# BEYOND DIDERICHSEN: C-MODELS AND THE COMPARISON OF ENGLISH, DANISH AND GERMAN CLAUSE STRUCTURE

by
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This paper examines the clause structure of three Germanic languages – English, Danish, and German – from a new point of view. It takes Paul Diderichsen's model for Danish syntax as a starting point, notes several shortcomings of this model, rectifies them and develops a new model. This new model incorporates a number of devices employed in the 'Odense system' of syntactic analysis for English, but it goes beyond this in that, like Diderichsen's model, it makes typological claims, and hence can be used for comparing the syntax of the three languages. The model takes the concept of continuity as its fundamental feature. It is therefore termed the 'Continuity-model', or 'C-model', for short. From the vantage point of this model, it becomes apparent that, contrary to what might otherwise be assumed, the structure of subordinate clauses is generally simpler and thus more basic than main clause structure in all three languages.

## *1. Background*

In the autumn of 1994 five staff members from the Institute of Language and Communication at Odense University began working together to prepare a graduate level course dealing with word order in Danish, German, English, and French. The members of this group are: Hans Basbøll and Bjarne le Fevre Jakobsen for Danish, Uwe Helm Petersen for German, John Dienhart for English, and Poul Søren Kjærsgaard for French. The collaboration has been a very fruitful one. It has forced each of us to present our views of clause structure as precisely as we can and to do so in terms that are comprehensible to others outside our own discipline. I have benefited immensely from this exchange of views, and would like to take the opportunity here to thank the other members of this group for sharing with me their insights into the syntax of their respective languages. I am also indebted to Hans Anton Koefoed for the clear and insightful comments which he made on Diderichsen's model in the weekly meetings of the Institute's Linguistic Circle.

The members of our working group agreed from the outset that we would take Diderichsen's syntactic model for Danish as our starting point. The reason for this was that Diderichsen's model offers a kind of typology for Danish sentences, and we thought it would be interesting to

see to what extent this typology could be applied to other languages. At the very least, we reasoned, we might be able to identify syntactic features in these other languages that posed problems for Diderichsen's model. This, in turn, might give rise to new hypotheses for model building. Both assumptions appear to be valid. In this paper, I offer my views on some of the problems, and present the basic features of a new model which, I believe, allows us to compare, in an interesting and fruitful fashion, the syntax of the three Germanic languages represented in our group – English, Danish and German.

## 2. *Diderichsen's system*

Diderichsen's system has had a wide-ranging and long-lasting influence on the teaching of Danish in Denmark. Paul Diderichsen (1905-1964) was professor of Danish at the University of Copenhagen. In 1946 he published his major work on the Danish language: *Elementær dansk grammatik*. This book has since gone through several editions and many reprintings. Diderichsen also wrote a short English version of his views on Danish grammar. This was published in 1964 as *Essentials of Danish grammar*. Shortly thereafter, in 1967, Hans Koefoed published a small pamphlet, also in English, in which he gave a summary of Diderichsen's model, and offered some suggestions for how it might be adapted to the description of Norwegian, Swedish, English and German.

Diderichsen's model has been adopted by Erik Hansen in his popular and influential Danish grammar, *Dæmonernes port*, which was published in 1977. The model has also been discussed, extended and criticized in a number of articles such as Basbøll (1976, 1986), Braunmüller (1986), Hansen (1986), Heltoft (1986), Henriksen (1986), Larsen (1986), Ahrenberg (1990), Heltoft (1993), and Hansen & Heltoft (1994). Several of these articles appeared in a volume devoted solely to a discussion of Diderichsen's system (Heltoft and Andersen 1986).

Diderichsen's basic chart for the structure of Danish main clauses appears in slightly different forms, depending on what source one consults. The following are some of the variants:

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | S/A | | v | s | a | V | S | A | | (Diderichsen 1976:162) |
| | F/A | | v | s | a | V | S | Av | A | (Diderichsen 1972:68) |
| C | F | | v | n | a | V | N | A | | (Koefoed 1967:38) |
| k | F | | v | n | a | V | N | A | | (Hansen 1980:49) |





Observe that Koefoed (1967) and Hansen (1980) use nearly identical systems. The only difference is that Koefoed's 'C' stands for the English term, 'Conjunction', whereas Hansen's 'k' stands for the equivalent Danish term, 'konjunktion'. In this paper I shall use Koefoed's English labels. These can be briefly defined as follows:

| | | |
|---|---|---|
| C | = | conjunction |
| F | = | front or fundamental position |
| v | = | verb (finite) |
| n | = | nominal (subject) |
| a | = | adverbial(s) |
| V | = | verb(s) (non-finite) |
| N | = | nominal(s) (such as object(s)) |
| A | = | adverbial(s) |

Ignoring the initial slot ('C'), for conjunctions, Diderichsen's basic system for describing the syntax of Danish main clauses is: FvnaVNA. The 'F' field is a catch-all which encompasses any constituent (including the subject) which precedes the finite verb. Here are some examples of how a variety of Danish sentences would be handled in Diderichsen's system:

| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| 1 | Jeg | har | | | spist | to æg. | |
| 2 | Han | kan | | ikke | læse. | | |
| 3 | Hvad | laver | du? | | | | |
| 4 | Hvorfor | tog | du | | | min bog | i går? |
| 5 | I morgen | kommer | min far. | | | | |
| 6 | På landet | kan | man | stadig | finde | grise. | |
| 7 | | Har | du | | set | filmen? | |
| 8 | | Skriver | han | | | | hurtigt? |

### 2.1 *Major strengths of Diderichsen's system*

One of the major strengths of Diderichsen's system is that it captures the fact that in Danish main clauses the finite verb ('v') typically occupies the 'second' slot in the clause. It thus follows the subject (as in examples

1 and 2), an interrogative or *hv*-word (3, 4), or an opening adverbial (5, 6). All these 'openers' fall into the 'Fundamental' or 'Front' position, 'F', allowing 'v' to be second.

It also recognizes that, in Danish, the FINITE verb, even when it is the main verb, belongs at 'v' and not at 'V' (compare examples 3, 4, 5, and 8 with 1, 2, 6, and 7). As a corollary, it follows (correctly, for Danish) that 'V' is the domain of the NON-FINITE verb(s). As we shall see, this important insight into the structure of Danish also proves to be the major stumbling block we encounter when we try to apply Diderichsen's system to e.g. English.

### 2.2 *Major weaknesses of Diderichsen's system*

In my view, Diderichsen's system, useful as it is for the description of Danish syntax, has a number of weaknesses. I would like to single out four of these for comment.

One drawback is that it fails to distinguish between form and function. In fact, it employs what are fundamentally FORM labels to classify units which are basically FUNCTIONS. Thus:

- 'n' is typically the SUBJECT
- 'N' is typically the OBJECT or the COMPLEMENT
- 'a' is basically an ADVERBIAL (not an adverb); That is, it includes:
  preposition groups (*fra min morfar*) and
  adverb groups (*meget langsomt*),
  as well as adverbs (*hurtigt*)
- 'v' and 'V' are really parts of a single constituent, the PREDICATOR.

Secondly, Diderichsen's system fails to identify discontinuities. The most obvious example is the failure to link up 'v' and 'V' as members of the same constituent. Note that we cannot try to defend Diderichsen by saying that such a relationship is indeed established by means of his use of the same letter (a lower case 'v' and an upper case 'V'). Such an argument would lead to the false conclusion that 'n' and 'N' also form a single constituent, and that 'a' and 'A' do so as well.

Other examples of discontinuities which are ignored in the system involve the results of the 'movement' into F of elements of a larger constituent. One of the most common type of example involves discontinuous preposition groups functioning as A:





| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| 9 | *Hvad* | tænker | du | | | | *på?* |
| 10 | *Hvor* | kommer | han | | | | *fra?* |
| 11 | *Hvem* | har | hun | | skrevet | | *til?* |

Thirdly, the very useful device of adding an initial field, 'F', nonetheless introduces an extra illogical element to the string of categories. F is neither a form nor a function. Rather, it is a purely positional slot, meaning 'first in the sentence/clause', or 'before *v*'.

Fourthly, Diderichsen's system has no 'eraser'. This is another way of saying that it does not register constituent 'movement'; that is, it has no principled way of preventing double entries. Without an 'eraser', Diderichsen's system would appear to allow such nonsense strings as:

| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| 12 | *Han* | kan | *han* | ikke | komme | | nu |
| 13 | *Aldrig* | har | jeg | *aldrig* | læst | bogen | |
| 14 | *Læse* | kan | han | ikke | *læse* | | |

## 3. *Early attempts to apply Diderichsen's model to English*

As noted by Koefoed (1967:26), Diderichsen himself did not probe too deeply into English sentence structure. Koefoed points out that in the posthumous collection of articles (*Helhed og struktur*, 1966) we find a suggestion from Diderichsen that the Danish 'vna' pattern might be replaced by 'nva' or 'nav', to accommodate the structure of English; but whether this means that Diderichsen had one English pattern in mind, or two, it is hard to say.

Koefoed (1967:26-30, 46-49) offers several interesting and quite astute observations on the similarities and differences between English and Danish. He prefaces his analyses with the following remark (1967:26):

> In English the analysis seems to be more complicated. I have reached the (preliminary) conclusion that one must reckon with two parallel, fully developed and living (generative) structures.

The two structures which Koefoed proposes for English are FvnaVNA and FnvaVNA. But Koefoed readily admits that there are problems in assigning English sentences to the one pattern or the other. In many cases, a given English sentence will fit both patterns:

| F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|
| He | has | | not | visited | Mary | yet |

| F | n | v | a | V | N | A |
|---|---|---|---|---|---|---|
| | He | has | not | visited | Mary | yet |

Furthermore, certain very common sentences cause problems for both patterns: *He always leaves his books here.*

Koefoed thus feels obligated to 'extend' his second pattern to encompass three subtypes, the result being (1967:46-48) FOUR DIFFERENT PATTERNS for English main clauses.

An attempt to design a single pattern for English was offered in 1961 by Yngve Olsson (*On the syntax of the English verb*), but I agree with Koefoed (1967:26) that Olsson's system appears to be 'unnecessarily complicated'. His system contains 23 slots, including 4 verb positions. It also mixes levels, listing group structure (that is, modifiers and heads) with clause structure.

In 1977 Dienhart, Hartvigson and Kvistgaard Jakobsen published a small book illustrating how they had adapted Diderichsen's system in the teaching of English syntax at Odense University. Their model, which employed 13 slots, rectified the form vs. function conflict by using primarily function labels for the slots. But they retained a 'joker' slot as the first position (labelling it 'X'), and employed a general cover term, 'K' (for 'komplement'), for direct objects, indirect objects and object complements. This model was gradually converted into a clear form/function system by 1984, though as it evolved it gradually abandoned any typological claims. The system in its present form can be found in Bache, Davenport, Dienhart and Larsen (1993).

It is this system, which I shall refer to as the Odense system, that will now be compared with Diderichsen's typological model. But first we must make one major adjustment in Diderichsen's model when we use it for commenting on English (rather than Danish) syntax.





## 4. *A major difference between Danish and English: the nature of 'v'*

Previous attempts to compare Danish and English, using Diderichsen's model, have suffered (in my opinion) from one major stumbling block. This involves Diderichsen's definition of 'v' (and, consequently, of 'V'), and the strong mental grip that this definition has had on users of Diderichsen's model – when it is applied to other languages.

I wish now to argue that 'v' and 'V' have to be REDEFINED for English, and that we cannot simply take over the (quite reasonable) definitions of these two terms which are provided by Diderichsen for Danish.

The most basic difference between English and Danish, in my view, centers on the nature and consequent treatment of the FINITE MAIN VERB. In Diderichsen's model for Danish, all finite verbs – be they auxiliary or full (main) verbs – are treated as 'v'. As I said earlier, I feel that this is one of Diderichsen's major insights into the structure of Danish.

In English, however, I believe there is strong evidence that 'v' involves only finite AUXILIARIES (and finite main verbs in the relatively rare cases of full inversion), whereas 'V' is the domain of the MAIN VERB, be it finite or non-finite. Koefoed (1967:28) touched on this possibility, when he argued that one is

> forced to place the finite form in non-compound tenses in the same position as the infinite form in section III, viz. V.

One of his four patterns (Pattern IIB, 1967:48) incorporates this claim (by placing 'v' and 'V' in the same slot).

What I would now like to do is move this observation out of the shadows of what one might call 'subtypology' and into the broad daylight of a major typological distinction.

The basic argument for making this distinction between Danish and English rests on the behavior of certain ADVERBS. We can, in fact, make use of Diderichsen's own 'a' test – that is, the test involving a typical adverb in the (lower case) 'a' portion of his chart. A good diagnostic adverb is the word *aldrig* in Danish, and the corresponding *never* in English. Consider the following two sentences and my proposal for the analysis of the English one:

| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| Dan. | Han | læser | | aldrig | | bøger | |
| Eng. | | | He | never | reads | books | |

DANISH: Since *aldrig* marks the end of the 'vna' section, and *læser* precedes *aldrig*, it follows, according to Diderichsen, that *læser* is here an instance of 'v' and not of 'V'.

ENGLISH: But by the same token, it must follow that in English *reads* is an instance of 'V' and not of 'v', since it comes after the adverb, *never* (the construction, **He reads never books*, being ungrammatical).

This redefinition of 'v' and 'V' (for English) may look like a minor change, but it has far-reaching consequences. Let us take a closer look at the structure of these two sentences:

| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| Dan. | Han | læser | | aldrig | | bøger | |
| Eng. | | | He | never | reads | books | |

The DANISH analysis:

a) The subject (Han) has been 'moved' to 'F', so this is a kind of 'inversion' (similar, in theory, to e.g. *Aldrig har han læst bøger*).

b) Therefore, there is no 'n' in the Danish sentence.

c) There is a 'v' but no 'V'.

The ENGLISH analysis:

a) No movement of the subject has taken place, so this is NOT a kind of 'inversion'.

b) Therefore, there is indeed an 'n'. The subject is in its basic position.

c) The main verb, though finite, is at 'V' and NOT at 'v'. There is no 'v' in the English sentence.

So we see that a simple declarative sentence of this type is treated quite differently in the two languages – despite the fact that (superficially) they appear to have nearly the same structure.





Although it might appear that 'only' the position of the adverb differs, yet the two structural analyses vary considerably:

In Danish: FvaN
In English: naVN

We are ready, now, to examine how other types of English sentences fit into Diderichsen's FvnaVNA schema – once we accept the RE-DEFINITION of 'v' and 'V'.

What we will discover is that Diderichsen's model can (now) comfortably accommodate a wide variety of English sentence types – just as it accommodated the sentence, *He never reads books.*

But in one sense, this is a rather misleading result. Diderichsen's system is a very flexible one. In fact, its very flexibility may be a hindrance in typological comparisons of this type. After all, it is one thing for an English sentence to be placed in Diderichsen's model. It is quite another (as we have just seen) to compare its placement in that system with the placement of (seemingly) equivalent Danish sentences.

## 5. *The Odense system for English incorporated in Diderichsen's model*

As intimated above, the Odense system makes a clear and consistent distinction between form and function. The basic form labels are: cl (clause), g (group), cu (compound unit), plus labels for 11 word classes: n (noun), v (verb), etc. For our comparisons with Diderichsen, however, we will need only the function labels. The five basic functions are:

S Subject
P Predicator
O Object
A Adverbial
C Complement

When it is necessary to be more specific, the labels S, O, and C can be further specified as follows:

Sp Provisional Subject
Sr Real Subject
Od Direct Object
Oi Indirect Object

Op Provisional Object
Or Real Object
Cs Subject Complement
Co Object Complement

Conjunctions can be either CO (Co-ordinator) or SUB (Subordinator). Functions are given in capital letters, forms in small letters. In the Odense system every constituent is given both a function and a form label, separated by a colon. Thus, the simple sentence, *Susan's mother will buy her a new dress*, would be analyzed as S:g P:g Oi:pro Od:g.

### *5.1 Seven basic patterns*

Using function labels alone, we can set up seven basic patterns for English clauses. These can be mapped onto Diderichsen's model with no difficulty, providing we bear in mind the redefinition of 'v' and 'V'. The results of this mapping are supplied in Table 1.

Table 1. Seven basic patterns:

| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| I | | | S | | P | | |
| II | | | S | | P | | A |
| III | | | S | | P | O | |
| IV | | | S | | P | Cs | |
| V | | | S | | P | Oi Od | |
| VI | | | S | | P | O Co | |
| VII | | | S | | P | O | A |

Sentences illustrating these basic patterns:

| | | |
|---|---|---|
| I. | SP | Nothing happened. |
| II. | SPA | The play may last three hours. |
| III. | SPO | Alice will love the trip. |
| IV. | SPCs | She was uncooperative. |
| V. | SPOiOd | You do me a very great honor. |
| VI. | SPOCo | He has knocked them senseless. |
| VII. | SPOA | That put more flesh on his bones. |





Comments on Table 1:

a) All the constituents are CONTINUOUS in these seven basic patterns.

b) In the same way that S, O, C, and A may be single words or groups of words, so may P (cp. the examples illustrating Types II, III, and VI). In our analysis a predicator group does not get split up into two 'slots' ('v' and 'V') on every occasion – only when the group is discontinuous.

c) S and P occupy the same fixed positions in all seven patterns.

d) Diderichsen's model forces us to treat O and C differently from obligatory A. Both O and C are viewed as instances of 'N', whereas the adverbial (even though it is obligatory) is an instance of A (as in the examples of Types II and VII). There are good reasons (of the valency type) for treating O, C, and obligatory A as members of the same larger 'category'. I shall return to this point below.

### *5.2 Derived patterns*

The basic patterns can easily be 'converted' into derived patterns by 'moving' one or more of the constituents into other slots, as shown in Table 2. These patterns involve FRONTING but do NOT introduce discontinuities:

Table 2. Some derived patterns:

| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| 15 | | P | S | | | C | |
| 16 | O | | S | | P | | |
| 17 | C | | S | | P | | |
| 18 | A | | S | | P | O | |
| 19 | A | P | S | | | | |

Sentences illustrating these derived patterns:

| | | |
|---|---|---|
| 15. | PSC | Was she unhappy? |
| 16. | OSP | What lovely eyes you have! |
| 17. | CSP | How delightful it is! |
| 18. | ASPO | On the shelf she placed an old teapot. |
| 19. | APS | On the shelf stood an old teapot. |

Note that all of these examples of FRONTING can be characterized as involving 'movement to the left of the subject'. That is, the subject acts as a kind of pivot in these 'derivations'.

The next table displays additional derived patterns. These patterns, too, involve FRONTING, but they ALSO introduce discontinuities. The discontinuities are indicated by means of hyphens (e.g. P-...-P).

Table 3. Some additional derived patterns:

| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| 20 | | P- | S | | -P | | |
| 21 | A | P- | S | | -P | | |
| 22 | O | P- | S | | -P | | |
| 23 | C- | P | S | | | -C | |
| 24 | A- | P- | S | | -P | O | -A |

Sentences illustrating these derived patterns (discontinuities are shown in italics):

20. P- S -P — *Have* your friends *arrived*?
21. A P- S -P — How long *will* the play *last*?
22. O P- S -P — What *are* you *doing*?
23. C- P S -C — *So nervous* were the guards *that they accidently shot the two women.*

The next sentence has two discontinuities:

24. A- P- S -P O -A — What shelf *did* you *put* the book on?

Note once again that the subject (S) functions as a pivot around which the other constituents appear to 'move'.

The derived patterns in Tables 2 and 3 all involved FRONTING, which can be seen (primarily) as movement to the left of the subject. But the subject, too, can move. Since it already occupies the left-most position in our basic patterns, obviously it cannot move (further) left. Consequently, it must move to the right. Such a move is termed EXTRAPOSITION. To accommodate it we do indeed need to create an 'extra' position (which I shall tentatively label 'X'). Table 4 displays the resulting pattern.





Table 4. Derived patterns involving EXTRAPOSITION:

| | F | v | n | a | V | N | A | X |
|---|---|---|---|---|---|---|---|---|
| 25 | | | Sp | | P | | | Sr |
| 26 | | | Sp | | P | O | | Sr |
| 27 | | | Sp | | P | Cs | | Sr |
| 28 | | | Sp | | P | O Co | | Sr |
| 29 | | | Sp | | P | O | A | Sr |

Sentences illustrating extraposition:

25. Sp P Sr — It seems *that he won't be coming.*
26. Sp P O Sr — It surprised me *that she was late.*
27. Sp P Cs Sr — It is odd *that you should say that.*
28. Sp P O Co Sr — It made him angry *to think of it.*
29. Sp P O A Sr — It put him in a bad mood *to hear about it.*

Comments on EXTRAPOSITION:

a) When the subject moves to the right, it typically moves all the way to the right, and its original place in the pattern is held by a 'provisional' subject (Sp).

b) The Sp slot is filled by the pronoun *it* in cases involving extraposition. (Sp can also be filled by *there* in English – as in *There was no one at home* – but this type of construction does not involve extraposition.)

c) The extraposed (or 'real') subject, Sr, is typically a subordinate clause, either finite (as in examples 25, 26, 27) or non-finite (as in examples 28, 29).

d) Observe that most of the seven basic sentence patterns can give rise to a derived pattern with an extraposed subject.

An OBJECT, too, can undergo 'extraposition', although the rightward movement of an object is obviously relatively limited compared to the movement of a subject, since the object is already quite far right in the basic patterns. But we do find derived patterns such as the following:

| | F | v | n | a | V | N | A | X |
|---|---|---|---|---|---|---|---|---|
| 30 | | | S | | P | Op | | Or |
| 31 | | | S | | P | Op | A | Or |

Sentences illustrating extraposition of the object:

30. S P Op Or — I take it *that he will be late.*
31. S P Op A Or — We have it on good authority *that the money has been recovered.*

Note that, as in the case of the extraposed subject, the original position of the object is occupied by the pronoun *it*. By analogy we term this the 'provisional object' and label it Op. The 'real object' is labelled Or. The fact that an adverbial can intervene between Op and Or (as in sentence 31), leads me to put Or in 'X' rather than in 'N'. This is the reason for my claim that this, too, is extraposition.

The following example is quite remarkable in that it shows extraposition of the Subject in a subordinate clause, and extraposition of the Object in the main clause:

32. {True though IT may be *that we no longer laugh at the blind, or the deaf and dumb, or hunchbacks*}, yet many of us may still find IT necessary at times *to suppress an urge to smile in the presence of spastics, stutterers, people with squints or cleft palates.*

(G. B. Milner, 'Homo ridens – towards a semiotic theory of humour and laughter', *Semiotica* 5 (1972), p. 25)

## 6. *A new typological model: the C-model*

Diderichsen's model for Danish and the Odense system for English represent two different types of devices. The former is basically a typological model for Danish sentences, whereas the latter represents a technique for labelling the constituents of any given sentence. I have shown, however, that by redefining 'v' and 'V' for English, Diderichsen's typology model can accommodate the various basic and derived syntactic patterns of English as described by the Odense system. But the question to be asked now is what have we gained by performing this operation?

I have argued that although Diderichsen's model possesses some good features, it nonetheless suffers from several weaknesses. These include: a) an inconsistent treatment of form and function, b) the lack of





a mechanism for marking discontinuities, c) failure to distinguish basic structures from derived ones, and d) an inability to block double entries.

Another glance at Tables 1, 2, 3, and 4 will reveal that some of the requisite information needed to overcome these inadequacies is supplied by the ENTRIES in the Tables rather than by Diderichsen's labels at the top of the Tables. This suggests a direction we can take in order to meet the objections enumerated above. The Odense system supplies us with a) a means of consistently distinguishing between form and function, and b) a mechanism for marking discontinuities (the hyphen convention). What we need to add now is some device for c) distinguishing basic structures from derived ones, and d) preventing 'double' entries. In examining how the Odense system can be accommodated by Diderichsen's model, we have already sensed how these last two aspects can be handled. The basic patterns are those in which NO DISCONTINUITIES appear and in which the constituents are in their basic SPO/C/A positions. The derived patterns are those in which some sort of 'movement' occurs, often creating one or more discontinuities. So we also need to introduce the concept of 'Movement' into the model. The result is the following C-model for English:

| Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|

Advantages of this model:

1. Its categories are consistent: only function labels are used.
2. Discontinuities are clearly marked: they are indicated by means of the hyphen convention.
3. Basic patterns are easily identified: they are those with no entry in any of the 'Move' columns. By the same token, derived patterns are those in which at least one entry appears in a 'Move' column.
4. Double entries are avoided, since a constituent cannot both move and stay in its original position. Thus a Direct Object (Od) will either be in its basic position or it will appear in the 'Move O/C/A' position.

The central role that the concept of CONTINUITY plays in this model leads me to call it the continuity model, or C-MODEL, for short. All the basic patterns represent sentences in which every constituent is

continuous. Any time there is a discontinuity, the pattern is – by definition – a derived one. Note, however, that discontinuity is a sufficient but not a necessary condition for derived status. The necessary condition for us to have a derived pattern is that MOVEMENT has taken place. Movement may create discontinuity (typically, but not necessarily, in the Predicator), but it does not have to do so (hence my use of (-) in the tables below). In order to illustrate all these points, let us 'revisit' Tables 1, 2 , 3, and 4, this time mapping the selected sentences onto our new C-model. We shall start with the basic patterns.

Table 1 Revisited. The seven basic patterns displayed in the C-model:

| | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|
| I | | | S | P | | |
| II | | | S | P | A | |
| III | | | S | P | O | |
| IV | | | S | P | Cs | |
| V | | | S | P | Oi Od | |
| VI | | | S | P | O Co | |
| VII | | | S | P | O A | |

Note that these patterns are all defined as basic BY THE MODEL ITSELF – there are no constituents in any of the 'Move' columns.

Furthermore, the basic 'SPArg' pattern supports the general claim that English is an SVO (that is, SPO or SPArg) language.

But what is meant by 'Arg'? The label stands for 'Argument'. It is the slot for objects (Oi as well as Od) and complements (Cs and Co). In this sense it corresponds to Diderichsen's 'N' slot. However, 'Arg' also includes obligatory adverbials. All three of these constituents (O, C, A) function as arguments ('Arg') of the main verb, and hence are part of the valency of that verb. As the patterns in Table 1 (Revisited) suggest, there are rather heavy restrictions on the number and order of constituents in the Argument column.

NUMBER: The number of arguments in an English clause ranges from zero to two. It is not possible for an English verb to have more than two arguments. This provides us with the following subdivision of our seven basic patterns:





| | |
|---|---|
| Zero | SP |
| One | SPO, SPC, SPA |
| Two | SPOiOd, SPOCo, SPOA. |

ORDER: If there are two arguments, the first one of these is O. This gives us the sequences OC and OA (and interprets CO and AO as marked). Also, if there is an indirect object (Oi) it precedes the direct object (Od).

Admittedly, it is possible to find examples of e.g. SPCoO, where the O follows the C, but this is a stylistic and communicative device involving constituent 'weight' (that is, length). Such constructions are rather marked:

33. The court pronounced *not guilty* the woman who had been charged with the murder.

The C-model also handles the derived patterns without any difficulties. Consider first Table 2 (Revisited), which displays derived patterns created by fronting – with no discontinuities.

Table 2 Revisited. Derived patterns displayed in the C-model:

| | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|
| 15 | | P | S | | C | |
| 16 | O | | S | P | | |
| 17 | C | | S | P | | |
| 18 | A | | S | P | O | |
| 19 | A | P | S | | | |

Observe how symmetrical the derived patterns are – as reflected in the model:

a) P has its basic position immediately to the right of S. When it moves, it moves immediately to the left of S.

b) The Arguments (O/C/A) have their basic position two slots to the right of S. When they move, they move two slots to the left of S. Note that ANY ONE of them may move, but NO MORE THAN ONE may do so.

What this correctly predicts about the structure of English is that whenever P and an Argument shift left, the P-move is shorter than the Arg-move. We cannot have e.g. **Stood on the shelf an old teapot* (PAS).

Constituent movement may also, and commonly does, create discontinuities, as we have seen. The next table shows that the new model accommodates these, too, without difficulty.

Table 3 Revisited. Some additional derived patterns displayed in the C-model:

| | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|
| 20 | | P- | S | -P | | |
| 21 | A | P- | S | -P | | |
| 22 | O | P- | S | -P | | |
| 23 | C- | P | S | | -C | |
| 24 | A- | P- | S | -P | O -A | |

Note once again that in cases of a 'double' move (that is, P and an Arg), the distance of the P-move is shorter than that of the Arg-move. What was true in the case of the fronting of continuous constituents is thus equally true in the case of fronting which creates discontinuous constituents.

This is even more evident in this Table, where the discontinuous predicator (P-...-P) is seen to form a kind of enclosure for the subject (S). It should be pointed out, however that a derived pattern such as the following would seem to offer problems, though explanations for the behavior of P can be constructed:

34. Standing *on the table* was a bouquet of flowers.

We saw earlier that constituents may move right as well as left, resulting typically in what is called 'extraposition'. The next table shows that this poses no problems for the C-model.





Table 4 Revisited. Derived patterns involving EXTRAPOSITION in the C-model:

| | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|
| 25 | | | Sp | P | | Sr |
| 26 | | | Sp | P | O | Sr |
| 27 | | | Sp | P | Cs | Sr |
| 28 | | | Sp | P | O Co | Sr |
| 29 | | | Sp | P | O A | Sr |
| | | | | | | |
| 30 | | | S | P | Op | Or |
| 31 | | | S | P | Op A | Or |

The first five patterns show extraposed subjects (Sr). For the sake of comparison, I have appended the two examples of extraposed objects at the end of the Table.

We have now seen that the C-model comfortably accommodates all the examples of basic and derived structures that we have examined so far. We must bear in mind, however, that we have limited ourselves to MAIN clauses (more specifically, to main clauses containing only valency-determining arguments). It is time now to turn our attention to SUBORDINATE clauses in English.

### *6.1 The C-model extended to subordinate clauses*

The question we will now address is this: how can we deal with English subordinate clauses in terms of our new model? Let us start by considering the following English sentences:

35. He lost his key.
36. He said *he lost his key.*
37. He said *that he lost his key.*
38. He could not get in *because he lost his key.*
39. What would he do *if he lost his key?*

We see that although a main clause (35) can sometimes be subordinated without any mark of subordination at all (36), it is typical to mark subordination in some fashion (37, 38, 39).

In English, *that* functions as the lexically most empty subordinating conjunction (and hence can often be dropped). Other subordinators (such as *because* and *if*) have semantic content of their own, and provide a logical connection between the main clause and the subordinate clause.

In the Odense system, as I mentioned earlier, the subordinator is treated as a function and labelled SUB. It is viewed as part of the subordinate clause itself. Since the subordinator is typically the first constituent in the subordinate clause, we can accommodate it by adding an extra slot at the beginning of the new model:

| SUB | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|

Let us see now if we can apply this model to subordinate clauses – with no further changes. Such an idea may sound surprising at first, since the general sense conveyed by many theories and grammars of natural languages is that the structure of subordinate clauses is somehow more complicated than that of main clauses. We will soon discover that THE EXACT OPPOSITE IS THE CASE. Subordinate clause structure is typically SIMPLER (that is, more basic) than main clause structure. We shall see that this fact is both captured and highlighted by our C-model.

Let us begin the comparison between main and subordinate clauses by ascertaining first that subordination does not complicate any of our seven basic patterns. This can be established by returning to the sentences in Table 1 and putting them into subordinate clauses (using the Subordinator, *that*). The result is Table 5.

Table 5. The seven basic patterns as seen in subordinate clauses:

| | SUB | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 40 | SUB | | | S | P | | |
| 41 | SUB | | | S | P | A | |
| 42 | SUB | | | S | P | O | |
| 43 | SUB | | | S | P | Cs | |
| 44 | SUB | | | S | P | Oi Od | |
| 45 | SUB | | | S | P | O Co | |
| 46 | SUB | | | S | P | O A | |





Examples:

40. I assume *that nothing happened.*
41. I suspect *that the play may last three hours.*
42. I am sure *that Alice will love the trip.*
43. I was informed *that she was uncooperative.*
44. You know *that you do me a very great honor.*
45. I fear *that he has knocked them senseless.*
46. I believe *that that put more flesh on his bones.*

We see that the seven basic patterns are UNCHANGED in subordinate clauses. The only difference in structure is the addition of the subordinator, SUB.

One might be tempted to argue that even though the BASIC patterns remain basic in subordinate clauses, something more complicated must surely be involved when DERIVED structures are mapped onto subordinate clauses. But this is not the case. We can easily illustrate that this mapping SIMPLIFIES clause structure rather than complicating it.

A good test of this claim can be made by looking at the structure of INTERROGATIVE CLAUSES – one of the most common types of derived structure in main clauses. Interrogation typically creates a discontinuous Predicator (P-...-P) by moving part of P to the left of the Subject. It may also involve movement of one of the Arguments. Consider the following sentences from our earlier Table 3 (repeated here as 47, 48, and 49):

47. *Have* your friends *arrived*? (P- S -P)
48. How long *will* the play *last*? (A P- S -P)
49. What *are* you *doing*? (O P- S -P)

When such sentences are converted into the corresponding subordinate clauses, the Predicators are NOT DISCONTINUOUS:

50. I wonder *if your friends <u>have arrived</u>.*
51. I have no idea *how long the play <u>will last</u>.*
52. I am curious to know *what you <u>are doing</u>.*

The following two tables provide a visual picture of the structure of these two types of clauses. It is obvious that the structure of the subordinate clause (Table 6b) is simpler than that of the main clause (Table 6a). There is less movement and there are no discontinuities:

Table 6a. Interrogative main clauses:

| | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|
| 47 | | P- | S | -P | | |
| 48 | A | P- | S | -P | | |
| 49 | O | P- | S | -P | | |

Table 6b. Interrogative subordinate clauses:

| | SUB | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 50 | SUB | | | S | P | | |
| 51 | | A | | S | P | | |
| 52 | | O | | S | P | | |

What we learn from this comparison is the following: if (as seems reasonable) we measure basicness in terms of amount of discontinuity and 'movement', then:

SUBORDINATE CLAUSE STRUCTURE IS MORE BASIC IN ENGLISH THAN MAIN CLAUSE STRUCTURE.

When we recall that our model was developed by taking main clause structure as our starting point, it appears that we have been quite fortunate in simultaneously uncovering the 'correct' structure of English subordinate clauses.

The explanation for this good fortune is that we started with the seven basic main clause patterns, all of which contain only continuous and 'unmoved' constituents. Since these involve no discontinuities and no movement, we see now that we were actually dealing with clauses which mirrored subordinate clause structure (compare Table 1 (Revisited) with Table 5).

### *6.2 One model for main and subordinate clauses*

We now have a general picture of the structure of English main and subordinate clauses – and the model which I have proposed for capturing the relationships between basic and derived structures:





Main clauses:

| Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|

Subordinate clauses:

| SUB | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|

It is obvious that the basic difference between the two variants is the presence of the SUB slot in the subordinate clause pattern.

However, it must also be borne in mind that the 'Move P' column is rather dormant in subordinate clauses (since P is basically continuous in English subordinate clauses). Consequently, we could consider simplifying the second pattern by taking out the 'Move P' column altogether:

| SUB | Move O/C/A(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|

I choose not to do this, however – for two reasons. One is theoretical, the other is practical:

1) There are a few cases where we do indeed find examples of Predicator movement in subordinate clauses:

   He knew *that even more likely <u>was</u> the possibility that he would not be invited at all.*

   *<u>Had</u> it been possible to leave Russia,* he would certainly have done so.

2. It is convenient to operate with a single form of the C-model, and we can easily keep in mind that the 'Move P' column is less frequently activated in subordinate clauses than in main clauses.

For these reasons, therefore, let us combine the two patterns by putting SUB in parentheses to indicate that it may or may not be present. There

will, of course, be no SUB in main clauses, and in some cases (as we have seen) SUB will also be absent in subordinate clauses.

The C-MODEL for English main and subordinate clauses:

| (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|

I have now sketched the treatment of a wide range of English clause structures. These have included the seven basic structures and a variety of derived structures – in main clauses as well as in subordinate clauses.

The result has been the development of a SINGLE MODEL for English clause structure which is able to encompass all the clause types examined so far.

However, I have limited myself to clauses in which optional constituents (mainly adverbial in function) do not appear. That is, I have examined only those clause types in which the constituents play a role in the subcategorization of the verb – the so-called valency-determining constituents (Arg). This approach is theoretically defensible, I believe, since the optional constituents can now be viewed as being placed either BETWEEN or WITHIN given slots in the model.

Armed with this new model, the C-model, I would like now to reconsider the structure of Danish, and then to have a look at German. We shall discover that this simple model allows us to make interesting observations about the structure of each of these Germanic languages, while at the same time providing us with a tool for highlighting some of their similarities and differences.

## *7. A new look at Danish*

Returning for a moment to Diderichsen's system of analysis, let us recall that Diderichsen found it necessary to propose two different patterns for Danish clause structure – one for MAIN clauses and another for SUBORDINATE clauses. His formula for subordinate clauses differs in two ways from his formula for main clauses:

1) in place of 'F' we find 'C' (for the subordinating conjunction), and
2) 'v n a ' becomes 'n a v '.

This gives rise to the two basic formulas:





Main clauses: FvnaVNA
Subordinate clauses: CnavVNA.

There can be no quibble with the introduction of a new slot for a subordinating conjunction, and certainly any analyst must come up with some way to classify the differences in such corresponding pairs as:

Main clause: *Han kan ikke læse.* (FvaV)
Subordinate clause: Jeg ved *at han ikke kan læse.* (CnavV)

Nonetheless, the general result is that many clauses which seem to have the same structure end up being assigned two quite different structures by Diderichsen's model, depending on whether we are dealing with a main clause or a subordinate clause. This can be seen by considering the following simple example:

Main clause: *Hun elsker Lars.*
Subordinate clause: Jeg ved *at hun elsker Lars.*

The clause, *hun elsker Lars*, is assigned two different structures in Diderichsen's system, depending on whether it appears as a main clause or as a subordinate clause:

Main clause:

| F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|
| Hun | elsker | | | | Lars | |

Subordinate clause:

| C | n | a | v | V | N | A |
|---|---|---|---|---|---|---|
| at | hun | | elsker | | Lars | |

The basic difference, as we can see, is that the subject is 'moved' out of the 'n' field into the 'F' field in the main clause, whereas it 'remains' in the 'n' field in the subordinate clause. This difference in structural analysis is not limited to isolated examples. We find it wherever the only 'move' is the (rather artificial) one of 'n' into 'F', as dictated by Diderichsen's system for declarative main clauses:

Table 7a. More examples of main clauses in Diderichsen's model:

| | F | v | n | a | V | N | A |
|---|---|---|---|---|---|---|---|
| 53 | Lars | forsvandt | | | | | |
| 54 | Peter | blev | | | | flov | |
| 55 | Han | læste | | | | bogen | |
| 56 | Vi | tog | | | | | hjem |
| 57 | Jeg | fortalte | | | | min bror + historien | |
| 58 | Det | gør | | | | katten + bange | |

Table 7b. Corresponding subordinate clauses in Diderichsen's model:

| C | n | a | v | V | N | A |
|---|---|---|---|---|---|---|
| at | Lars | | forsvandt | | | |
| om | Peter | | blev | | flov | |
| mens | han | | læste | | bogen | |
| hvis | vi | | tog | | | hjem |
| da | jeg | | fortalte | | min bror + historien | |
| fordi | det | | gør | | katten + bange | |

A comparison of the structures in Tables 7a and 7b leads us, I believe, to add one more item to the list of weaknesses inherent in Diderichsen's model: the model forces us to assign different structures to a number of clauses that certainly look the same – the only reason for the difference being that one constitutes a main clause while the other constitutes a subordinate clause.

Leaving Diderichsen's model aside now, let us try instead to apply the new C-model to Danish. We can begin by seeing how far we can get with a direct application of the English C-model to Danish sentences. Our first step is to examine the structure of the Danish sentences in Tables 7a and 7b. We have just seen that these involve clauses which look alike but which, in Diderichsen's model, receive different structural analyses depending on whether we are dealing with a main clause or a





subordinate clause. THE C-MODEL ASSIGNS THEM IDENTICAL STRUCTURES:

Table 7 (a and b) Revisited. The C-model applied to Danish clauses:

| | (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 59 | (SUB) | | | S | P | | |
| 60 | (SUB) | | | S | P | Cs | |
| 61 | (SUB) | | | S | P | O | |
| 62 | (SUB) | | | S | P | A | |
| 63 | (SUB) | | | S | P | Oi Od | |
| 64 | (SUB) | | | S | P | O Co | |

Examples (the italicized clauses receive the same analysis whether they stand alone as main clauses or are embedded as subordinate clauses):

59. Hvornår var det at *Lars forsvandt?*
60. Ved du om *Peter blev flov?*
61. Hvad gjorde du mens *han læste bogen?*
62. Hvad ville der ske hvis *vi tog hjem?*
63. Hun blev sur da *jeg fortalte min bror historien.*
64. Du må ikke råbe fordi *det gør katten bange.*

We see that the C-model handles these particular sentences without any problem. In fact, a number of positive results appear here:

a) The English C-model can be applied to these Danish examples with no modification whatever.

b) Structures that appear to be identical are treated as identical. That is, one and the same model can handle main and subordinate clauses in Danish – as was the case in English.

c) All these Danish sentences display basic clause structure – as defined by the model itself: there is no movement and there are no discontinuities.

### *7.1 The C-model treatment of complex Predicators in Danish*

So far we have only examined Danish clauses in which the Predicator (P) consists of a single verb. The situation gets more complicated and more

interesting when we extend the data to include complex Predicators (that is, multi-word verbal groups). If the complex Predicators are continuous, they clearly offer no problem for the C-model – as the next examples indicate:

| | (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 65 | (SUB) | | | S | P | | |
| 66 | (SUB) | | | S | P | O | |
| 67 | (SUB) | | | S | P | Oi Od | |

Sample sentences:

65. De græd fordi *Lars var forsvundet.*
66. Hvad gjorde han efter *han havde læst bogen?*
67. Hun bliver glad når *jeg har fortalt hende historien.*

Note that once again the treatment is the same whether we are dealing with main clauses or subordinate clauses.

### *7.1.1 The treatment of DISCONTINUOUS Predicators in Danish*

Let us now consider what happens in Danish when the Predicator is DISCONTINUOUS, as in the following examples:

68. *Kan* hun *tale* russisk?
69. Hvor *har* han *lagt* bogen?
70. Hvor mange øl *har* Peter *købt*?
71. *Er* Jakob *blevet* syg?

While the Predicator is discontinuous in these interrogative main clauses, the corresponding subordinate clauses display a CONTINUOUS Predicator (as was the case in English):

72. Spørg Ingrid {om hun *kan tale* russisk}.
73. Jeg er ligeglad med {hvor han *har lagt* bogen}.
74. Jeg ved ikke {hvor mange øl Peter *har købt*}.
75. Ingen aner {om Jakob *er blevet* syg}.





This is further confirmation of the claim I made earlier: SUBORDINATE CLAUSE STRUCTURE IS TYPICALLY MORE BASIC THAN MAIN CLAUSE STRUCTURE. We see that the claim holds for Danish as well as for English. I propose, therefore, that we treat Danish interrogative clauses just as we treated English ones – the derived pattern is seen in the main clause, while the basic pattern appears in the subordinate clause. This gives us Tables 8a and 8b.

Table 8a. Interrogative main clauses in Danish:

| | (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 68 | | | P- | S | -P | O | |
| 69 | | A | P- | S | -P | O | |
| 70 | | O | P- | S | -P | | |
| 71 | | | P- | S | -P | C | |

Table 8b. Interrogative subordinate clauses in Danish:

| | (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 72 | SUB | | | S | P | O | |
| 73 | | A | | S | P | O | |
| 74 | | O | | S | P | | |
| 75 | SUB | | | S | P | C | |

In Table 8a, part of the Predicator has moved under the process of interrogation, resulting in a discontinuity (P-...-P). In Table 8b, on the other hand, although there may be movement of one of the Arguments (as in 73 and 74), the Predicator does not move. It remains in its basic position, and hence does NOT BECOME DISCONTINUOUS. As was the case in English, the subordinate clause structure is seen to be simpler than the structure in main clauses.

### *7.2 Movement of the finite main verb in Danish*

So far we have not encountered any major differences in clause structure between Danish and English. It is reasonable, therefore, to ask if there ARE any differences. The answer, of course, is yes. Otherwise we would

have had no problems applying Diderichsen's Danish model (weaknesses and all) directly to English.

One of the major differences is that in Danish the Predicator can, and often does, 'move' even if it is not complex – as in the following examples:

76. *Talte* hun russisk?
77. Hvor *lagde* han bogen?
78. Hvor mange øl *købte* Peter?
79. *Blev* Jakob syg?

Such constructions are common in Danish, but not in English. The corresponding English sentences require the addition of a finite 'dummy' auxiliary verb – typically known as '*do*-support':

80. *Did* she speak Russian?
81. Where *did* he lay the book?
82. How many beers *did* Peter buy?
83. *Did* Jakob become ill?

Though the Danish structure is different from the English one, it causes no problems for the C-model, as we can see from the next Table.

Table 9. Movement of the finite main verb in Danish

| | (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 76 | | | P | S | | O | |
| 77 | | A | P | S | | O | |
| 78 | | O | P | S | | | |
| 79 | | | P | S | | C | |

Unlike the corresponding English pattern (with '*do*-support'), the Danish pattern does not, in these examples, display a discontinuous Predicator surrounding the Subject (P- S -P). This is a MAJOR DIFFERENCE in the syntactic structures of Danish and English. But note that it does NOT require any changes in the model. Let us consider how this difference can be accounted for.





### *7.3 Conditions on P-movement: Danish vs. English*

Instead of calling for an alteration of the model, Table 9, in my view, indicates that one major difference between Danish and English is to be found in the conditions on constituent movement. More specifically: Danish and English appear to operate with DIFFERENT CONDITIONS ON P-MOVEMENT.

There are two important differences: one involves WHAT part of the Predicator moves, while the other involves WHEN movement takes place.

#### *7.3.1 Condition 1: what moves?*

The movable part of the Predicator (often termed the 'Operator' in modern English grammars) differs in Danish and English:

DANISH: the Operator corresponds to the finite VERB.
ENGLISH: the Operator corresponds to the finite AUXILIARY.

Observe that this is simply a restatement of the claim I made earlier when modifying Diderichsen's system in order to accommodate English. Using Diderichsen's labels, we simply have two different interpretations of 'v' (and, consequently, of 'V'). Diderichsen's 'v', which corresponds to our 'Operator', is defined in one way for Danish, another way for English.

For the sake of convenience, let us create the label, 'Pop', to refer to the Operator. This convenient shorthand also suggests the behavior of the Operator: it 'pops' up in the Move-P column(s). In Danish, then, Pop-movement involves the finite verb, whereas in English it involves the finite auxiliary.

#### *7.3.2 Condition 2: when does movement take place??*

In Danish, Pop-movement is more readily triggered than in English. In both Danish and English it is triggered in main clauses by 'yes/no questions' and by '*wh*-questions'. But it is also triggered in Danish main clauses by nearly any other fronting operation. This includes the fronting of one of the Arguments (valents of the verb), as well as the placement of an optional adverbial at the front of the clause. This is the insight which Diderichsen captures by placing 'v' immediately after 'F'. Examples of P-movement in Danish with no corresponding P-movement in English are given in Table 10.

Table 10. Examples of movement of the finite verb in Danish:

| | (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 84 | | O | P- | S | -P | | |
| 85 | | C | P- | S | -P | | |
| 86 | | A | P | S | | O | |
| 87 | | Od | P | S | | Oi | |

Sample sentences:

84. De bøger *har* han læst.
85. Fint *skal* det være.
86. På bordet *lagde* han sit visitkort.
87. Bilen *gav* han sin bror.

### *7.4 Extraposition in Danish*

The Subject (S) can move in Danish, as it can in English. It moves into the same Extraposition slot as the English Subject does. The Danish place-holder (Sp) is *det*:

Table 11. Extraposition in Danish:

| | (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|---|
| 88 | | | | Sp | P | C | Sr |
| 89 | | | | Sp | P | O | Sr |
| | | | | | | | |
| 90 | SUB | | | Sp | P | C | Sr |

Sample sentences (Sr is shown in italics):

88. Det er umuligt *at svare på spørgsmålet.*
89. Det overraskede mig a*t han kunne stå på ski.*

Extraposition occurs also in subordinate clauses, as is illustrated by the next example:

90. Han er tavs {fordi det er umuligt *at svare på spørgsmålet*}.





### *7.5 Summary of the results for Danish*

We have seen that the C-model which I proposed for English also accommodates Danish clause structure WITHOUT MODIFICATION. This is true for main clauses as well as for subordinate clauses – at least insofar as basic propositional structure is concerned. Furthermore, as in English, only one model is needed to cover both main and subordinate clauses. Also as in English, subordinate clauses display a structure which is more basic than that of main clauses, in that subordinate clauses show less constituent movement and fewer discontinuities.

The main differences we have encountered between Danish and English can be attributed to conditions on P-movement: namely 1) WHAT moves (that is, the definition of Pop), and 2) WHEN P-movement takes place.

Since the C-model applies without structural modification to Danish, Danish, too, is seen to be an SVO (or better: SPO or SPArg) language.

## *8. The C-model applied to German*

Having seen that it is possible to apply the English C-model to Danish propositional structure without any alterations in the model, the question we can now ask is: How does German fare in comparison with English and Danish?

Let us note first of all that there are many German sentences that appear to be structurally identical to their English and Danish counterparts:

91. Er lachte.
92. Wir lernen Deutsch.
93. Er wohnt in Berlin.
94. Die Freude der Kinder war sehr gross.
95. Konrad erzählte seinem Sohn eine Geschichte.
96. Ich finde sie schön.
97. Er legte das Buch auf den Tisch.

These appear to correspond to the seven basic English patterns of SP, SPO, SPA, SPC, SPOiOd, SPOCo and SPOA, respectively. However, such correspondences give a FALSE impression of the structure of the German language. It is common knowledge that German syntax shows some characteristics that are quite 'strange' from the point of view of

speakers of e.g. English and Danish. No doubt the most salient difference is the BEHAVIOR OF THE GERMAN VERB. Sentences like the following have no direct parallel in either English or Danish:

98. Ich *habe* zwei Bücher *gekauft.*
99. Er *ist* krank *geworden.*

These sentences illustrate a characteristic feature of German clause structure: the clause commonly has a discontinuous Predicator, and part of that Predicator is often found at the end of the clause – sometimes considerably removed from the earlier part of the Predicator. In fact, it is not uncommon to find the whole clause enveloped by the discontinuous Predicator:

100. *Hast* du in Berlin *gewohnt?*
101. *Wird* er seinem Sohn eine Geschichte *erzählen?*

Constructions such as these would appear to pose serious problems for our model. I shall show, however, that our continuity principle allows us to provide a straightforward analysis of the basic features of German syntax. We will, of course, have to modify the model – since German structure is clearly different from English structure – but the modifications are simple and, I believe, enlightening.

### *8.1 Dealing with the discontinuous Predicator in German*

Our continuity principle urges us to view all discontinuities as derived from some more basic pattern. Consequently, we must seek to bring together the elements of the discontinuous German Predicator as part of a basic pattern, and treat the discontinuity itself as the result of 'movement'.

As is the case with English and Danish, German grammar books display a strong tendency to view main clause structure as more basic than subordinate clause structure. Thus we find e.g. Greenfield in his *German Grammar* (1967:58-59) referring to the syntax of main clauses as 'normal order', while subordinate clauses display 'transposed word order'.

Once again, this view distorts the picture by putting things THE WRONG WAY AROUND. As we saw in English and Danish, it is subordinate clause structure which provides us with the most basic syntactic patterns. DISCONTINUITIES that are common in main clause





Predicators DISAPPEAR in German subordinate clauses, just as they do in English and Danish.

Let us consider once again the German examples of main clause discontinuities, but let us now compare them with the corresponding subordinate clause constructions:

Main clauses:

98. Ich *habe* zwei Bücher *gekauft.*
99. Er *ist* krank *geworden.*
100. *Hast* du in Berlin *gewohnt?*
101. *Wird* er seinem Sohn eine Geschichte *erzählen?*

Subordinate clauses:

102. Ich weiß nicht, warum ich zwei Bücher *gekauft habe.*
103. Ich fürchte, daß er krank *geworden ist.*
104. Ich hörte, daß du in Berlin *gewohnt hast.*
105. Ich fragte, ob er seinem Sohn eine Geschichte *erzählen wird.*

Two facts can be observed in these subordinate clauses: a) the Predicator is CONTINUOUS and b) it FOLLOWS the Arguments (O/A/C).

At first glance, the order of the verbs in the continuous German Predicator (examples 102-105) might look odd to English and Danish eyes: the finite auxiliary typically comes AFTER the main verb in German subordinate clauses – rather than in front of it, as in English and Danish.

But this, in fact, follows quite naturally from the general notion of proximity or adjacency: when the Arguments PRECEDE the Predicator (as in German) it is natural for the main verb to PRECEDE the auxiliaries, since this keeps the main verb as close as possible to its Arguments: S *Arg* P ( where P = *main verb* + aux)

The same principle applies, of course, to English and Danish: when the Arguments FOLLOW the Predicator, it is natural for the main verb to FOLLOW the auxiliaries, since (once again) this puts the main verb next to its Arguments: S P (where P = aux + *main verb*) *Arg.*

We see, then, that the basic pattern dictated by German subordinate clauses is the following:

The basic German pattern:

| S | Arg O/C/A | P |
|---|---|---|

When compared with the basic pattern for English and Danish, we see that the major difference is that German is an SOV (or SOP, or SArgP) language, while English and Danish are SVO (or SPO, or SPArg) languages:

The basic English and Danish pattern:

| S | P | Arg O/C/A |
|---|---|---|

In order to handle the DISCONTINUITY of the German Predicator in main clauses, we must now consider where to put the 'Move P' column. In other words, where does the Operator (that is, Pop) move to, when it moves? The answer is a very interesting one. It is provided by the data we have already examined:

98. Ich *habe* zwei Bücher *gekauft.*
99. Er *ist* krank *geworden.*

100. *Hast* du in Berlin *gewohnt*?
101. *Wird* er seinem Sohn eine Geschichte *erzählen*?

The first two examples (98, 99) indicate that we must make room for the Operator immediately to the RIGHT of the Subject (this is typical in German declarative sentences), whereas the last two examples (100, 101) argue for an Operator slot immediately to the LEFT of the Subject (which is typical for interrogative sentences). Clearly, we need TWO SLOTS for the Operator in derived structures in German:

| Move P(-) | S | Move P(-) | Arg O/C/A | P |
|---|---|---|---|---|

This will accommodate the structures of all four of our examples, as the next Table makes clear.





Table 12. The discontinuous Predicator in German main clauses:

| | Move P(-) | S | Move P(-) | Arg O/C/A | P |
|---|---|---|---|---|---|
| 98 | | S | P- | O | -P |
| 99 | | S | P- | C | -P |
| 100 | P- | S | | A | -P |
| 101 | P- | S | | Oi Od | -P |

### *8.2 Argument movement in German*

Although the Predicator is located after the Arguments (O/C/A) in German, and before the Arguments in English and Danish, this does not affect the basic movement of the Arguments themselves. O, C, and A can move to the far left of the clause in German just as they can in English and Danish. The result is that we can also add the 'Move O/C/A' column to the German model – in the same place as it appears in English and Danish:

Table 13. Argument movement in German:

| | Move O/C/A | Move P(-) | S | Move P(-) | Arg O/C/A | P |
|---|---|---|---|---|---|---|
| 106 | O | P- | S | | | -P |
| 107 | C | P- | S | | | -P |
| 108 | A | P | S | | | |
| 109 | Oi | P- | S | | Od | -P |

Examples:

106. *Zwei Bücher* habe ich gekauft.
107. *Sehr schön* ist sie geworden.
108. *Auf dem Tisch* steht eine Vase.
109. *Seinem Sohn* wird er eine Geschichte erzählen.

### *8.3 Extraposition in German*

German, too, allows extraposition. As in English and Danish the Subject can move to the far right of the clause. So we can also add the 'Move S' column to the German model. The 'original' Subject slot is then occupied by *es*:

Table 14. Subject movement in German:

| | Move O/C/A | Move P(-) | S | Move P(-) | Arg O/C/A | P | Move S |
|---|---|---|---|---|---|---|---|
| 110 | | | Sp | P | O | | Sr |
| 111 | | | Sp | P- | O | -P | Sr |

Examples (Sr is shown in italics):

110. Es freut mich, *daß du kommen kannst.*
111. Es hat mich gefreut, *daß du bei mir warst.*

### *8.4 The C-model for German*

The C-model for German has now been determined. As was the case for English and Danish, we can combine the patterns for main clauses and subordinate clauses by inserting an optional SUB as the very first slot:

The German model:

| (SUB) | Move O/C/A | Move P(-) | S | Move P(-) | Arg O/C/A | P | Move S |
|---|---|---|---|---|---|---|---|

## *9. English, Danish, and German compared*

We are now in a position to compare the basic C-models of clause structure for English, Danish, and German. We must, of course, bear in mind that the models do not include slots for the insertion of optional adverbials. Nonetheless, they give us a clear overview of the basic similarities and differences among these three languages, insofar as obligatory clause constituents are concerned.





The English Model:

| (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|

The Danish Model:

| (SUB) | Move O/C/A(-) | Move P(-) | S | P | Arg O/C/A | Move S/O |
|---|---|---|---|---|---|---|

The German Model:

| (SUB) | Move O/C/A | Move P(-) | S | Move P(-) | Arg O/C/A | P | Move S |
|---|---|---|---|---|---|---|---|

We are here reminded that the English and Danish models are IDENTICAL. Recall that the primary distinction between these two languages involved not the relative positions of the slots themselves, but rather the conditions on P-movement.

When the German model is compared with that of English and Danish, we see that the structural differences can be attributed primarily to the basic location of the Predicator (P). In English and Danish the basic position of P is immediately to the right of the Subject (S), and there is then one additional slot for P-movement. In German, however, P is positioned after the Arguments (Arg), and there are two slots for P-movement – one on either side of S.

Note that despite these differences in the behavior of P, all three systems agree in having P-slots on both sides of S. In German both slots involve 'derivation' (Move P), whereas in English and Danish only the slot to the left of S involves 'derivation'.

### *9.1 Conditions on P-movement compared*

Recall that in Danish the Predicator is more mobile than in English. We saw that the movable part of P, namely the Operator (Pop), is the finite verb in Danish, whereas it is the finite auxiliary in English. This distinction is manifested in the free movement of finite main verbs in Danish, where English requires *do*-support.

The extra freedom of Pop in Danish, vis-à-vis English, appears to be directly related to the fact that the Danish verb also moves left (nearly) every time any constituent is placed in front of the Subject. Support for this linkage comes from an examination of Pop in German. The following examples clearly indicate that P-movement in German is more like Danish than like English:

| | |
|---|---|
| German: | Wohnt *er* in Berlin? |
| Danish: | Bor *han* i Berlin? |
| English: | Does *he* live in Berlin? |
| | |
| German: | Wo wohnt *er*? |
| Danish: | Hvor bor *han*? |
| English: | Where does *he* live? |
| | |
| German: | Im Winter wohnt *er* in Berlin. |
| Danish: | Om vinteren bor *han* i Berlin. |
| English: | In the winter *he* lives in Berlin. |

We see that in German, as in Danish, Pop is the finite verb. And, as in Danish, the German Pop moves to the left of the Subject when any constituent is placed first in the clause.

Thus Danish shares with English a basic clause pattern, while it shares with German the basic conditions on the nature and movement of Pop.

## *10. Summary and conclusions*

Starting from the basic premise that continuous constituents are more basic than discontinuous ones, I have developed a typological model – called a Continuity model, or C-model, for short – which allows us to make certain generalizations about clause structure in English, Danish, and German. Furthermore, it permits us to make a systematic comparison of the three languages and provides us with what I believe are useful insights regarding the similarities and differences among the languages.

We have also seen that by taking the continuity principle as our basis for model construction, it is reasonable (and somewhat surprising, given the contrary impression provided by many grammar books) to conclude that the structure of subordinate clauses is simpler than that of main





clauses – in all three languages. It is simpler in the sense that it involves less 'movement' and fewer discontinuities.

Our analyses give us, too, a firm foundation for claiming that English and Danish are basically SVO (or SPO, or SPArg) languages, whereas German is basically an SOV (or SOP, or SArgP) language.

Furthermore, our C-model – combined with the proximity principle – gives us a logical explanation for the difference in the order of the verbs in the English and Danish Predicator on the one hand (auxiliaries + main verb), vs. the German Predicator on the other (main verb + auxiliaries).

There is, I believe, good reason to hope that further development of the C-model (for example, by incorporating optional adverbials) will lead to additional insights into the structure of each of these languages, and shed further light on how these languages are alike and different. Needless to say, I feel confident that C-models can be usefully employed in the study of other natural languages as well.

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