillede led", respectively), occurrence of a PP in the initial field (Z-field and subsumer field, "sammenfatter", respectively) is possible in German but not in Danish. As the topological analyses just list which constituents can occur in which boxes and the two models are not related to each other, there is no principled reason for this cross-linguistic contrast.

(34)	Z-field	Def	X-field	Nom	Y-field
a.		der	schöne	Bruder	von Fritz
b.	?von Fritz	<i>the</i> der	<i>beautiful</i> schöne	<i>brother</i> Bruder	<i>of Fritz</i>
	sammenf.	bestemmer	tæller	beskriver	kategori
c.		den		smukke	bror
d.	*til Fritz	den		smukke	bror

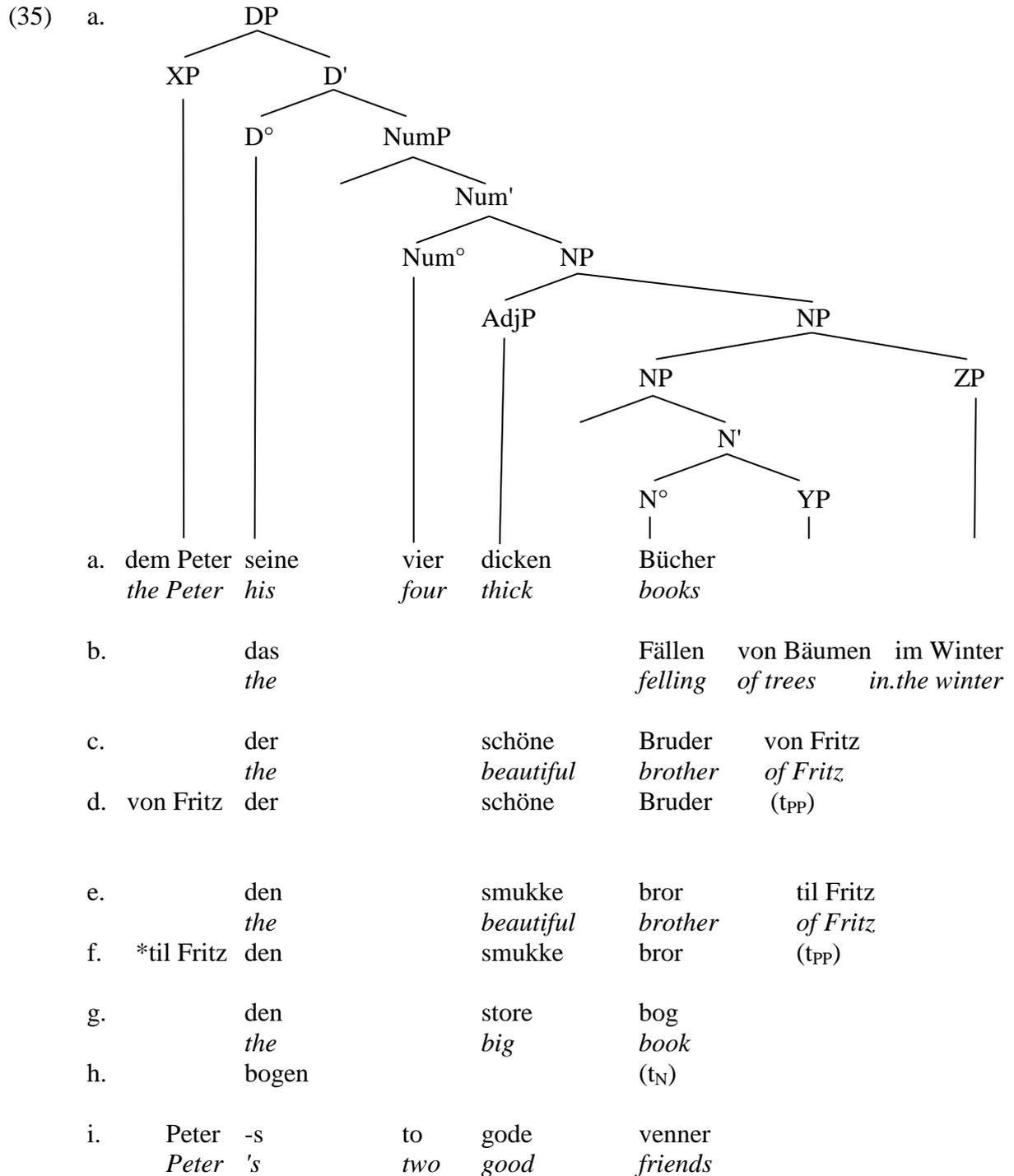
2.2 Generative approach

In the generative analysis, all syntactic constituents are subject to X-bar theory. Thus, nominals basically have the same hierarchical structure as clauses. The somewhat simplified syntactic tree in (35) has a tripartite structure comprising DP, NumP and NP (cf. the CP-IP-VP structure of clauses).⁸ In contrast to clauses, which differ in the ordering of verbs and

⁸ Note that more than one constituent can precede a determiner, pointing to the conclusion that there are additional functional projections on top of DP. The various phrases that may occur in pre-determiner position (i.e. PPs, DPs, quantifiers, adverbs) might thus not all receive the same structural analysis (i.e. not all of them would be specifiers of DP).

- (i)
- a. selbst von Fritz der Bruder
even of Fritz the brother
 - b. nicht alle meine Bücher
not all my books
 - c. nur Peters Auto
only Peter's car

objects (as well as adverbials), German and Danish nominals exhibit a similar word order, as shown by the examples in (26)-(29) above. The languages are thus expected to have the same structure: NP is head-initial in both languages (i.e. complements occur to the right of the noun), adjectives attach to the left of NP (i.e. they intervene between the determiner and the noun) and other adverbials attach to the right (i.e. they follow the noun); see the German examples in (35)b-d and the Danish examples in (35)e-i.⁹



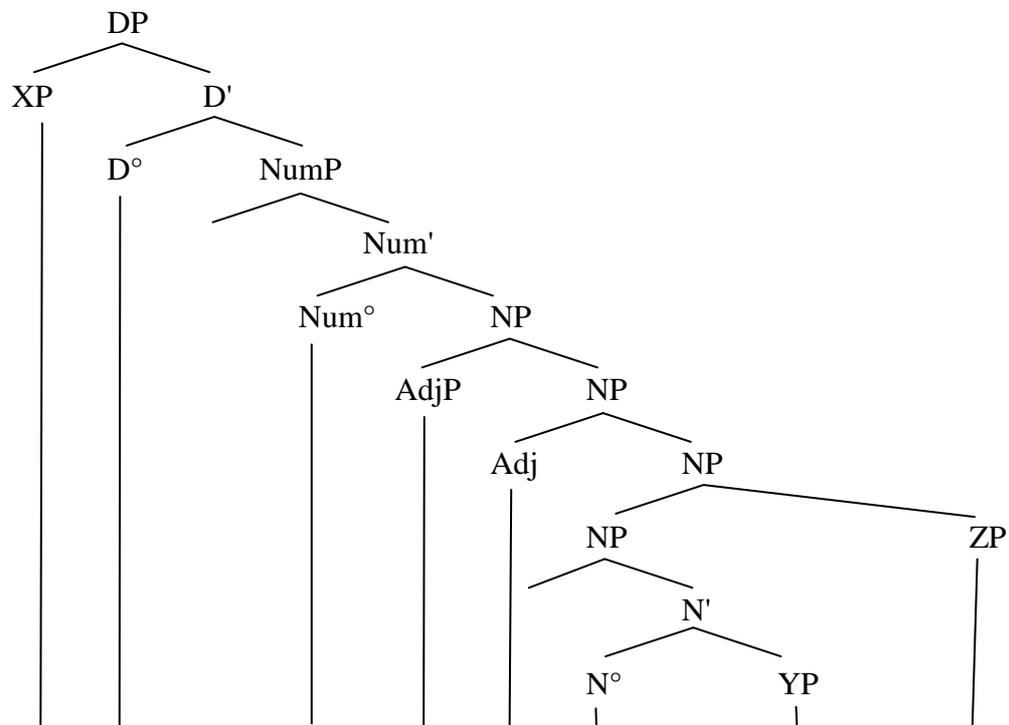
⁹ Alternatively, adjectives may be taken to occur in functional projections between NumP and NP.

As mentioned in section 1.2 above, word order depends on the exact hierarchical structure and movement in the generative approach. Hence, although German and Danish exhibit the same hierarchical structure, cross-linguistic differences can still be captured by differences in movement. For instance, while the post-nominal PP *von Fritz* 'of Fritz' can undergo leftward movement in German, (35)c and (35)d, this is not possible in Danish, (35)e and (35)f. Moreover, the fact that the definite article is suffixed to the noun in Danish if there is no intervening adjective can be accounted for by the assumption that the noun undergoes head movement to D° in this case, as illustrated in (35)h above.

2.3 Comparison of the topological and generative approach

As for clauses, the generative tree structure, (36)a, can be mapped onto the topological models for nominals in Danish, (36)b, and German, (36)c.

(36) a.



b.

samme.	bestemmer	tæller	beskriver	kategori	efterstillede led	
	de <i>the</i>	fire <i>four</i>	store blå <i>big blue</i>	bøger <i>books</i>		
	den <i>the</i>		gamle <i>old</i>	dame <i>lady</i>		igår <i>yesterday</i>

c.

Z-field	Def	X-field	Nom	Y-field
von F. <i>af Fritz</i>	der <i>the</i>	große <i>big</i>	Bruder <i>brother</i>	
	das <i>the</i>		Fällen <i>felling</i>	von Bäumen im Winter <i>of trees in.the winter</i>

Again, while each constituent has its own position in the tree structure, the topological fields can contain several constituents (see e.g. the describer field, "beskriver", in (36)b and Y-field in (36)c).

As mentioned above, Karnowski & Pafel (2004) distinguish between slots and fields. Their two slots Nom and Def correspond to the generative heads N° and D° , whose functions resemble the ones of Nom and Def described in section 2.1 above (i.e. Nom/ N° contains/is projected by the noun bearing the core meaning and Def/ D° specifies the feature [+/- definite], identifying one or more examples of the set described by the noun). The head Num $^\circ$ has no equivalent in the German model but corresponds to the counter slot ("tæller") in the Danish model.

In particular, notice that both arguments and adverbials occur in the final field of the topological models (i.e. Y-field and the extraposition field, "efterstillede led", respectively). The generative analysis, in contrast, structurally distinguishes between complements and adjuncts (to the right). This distinction is useful in e.g. accounting for the fact that complements precede adverbials in German, (37), and Danish, (38). While topological analyses need to stipulate this ordering, it follows from the structural relationship in the generative analysis; see the tree in (36) above.

- (37) a. das Fällen von Bäumen im Winter
 the felling of trees in.the winter
 b. *das Fällen im Winter von Bäumen

- (38) a. fældningen af træer om vinteren
 felling.the of trees in winter.the
 b. *fældningen om vinteren af træer

3 Similarities and differences between clauses and nominals in Danish and German

3.1 Direction of arguments

Recall that German verbs take their objects to the left, (39)a, while Danish verbs, (39)b, as well as German and Danish nouns, (39)c and (39)d, take their complements to the right.

- (39) a. Deswegen hat er sorgfältig Denkmäler katalogisiert.
 therefore has he carefully monuments indexed
 b. Derfor har han omhyggeligt katalogiseret mindesmærker.

 c. das sorgfältige Katalogisieren von Denkmälern
 the careful indexing of monuments
 d. den omhyggelige katalogisering af mindesmærker

In the topological approach, the box that contains the object is to the left of the verb in the German clausal model (i.e. in the middle field) but to the right of the verb in the Danish clausal model (i.e. in "N") as well as to the right of the noun in the models for German and Danish nominals (i.e. in Y-field and extraposition field, "efterstillede led", respectively). However, as the separate models are not connected to each other, neither the similarity between Danish clauses, Danish nominals and German nominals nor their contrast to German clauses is captured in any principled way.

(40) a.

Vorfeld	LSK	Mittelfeld	RSK	Nachfeld
Deswegen	hat	er sorgf. Denkmäler	katalogisiert	

b.

Fundam.	Nexusfelt			Indholdsfelt		
F	v	n	a	V	N	A
Derfor	har	han	omhyggeligt	katalogiseret	mindesmærker	

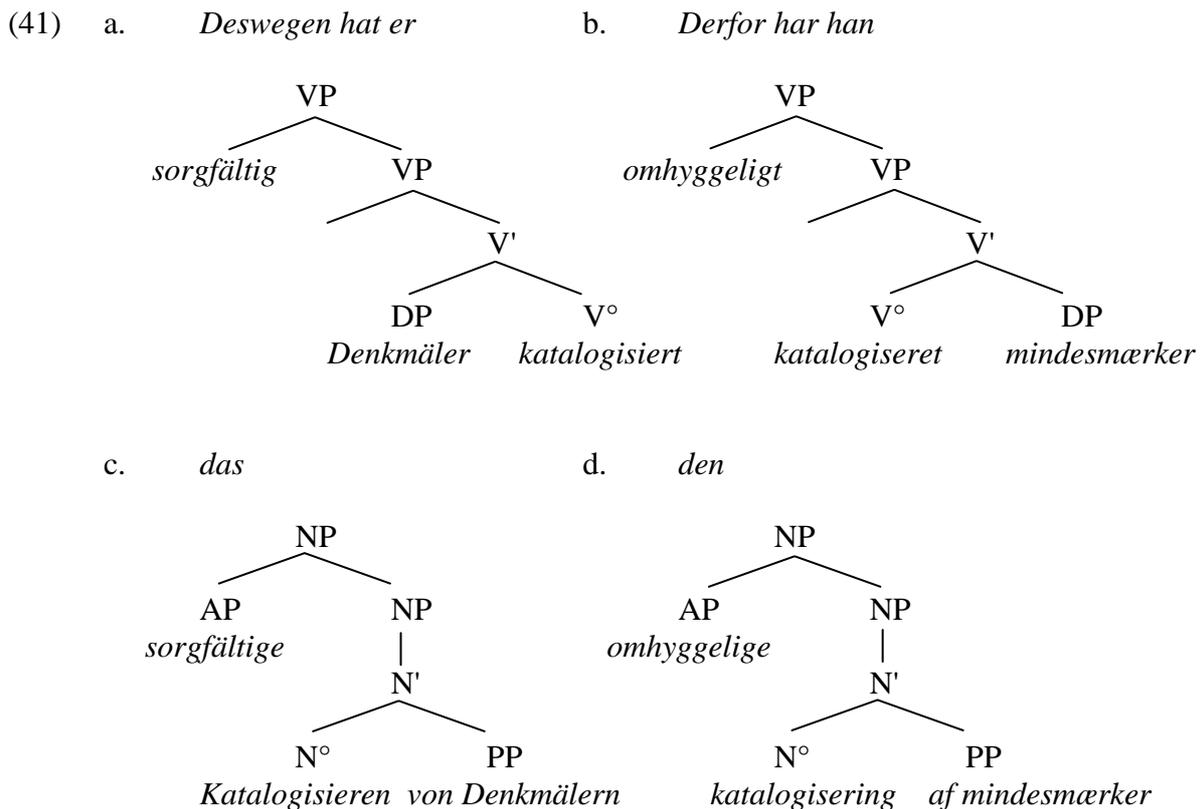
c.

Z-field	Def	X-field	Nom	Y-field
	das	sorgfältige	Katalogisieren	von Denkmälern

d.

sammen.	best.	tæller	beskriver	kategori	efterstillede led
	den		omhyggelige	katalogisering	af mindesmærker

In contrast, the generative analysis assumes that there is one basic structure, X-bar structure, which applies to both clauses and nominals in German and Danish (and, of course, to all other types of constituents and languages). The above data can be accounted for by the head direction parameter: While VP is head-final in German (i.e. V° takes its complement to the left), (41)a, the Danish VP, (41)b, as well as the German and Danish NP, (41)c and (41)d, are head-initial (i.e. V°/N° takes its complement to the right).



3.2 Direction of adverbials

Similar to complements, there is variation across languages and constructions as to the position of adverbials. In the example in (39) above, the adverbs *sorgfältig/omhyggeligt* 'carefully' as well as the adjectives *sorgfältige/omhyggelige* 'careful' precede the verb and noun, respectively. However, other types of adverbials such as the temporal adverbial *heute*

nachmittag/i eftermiddag 'this afternoon' usually occur to the left of the verb in German, (42)a, but to the right of the verb in Danish, (42)b, as well as to the right of the noun in both German and Danish, (42)c and (42)d.

- (42) a. weil er heute nachmittag einen Vortrag hält.
because he this afternoon a talk gives
- b. fordi han holder et foredrag i eftermiddag.
- c. der hervorragende Vortrag heute nachmittag
the excellent talk this afternoon
- d. det fremragende foredrag i eftermiddag

The adverbial *heute nachmittag/i eftermiddag* 'this afternoon' is taken to occur in the middle field in the German clausal model but in the final box in the Danish clausal model (the "A" slot) and in the nominal models for German and Danish (Y-field and extraposition field, "efterstillede led", respectively).¹⁰ Again, each model just lists which box may contain the adverbial; there is no connection between the models and thus no account for the similarity/difference.

- (43) a.

VF	LSK	Mittelfeld	RSK	Nachfeld
	weil	er heute nachmittag einen Vortrag	hält	
- b.

Konj.	Nexusfelt			Indholdsfelt		
k	n	a	v	V	N	A
fordi	han		holder		et foredrag	i eftermiddag
- c.

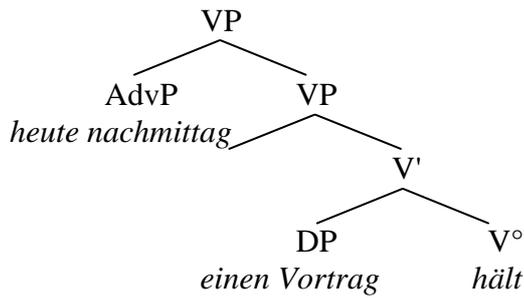
Z-f.	Def	X-field	Nom	Y-field
	der	hervorragende	Vortrag	heute nachmittag
- d.

sam.	best.	tæller	beskriver	kategori	efterst. led
	det		fremragende	foredrag	i eftermiddag

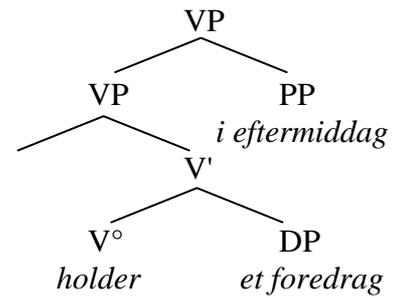
In the generative analysis, in contrast, the data can be accounted for by differences in the direction of adjunction: The adverbial adjoins to the left of VP in German but to the right of VP in Danish as well as to the right of NP in German and Danish, as illustrated in (44). (The difference in the direction of adjunction is possibly connected to the different head direction discussed in section 3.1; see footnote 2 above.)

¹⁰ Note the different alignment of the clause models for Danish and German in (40) and (43): While "v" is aligned with the left clause bracket in the main clause in (40), "k" is aligned with the left clause bracket and "v" is aligned with the right clause bracket in the embedded clause in (43).

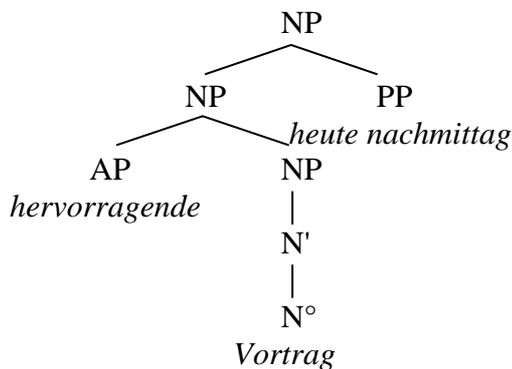
(44) a. *weil er*



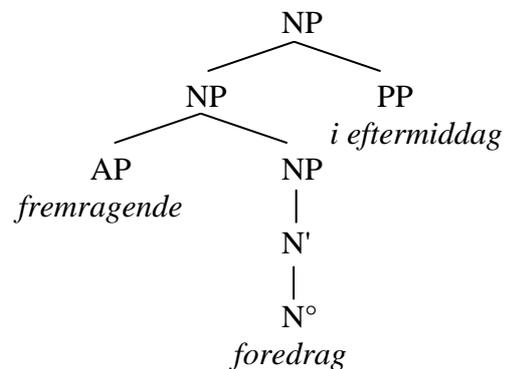
b. *fordi han*



c. *der*



d. *den*



4 Conclusion

The two-part introduction looked at German and Danish clauses and nominals in topological and generative approaches and discussed similarities and differences on all three dimensions.

German vs. Danish

German and Danish clauses are similar in that they display a main clause/embedded clause asymmetry; but they differ in OV/VO order. Moreover, German and Danish nominals are similar e.g. in that elements such as *alle/alle* 'all', *solch/sådan* 'such' can occur in pre-determiner position and adjectives intervene between the determiner and the noun; they differ in that PPs may occur in pre-determiner position in German and definite nominals have a suffixed article in Danish (if there are no adjectives).

Clauses vs. nominals

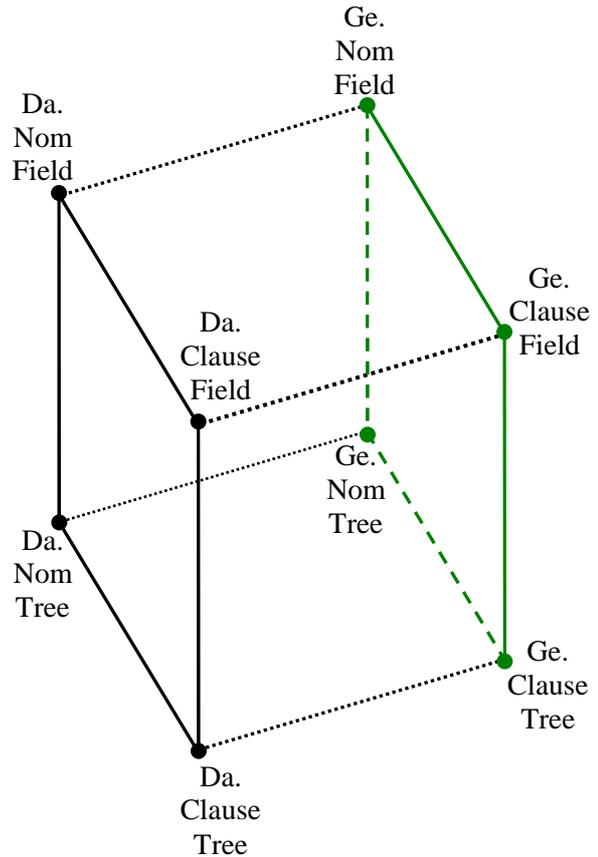
In Danish, clauses and nominals are similar in that they take complements as well as (certain) adverbials to the right. In German, clauses and nominals differ in this respect: While complements and adverbials occur to the left of a verb, they occur to the right of a noun.

Topological vs. generative approaches

There are – to a certain extent – correspondences between the two approaches. For instance, generative tree structures can be mapped onto the topological field models. Moreover, the CP-IP-VP structure in generative analyses seems to converge with Diderichsen's field level. In the German topological models for clauses and nominals, which have a flat structure with slots and fields next to each other on the same level, the slots (i.e. left clause bracket, right clause bracket, Def and Nom) correspond to – and have similar functions as – the head positions C° , V° , D° and N° in generative analyses.

Of course, the two approaches also differ in various respects. For instance, there are differences between the approaches as regards constituency and consequently differences in the predictions as to which complex constituents may precede the finite verb in main clauses. Moreover, the boxes in the topological models may contain several constituents simultaneously while each constituent has its own position in the generative tree, and there might be even more positions than needed to account for a single language (e.g. I° in Danish and German).

Most importantly, the topological approach assumes different models (one for each construction: Danish clauses, Danish nominals, German clauses and German nominals), some of which look very similar. However, the various models are not considered to be related to each other. Consequently, the topological approach has little to say about similarities and differences across languages and constructions and might even analyse the same phenomenon differently in different languages (e.g. *solch/sådan* 'such' in pre-determiner position, section 2.1). Though there are of course different modellings suggested in the literature (regarding e.g. how many and which functional projections there are), the generative approach assumes that there is one basic structure, X-bar structure, which holds for all constructions in all languages, allowing to account for variation across languages as well as variation within a single language: Word order depends on the exact hierarchical structure (head direction: complements to the left or right of V° and N° ; direction of adjunction: adverbials in clause-medial or clause-final position) as well as on movement (main clause/embedded clause asymmetry, PPs in pre-determiner position in German, suffixed definite articles in Danish).



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